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Welfare Dependency among Danish Immigrants

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Kræn Blume** and Mette Verner***

Abstract

In this paper, we investigate determinants of the welfare dependency among immigrants in an assimilation framework. The duration of stay is a major determinant of welfare dependency. Also, assimilation patterns vary substantially across immigrants from developed and less developed countries, respectively. The late arriving immigrants are relatively more dependent on transfers, explaining part of the general increase in welfare dependency during the latest years. This is partly attributed to the large variation in qualifications across cohorts of immigrants. Furthermore, the business cycle effects of immigrants appear to be considerably larger than for natives.

JEL classification: C23, C33, D31, I21

Keywords: Welfare dependency, transfers, immigrants, assimilation, two-limit tobit.

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1   Introduction

At the time of arrival, welfare dependency is observed to be substantially higher among immigrants than among natives in most host countries. However, it has been argued that it is the most able and motivated individuals who emigrate from their country of origin (e.g. Chiswick (1978) and Bell (1997)).[1] If this was the case, one would expect the welfare dependency to fall quickly upon arrival to the host country as the immigrants become more assimilated into the host-country labour market. However, in many countries the integration into the labour market seems to be inadequate, and Denmark is no exception. While the employment rate is around 76% for natives, it is 47% for immigrants from non-western countries (Schultz-Nielsen (2002)) and therefore the welfare dependency is still high after many years in Denmark.

One explanation for this may be the "welfare magnet hypothesis" (Borjas (1999)). In countries with a high standard of living and a generous system of public transfers, low-income groups have high compensation rates. Hence, a special selection of immigrants is coming to these countries - both in terms of educational attainment and motivation in general. For Denmark this may very well be the case. For the tied-movers, mostly consisting of marriage migrants, the wish to live in a highly developed country may be one of the main reasons for involving in migration (Çelikaksoy et al. (2003)). For refugees, their emigration decisions are not considered voluntary, but the choice of *where* to apply for asylum may be influenced by the knowledge of the welfare systems in potential host countries.

Based on the above considerations, the aim of the present paper is to analyze the extent and persistence of welfare dependency among immigrants in Denmark. We do this in an assimilation framework in order to identify the process of welfare dependency in the years following migration. In addition, we will test whether variations in the labour market conditions at the time of entry to Denmark and age at migration matter for welfare dependency assimilation of the immigrants. Furthermore, we explore whether the business cycle in general may have different impacts on natives and immigrants, i.e. whether the immigrants tend to be more marginal labour than natives and therefore more dependent on transfers in downturns.

The rest of the paper is organized as follows. Section 2 describes the Danish welfare system. Section 3 presents the testable hypotheses of the paper. Section 4 introduces the data used and relevant descriptive statistics. In Section 5 the econometric framework is outlined, Section 6 presents the results and finally Section 7 concludes.

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[1] On behalf of the self-selection process in emigration, Borjas (1987) argues that it need not be the case but that it depends on the income distribution in both host country and country of origin and their correlation.

2 Background, immigrants and the Danish welfare system

Denmark is, along with the other Nordic countries, well known for being a fairly generous welfare state. The Scandinavian welfare states are characterised by a large public sector and high levels of public income transfers, especially to unskilled workers and other low-income groups. Individuals can either be *positive* or *negative* net contributors to the welfare system. If individuals pay a larger amount in tax than they receive in public services and transfers, they are positive net contributors to the welfare state and vice versa. Generally, individuals in their working age are expected to be positive net contributors to the welfare state.

Immigrants from non-western countries, however, tend to be negative net contributors to the welfare state, especially in the period immediately after migration. If immigrants become positive net contributors to the welfare state in the long run as they integrate into the host-country labour market, immigration can be looked upon as an "investment" with start-up costs (initial negative net contributions) and future pay-off (future positive net contributions). However, for this "investment" to be profitable, future pay-off needs to be positive; i.e. future public expenses on immigrants should be low.

Figure 2.1. Fraction of GDP attributed to public income transfers along with the Danish unemployment rate during the period 1984-1999.

Note: Official Statistics, Statistics Denmark (1990, 1999)

Public income transfers constitute a large proportion of public expenditure. Direct redistribution via cash-transfers from the public sector is of great importance in the Nordic countries, see Wadensjö and Örrje (2002). Figure 2.1 presents the fraction of Danish GDP that can be attributed to direct transfers to households along with the Danish unemployment rate during the period 1984-1999.

From Figure 2.1, it is seen that direct public income transfers account for between 16.3% and 21.2% of GDP in the period 1984-1999. Furthermore, it can be seen that the fraction of GDP attributed to direct transfers mimics the business cycle almost perfectly when the business cycle is described by the unemployment rate.

However, the public income transfers differ with respect to both duration and entitlement and furthermore with respect to whether the transfers are means-tested or a fixed amount (the transfers can also be means-tested with respect to either individual income or household income). For instance, while everyone is entitled to public welfare of infinite duration, only individuals with earned entitlement are entitled to unemployment insurance benefits which are of limited duration. Appendix A1 describes in more detail the different transfer types which are included in the analysis in the present paper along with a description of whether the individual transfers require entitlements, have limited durations and/or whether they are means-tested. In general, in the Danish welfare state the universal principle applies. Hence, immigrants have the same rights as natives when it comes to receiving public income transfers, with a few exceptions.[2] First, immigrants coming to Denmark as a part of a family reunification are not entitled to social welfare if the family members who applied for family reunification signed a contract committing them to support their future reunified family members. However, if a "social event" (e.g. divorce, unemployment or death of spouse) occurs to those family members who initially were in Denmark such that they no longer are able to support their reunified family members, the reunified family members become entitled to social welfare. If the immigrant who initially was in Denmark as a refugee, his future reunified family members are entitled to social welfare. Second, as a general rule, immigrants need to have been in Denmark for at least 10 years to receive early retirement pension and old-age pension (except for refugees and the early labour migrants).

Welfare dependency among immigrants

In this paper, we apply the concept of welfare dependency. Welfare dependency describes the fraction of household income that can be attributed to public income transfers. We refer to this as

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[2] See also Pedersen (2000) for a thorough examination of the different rules applying to natives and immigrants.

the *welfare dependency rate* (see Section 4 for a discussion of the construction of this measure). Due to data limitations and definitions, we are not able to trace all transfers. Therefore, we focus on *income-replacing transfers* such as pensions, social welfare and unemployment insurance benefits. Furthermore, we include two other types of transfers, namely *child benefits* and *public housing support* (see Appendix A1 for exact definitions of the various transfers). Own calculations show that the sum of these transfers amounts to between 69% to 75% of the total amount of public income transfers to households in the period 1984-1999 as reported in official statistics (Statistics Denmark (1990, 1999)).[3] In the following, we will refer to income-replacing transfers, child benefits and public housing support as "public income transfers" despite the fact that they do not fully account for all transfers received by Danish households.

Figure 2.2. Immigrants' degree of over-representation among receivers of public income transfers in relation to populations' share, 1984-1999.
Immigrants from developed countries (DC) and less developed countries (LDC)
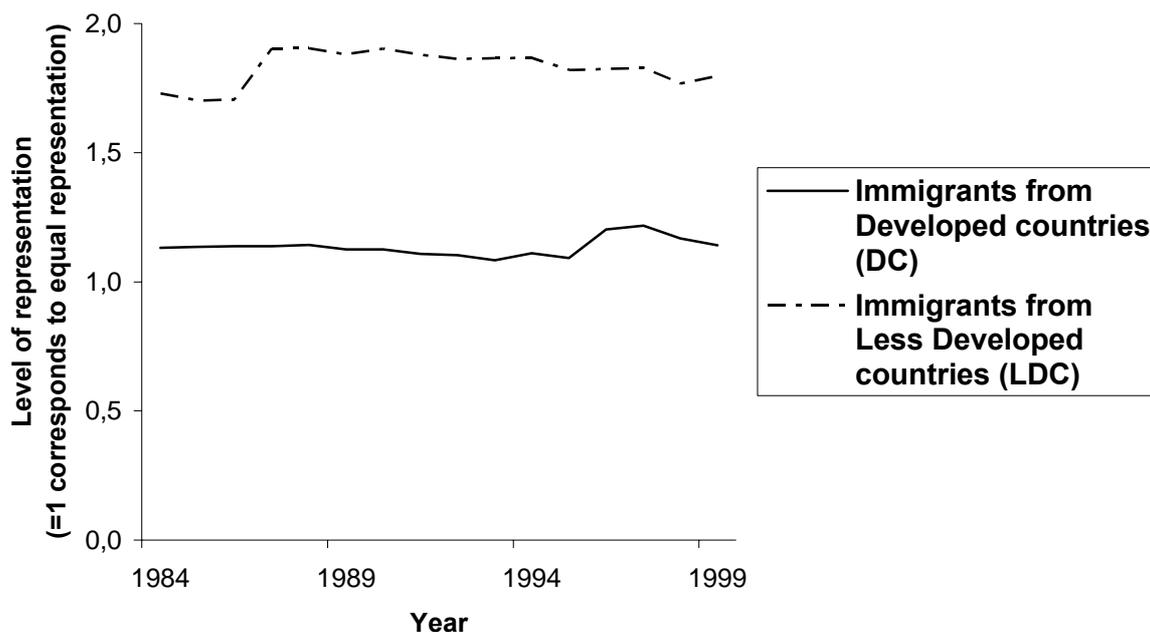
Note: Own calculations. A degree of representation =1 corresponds to no over- or under-representation.

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[3] The fraction ranges from 75% (1993) to 69% (1999). The fact that it accounts for less than 100% is due to at least two things. First, some public income transfers are not traceable in our data, e.g. some types of childcare subsidies. Second, the numbers concerning the total expenditure on public income transfers are based on published statistics from Statistics Denmark, i.e. they are based on all individuals in Denmark. In contrast, own calculations describing the amount paid in income replacing transfers, child benefits and public housing support are calculated on the basis of individuals aged 18 and above in the data set used in the paper, i.e. a 10% sample of the Danish population (see also Section 4.1).

An indicator of welfare dependency within a group of people in a society is the fraction of public income transfers received by the group compared to their relative population size. If the fraction of public income transfers received by the group exceeds its relative population size, it suggests relatively high welfare dependency of that group. Figure 2.2 presents the degree of over-representation of immigrants from developed countries (DC)[4] and less developed countries (LDC) among receivers of public income transfers during the period 1984-1999.[5] A value =1 corresponds to equal representation while a value >1 corresponds to over-representation. Figure 2.2 reveals that 1st generation immigrants – and especially from less developed countries – are highly overrepresented among the receivers of public income transfers, i.e. their fraction of public income transfers exceeds their relative population size.[6] However, the degree of over-representation seems to be fairly stable during the period 1984-1999 with a slight upward trend for immigrants from less developed countries.

To investigate how the receiving of public income transfers is distributed within the populations of natives and immigrants from developed countries and less developed countries, respectively, Figure 2.3 describes the distribution of the amounts received in public income transfers.

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[4] Throughout the paper, immigrants are split into two groups. The first group includes immigrants from developed countries (referred to as DC). The group of developed countries consists of the following countries: the Nordic countries, Other European countries, the Baltic countries, Russia, Ukraine, Georgia, Belarus, the USA, Canada, Japan, Australia and New Zealand. The second group includes immigrants from less developed countries (referred to as LDC) which contain all countries that are not included in the group of developed countries.

[5] For 1st generation immigrants from developed countries, the relative population size has increased from 2.2% in 1984 to 3.0% in 1999 while the relative population size of 1st generation immigrants from less developed countries has increased from 0.8% in 1984 to 2.8% in 1999. In relative terms, the share of immigrants from developed countries in the *total* immigrant population has decreased from 73.2% in 1984 to 51.6% in 1999.

[6] Due to the differences in entitlement to various transfers, one would expect different "transfer patterns" among immigrants and natives. Since entitlement to e.g. unemployment insurance benefits (UIB) is related to a stable labour market attachment, one would expect fewer 1st generation immigrants from less developed countries among receivers of UIB compared to e.g. social welfare where entitlement in general is universal. When focusing on social welfare only (including housing benefits), immigrants are even more overrepresented among the receivers. In 1999, 18.2% of social welfare transfers were received by 1st generation immigrants from less developed countries despite the fact they made up only 2.8% of the Danish population. 1st generation immigrants from less developed countries are also overrepresented among receivers of UIB but at a much smaller scale than for social welfare. In 1999, 3.6% of UIB were received by 1st generation immigrants from less developed countries. This supports Pedersen (2000) and Borjas and Hilton (1996) who also find different patterns of welfare utilization among immigrants and natives. However, we will not focus on the "transfer mix" in our analysis.

Figure 2.3. Distribution of the amounts received in public income transfers in 1989 and 1999.
Natives and immigrants from developed countries (DC) and less developed countries (LDC).

1989

1999
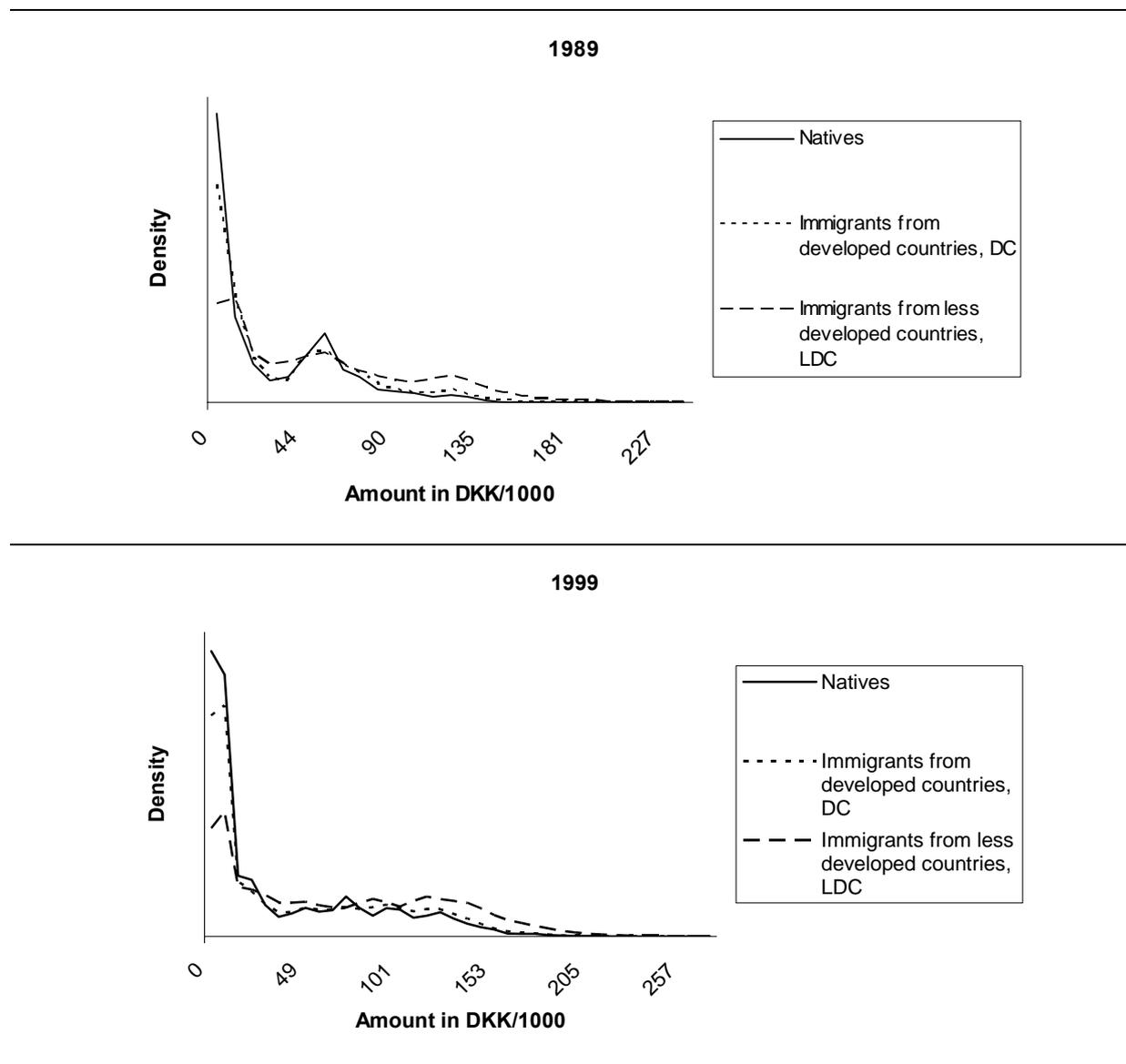
Note: Kernel densities based on own calculations. The figure describes how the amounts of received public income transfers are distributed among households.

Figure 2.3 shows that the majority of natives are concentrated with the lower part of the distribution while the opposite holds for immigrants from less developed countries. In fact, a large share of immigrants from less developed countries receive very large amounts in public income transfers (> DKK 100,000). Immigrants from developed countries lie somewhere in between natives and immigrants from less developed countries. This clearly shows that the distribution of public

income transfers is highly skewed to the right in the case of immigrants from less developed countries compared to natives and immigrants from developed countries.

3   Testable hypotheses concerning immigrants' welfare dependency

In the previous sections, it has been illustrated how the welfare dependency in Denmark differs across natives and immigrants and also across immigrants from developed countries and less developed countries, respectively. In this section, we present the three specific hypotheses of the persistence of welfare dependency among immigrants. These hypotheses are tested empirically in Section 6.

1) Assimilation profiles: In the literature, the evidence of the nature of assimilation has been mixed. On one hand, it can be argued that when immigrants arrive to the host country, they are likely to depend on public income transfers in the period immediately after immigration until they become integrated into the host-country labour market and earn their own income. Hence, immigrants' initial welfare dependency is likely to be high. If immigrants meet *barriers of entry* into the host-country labour market, the period of high welfare dependency will be relatively long. Depending on the strength of these barriers, assimilation *out* of welfare dependency is expected to take place as time since migration increases and the immigrants adapt to host-country society, norms etc. This hypothesis is confirmed in Hansen and Lofstrom (2003). On the other hand, if the migration decision is motivated by the generosity of the welfare system in the host country, the immigrant's welfare dependency is likely to remain high, according to Borjas' (1999) "welfare magnet hypothesis". In fact, welfare dependency may even increase as time passes since these immigrants gain insight and entitlement to the welfare system of the host country. Furthermore, Borjas and Hilton (1996) argue that immigrants' ethnic networks are used to gain insight into how the welfare system works, i.e. the types of welfare benefits received by earlier immigrant cohorts influence the take-up of welfare benefits among cohorts that arrived more recently. In that case, assimilation *into* welfare dependency takes place. This argument has also been put forward by e.g. Borjas (1999), Borjas and Hilton (1996), Riphahn (1999) and Borjas and Trejo (1993). The mixed evidence on immigrant assimilation in welfare dependency leaves our a priori expectation about immigrants' welfare dependency assimilation in Denmark an open question. In our empirical analysis, it will be analyzed whether immigrants assimilate *into* or *out of* welfare.

2) Business cycle effects: As unemployment incidence is highly correlated with welfare dependency, the state of the business cycles will affect the level of welfare dependency. During a recession, more individuals will experience higher welfare dependency as unemployment in-

creases and individuals with weak labour market attachment will be affected the most. Rosholm et al. (2001) and Blume et al. (2003) show that immigrants, and especially immigrants from less developed countries, have a weaker labour market attachment than natives. Nielsen (2002) found that welfare dependency is more sensitive to business cycle variation among immigrants than among natives and these results are confirmed in Barth et al. (2003). In order to investigate the business cycle effect on welfare dependency in a flexible manner, in our empirical analysis yearly indicator variables are included in the regression models and the estimated effects will show whether immigrants' welfare dependency is more sensitive to the business cycle than natives' welfare dependency.

   3) *Conditions at the time of arrival:* Prior research also suggests that conditions at the time of arrival influence the persistence of welfare dependency among immigrants (Nielsen (2002)). One of the most important factors is the age of the individual because acquiring host-country language abilities and adapting to new norms and a new culture is more difficult at a higher age. Hence, older immigrants are more likely to experience a high degree of welfare dependency. This is confirmed in e.g. Borjas and Hilton (1996) and Riphahn (1999). Another important factor is the labour market conditions at immigrants' arrival. According to e.g. Hansen and Lofstrom (2001), poor labour market conditions at the time of arrival may extend the period of high welfare dependency, as labour market entry in the host country is likely to be postponed. In the empirical part of this paper, both the age of the immigrants at immigration and the Danish unemployment rate at immigration are included in order to identify such differences.

4   Data

4.1   Data source

The empirical study in this paper is based on longitudinal data sets from Danish administrative registers supplied by Statistics Denmark to the Danish Institute of Local Government Studies (AKF). Throughout the paper, two different basic longitudinal data sets are used. The first data set is a 10% representative sample of the total Danish population (including immigrants) aged 15 and above covering the period 1981-1999. However, for computational reasons a 10% sub-sample of this data set in the period 1984-1999 is used in the analysis of welfare dependency among natives (31964 individuals and 324261 observations). Immigrants are excluded from this sub-sample. The second data set is a *full population* data set of the immigrant population in Denmark[7] aged 15 and above covering the period 1984-1999. All numbers and figures concern-

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[7] For a further description of immigrants in Denmark and the data set, see e.g. Rosholm et al. (2001).

ing immigrants are based on this data set. For computational reasons, the econometric analysis is restricted to a 10% sub-sample of 1st generation immigrants. The period 1984-1999 is used in the analysis of welfare dependency among immigrants (23832 individuals and 177362 observations). For our purpose, the data sets are restricted to individuals aged 25-56 years in order to minimize biased results stemming from education and retirement.

4.2 The income concept and income unit

Throughout the paper, the household is treated as the income unit. However, the unit of analysis is the individual, i.e. the individual characteristics for individual i are the characteristics of the sampled individual in household j.

The household income is defined as annual market income plus income transfers of the household members. Market income and income transfers (i.e. total income) include labour income, income from capital and transfers but do not take the rental value of housing, free day care etc. into account. Income from children and other household members than the head of household and spouse is ignored. If the spouse is aged less than 25 or more than 56, their income and transfers are, despite the age restriction of the sampled individuals, used to calculate total household income and public income transfers and thereby the welfare dependency rate of individuals i in household j.

Based on the description of the Danish welfare system, the transfers fall into two categories (see also Section 2):

I) Income replacing transfers (social welfare, unemployment insurance benefits, social pensions etc.)

II) Child benefits and public housing support.

Appendix A1 describes the different elements of the public income transfers in more detail. In the literature, generally the measure of transfers studied has been the *amounts* of transfers received by the unit of analysis studied. However, in this study we extend this approach to include the relative share of the total household income constituted by public transfers, i.e. *the welfare dependency rate*. This enables us to study, whether the *degree* of public support is changing over time, and hence whether the investment in integration yields a return in the long run.

By using total income and the aggregate transfers, we define the following welfare dependency rate for the sampled individuals i belonging to household j at time t:

$$\text{Welfare dependency rate}_{ijt} = \frac{\text{All Public Income Transfers}_{jt}}{\text{Total Income}_{jt}}$$

for individual $i=1,...,N$ belonging to household $j=1,...,J$ at time $t=1,...,T$. The welfare dependency rate is the key variable in our analysis of welfare dependency. In order to analyze the welfare dependency rate, a number of explanatory variables are used.

4.3   Explanatory variables

One of the key explanatory variables in the analysis is "year of entry into the Danish labour market". For immigrants, the year of entrance into the Danish labour market is defined as the immigration year. For natives, the year of entrance is defined as the year they leave the educational system calculated as: (current year - (age + education length +6)). For immigrants, the year of entrance is used to calculate years since migration (YSM) and in the econometric analysis it is specified as a spline function. The spline specification consists of five variables. The first variable describes years since migration. The other spline variables are number of years since migration exceeding 5, 10, 15 and 20 years, respectively. Based on the year of entrance, immigrant cohorts are also defined. The first cohort, 'cohort 0', entered the labour market prior to 1970. The other cohorts entered as follows: 'cohort 1': 1970-74, 'cohort 2': 1975-79, 'cohort 3': 1980-84, 'cohort 4': 1985-89, 'cohort 5': 1990-1994 and finally 'cohort 6': 1995-1999.

Educational variables are also included. First, an indicator for currently being enrolled at an education is defined. Second, a set of variables describing the educational level is defined. For both natives and immigrants, the level of Danish schooling is taken from the administrative registers while the level of immigrants' home-country schooling is collected through a survey conducted in 1999 among all immigrants who had a permanent residence permit in Denmark on 1st January 1999. Due to the survey design, immigrants who acquired Danish schooling prior to 1999 were not asked to participate in the survey. Among the immigrants who were asked to participate in the survey around 50% did not respond. This may constitute a problem if the non-respondents are not a random sample from the immigrant population. We choose to treat non-respondents as a unique group. Of course, this may not fully solve the problem of endogeneity since education and non-response may be correlated.

Based on this information, four educational variables are specified. The first variable is a continuous variable describing the number of years of Danish schooling. The second variable is a continuous variable describing the number of years of home-country schooling. The third variable is an indicator variable equal to 1 if educational information is missing because the individual is not asked to participate in the survey. The last educational variable is an indicator variable equal to 1 if the individual was asked to participate in the survey but chose not to respond. For each observation, only one of these variables will be larger than 0.

For natives, age is included as a spline function. The spline specification consists of five variables. The first variable is age and the four others are number of years by which age exceeds 30, 35, 40 and 45, respectively. For immigrants, a variable describing age at migration is defined. It should be noted that Age = YSM + Age at migration. Therefore, all three variables cannot be included in the empirical analysis simultaneously. We include only YSM and age at migration.

A variable describing number of kids in the household, an indicator for living in a "mixed" household[8] and a set of four indicators simultaneously defining both gender and civil status are included to capture differences in household composition. The variables simultaneously describing gender and civil status have cohabiting females as the excluded category. Furthermore, a few variables relating to the labour market are included. The first variable describes the proportion of the year spent as unemployed (the preceding year) at the individual level. The second variable describes the national unemployment rate at the year of entry into the Danish labour market. Finally, a set of indicators for the years 1985-1999 is included where the indicator for 1985 is the excluded category.

To capture differences between immigrants from developed countries and less developed countries, the year-dummies unemployment at migration, age at migration and the YSM-variables are interacted with the indicator for coming from a less developed country. Additional explanations along with descriptive statistics for the explanatory variables can be found in Appendix A2.

4.4 Descriptive results

In this section, we present descriptive measures concerning the amounts of transfers received and the welfare dependency rates among immigrants and natives in the period 1985-1999. Figure 4.1 presents the average welfare measures in the period 1985-1999 for natives, immigrants from developed countries (DC) and immigrants from less developed countries (LDC).

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[8] A household is defined to be "mixed" if the two adults in the household are one immigrant and one native.

Figure 4.1. Welfare dependency rates during the period 1985-1999.
Natives and immigrants from developed countries (DC) and less developed countries (LDC).

Average annual amount of transfers received

Average annual welfare dependency rate (WDR)
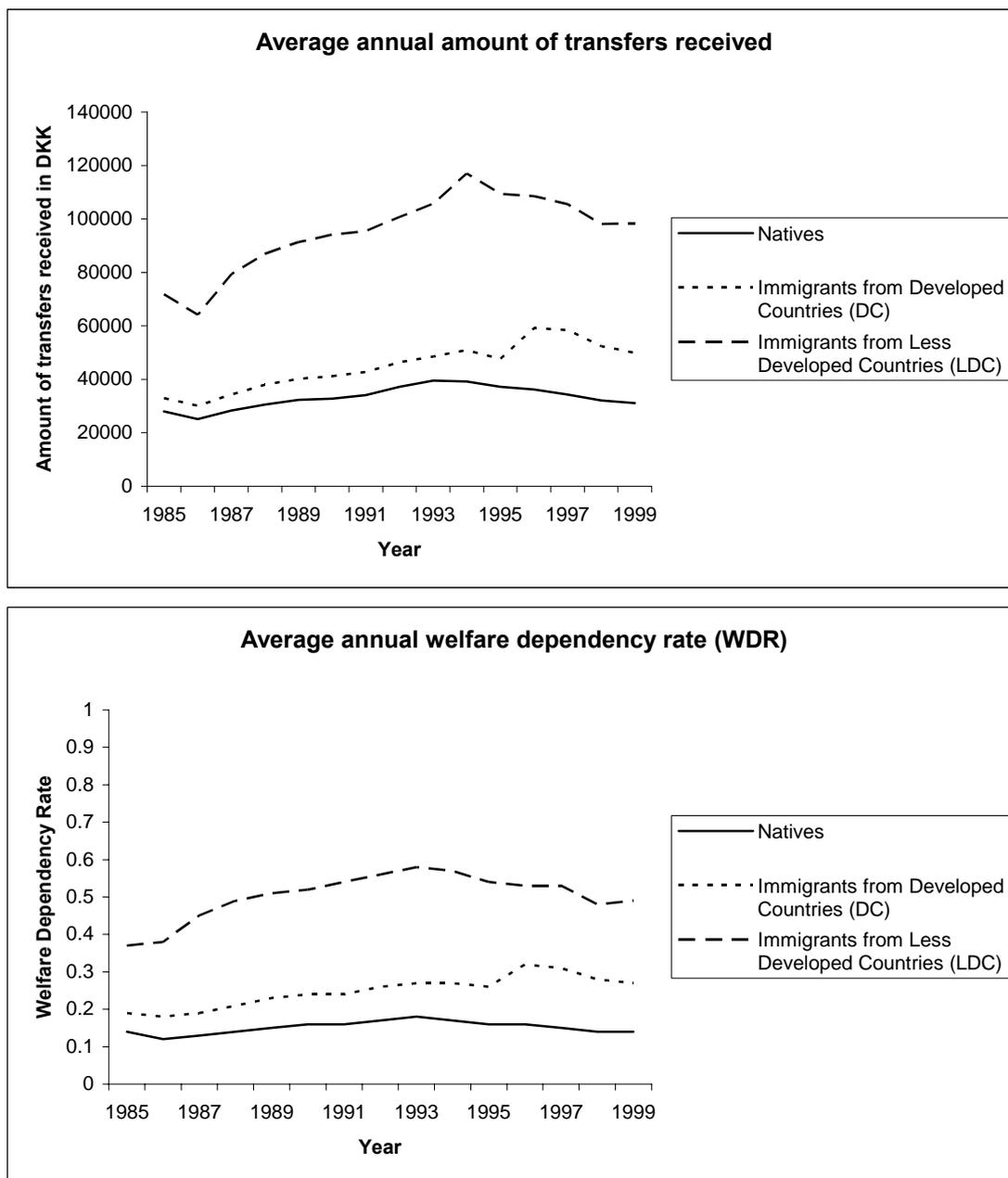
Note: Own calculations. The welfare dependency rate is defined as the fraction of personal income that can be attributed to public income transfers.

Figure 4.2a. Amount of transfers received the period 1985-1999 for each cohort.

Natives and immigrants from developed countries (DC) and less developed countries (LDC).
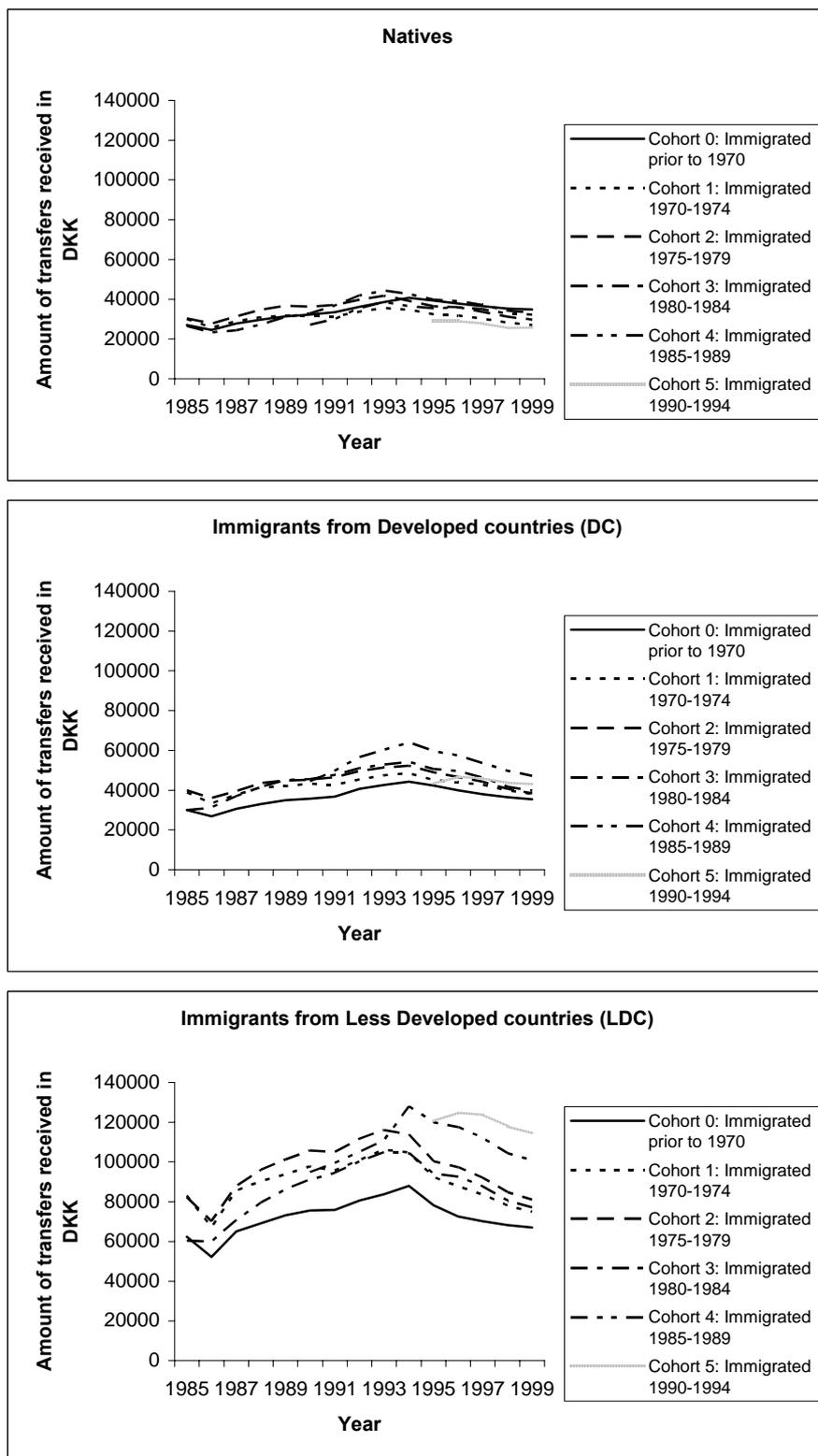
Note: Own calculations. The welfare dependency rates are reported after the arrival period has ended, for instance the welfare dependency rates for cohort 4, who arrived during the period 1985-1989, are reported from 1990 and onwards. The welfare dependency rate is defined as the fraction of personal income that can be attributed to public income transfers.

Figure 4.2b. Welfare dependency rates during the period 1985-1999 for each cohort.
Natives and immigrants from developed countries (DC) and less developed countries (LDC).
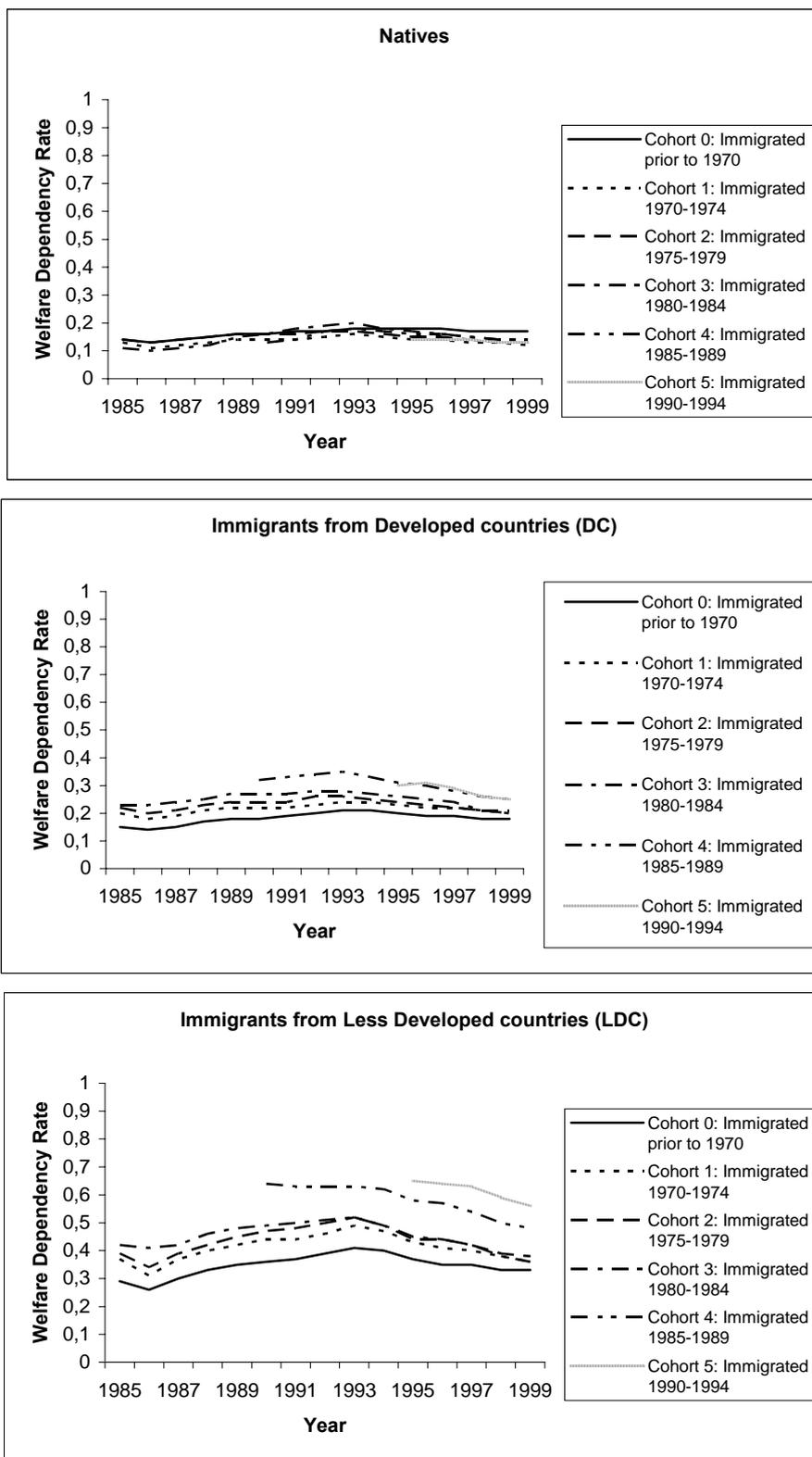
Note: Own calculations. The welfare dependency rates are reported after the arrival period has ended, for instance the welfare dependency rates for cohort 4, who arrived during the period 1985-1989, are reported from 1990 and onwards. The welfare dependency rate is defined as the fraction of personal income that can be attributed to public income transfers.

As it is evident from Figure 4.1, immigrants, and especially immigrants from less developed countries, receive more transfers and experience a higher welfare dependency rate than natives. Furthermore, welfare dependency has increased for immigrants in the period 1985-1999. Immigrants from developed countries have experienced an increase in the welfare dependency rate from 19% in 1985 to 27% in 1999 while immigrants from less developed countries have experienced an increase from 37% to 49%. Part of the increase among immigrants from developed countries around 1995 and onwards is due to the large inflow of refugees from former Yugoslavia during this period. Figure 4.1 also reflects the business cycle pattern. In Denmark, the business cycles peaked in 1986 (with welfare dependency around 12%) and reached bottom in 1993 (with welfare dependency around 18%). For immigrants, the large inflow of immigrants in the period 1985-1999 makes it difficult to determine what is business cycle variation and what is inflow of immigrants and thereby a change in the immigrant mix. The relation between business cycles and welfare dependency will be explored in more detail below.

As pointed out in Section 3, immigrants may assimilate in or out of welfare dependency as years since migration increase. Figures 4.2a and 4.2b present welfare dependency for each cohort of natives, immigrants from developed countries and immigrants from less developed countries.

The two figures for natives show that welfare dependency is fairly constant across cohorts during the period 1985-1999. However, it is worth mentioning that the late cohorts seem to be more sensible to business cycle variations than the early cohorts. This may reflect the relation between labour market attachment and impact of business cycle variation on welfare dependency as described in Section 3.

Concerning immigrants from developed countries, the middle parts of Figures 4.2a and 4.2b express some patterns of assimilation for this group of immigrants. The late cohorts experience a slightly higher welfare dependency than the earlier cohorts but with a decreasing trend. However, the pattern of assimilation in welfare dependency is most pronounced among immigrants from less developed countries who are presented in the bottom part of Figures 4.2a and 4.2b. As it can be seen, at the time of immigration the late cohorts of immigrants from less developed countries experience almost twice as large a welfare dependency rate than earlier cohorts who were already in the country. For instance, in 1990 cohort 0 (i.e. immigrants who immigrated prior to 1970) had a welfare dependency rate around 36% while cohort 4 (i.e. immigrants who immigrated between 1985 and 1989) had a welfare dependency rate around 64%. In the period following migration, welfare dependency seems to fall remarkably, e.g. cohort 4 who experiences a fall in the welfare dependency rate from 64% in 1990 to 48% in 1999.

As described in Section 3, immigrants' age at migration may have an impact on their welfare dependency. Table 4.1 describes the welfare dependency rate in 1990 and 1999 among immigrants with different ages at immigration.

Table 4.1. Immigrants' welfare dependency rates and amount of transfers received in 1990 and 1999 distributed by age at immigration.
Immigrants from developed countries (DC) and less developed countries (LDC).

	Immigrants from developed countries (DC)		Immigrants from less developed countries (LDC)	
	Year 1990	*Year 1999*	*Year 1990*	*Year 1999*
Age at immigration:	--- *Amount of transfers received in DKK* ---			
Aged <20	53911.1	47576.2	111492.7	89599.2
Aged 20-35	43986.8	48130.1	92649.9	100161.9
Aged >35	41245.0	73045.5	101738.3	119891.9
	---*Welfare dependency rate* ---			
Aged <20	0.29	0.25	0.48	0.46
Aged 20-35	0.26	0.26	0.55	0.50
Aged >35	0.30	0.41	0.64	0.64

Note: Own calculations. Only calculated for immigrants where time of immigration is known/registered. The welfare dependency rate is defined as the fraction of personal income that can be attributed to public income transfers.

As it can be seen in Table 4.1, the general tendency is that immigrants from less developed countries who immigrated at older ages experience higher welfare dependency rates than immigrants who immigrated at younger ages. During the period 1990-1999, the differences in welfare dependency between immigrants from less developed countries who immigrated at different ages have become significant. In 1999, immigrants from less developed countries aged more than 35 at migration experienced a welfare dependency rate of 64% compared to 46% for immigrants from less developed countries aged less than 20 at migration. These results suggest that age at migration is an important determinant of welfare dependency - especially among immigrants from less developed countries. These descriptive results are in line with the findings of Borjas and Hilton (1996) and Riphahn (1999).

Due to the close link between unemployment and welfare dependency, the current unemployment rate is expected to have an impact on welfare dependency. Table 4.2 contains information about welfare dependency during the period 1985-1999 distributed by years where the unemployment rate is either low (<8%), medium (8-10%) or high (>10%).

Table 4.2. Welfare dependency rates and amount of transfers received in 1985-1999 distributed by the current unemployment rate.

Natives and immigrants from developed countries (DC) and less developed countries (LDC).

	Natives	Immigrants from developed countries (DC)	Immigrants from less developed countries (LDC)
Current unemployment rate:	*--- Amount of transfers received in DKK ---*		
Low (<8%)	30324.6	46811.6	94925.9
Medium (8-10%)	32048.4	43392.6	94701.8
High (>10%)	37480.9	47316.5	106360.9
	---------- Welfare dependency ---------		
Low (<8%)	0.14	0.25	0.48
Medium (8-10%)	0.15	0.24	0.50
High (>10%)	0.17	0.26	0.56

Note: Own calculations. Based on a pooled sample of all observations in the period 1985-1999. The welfare dependency rate is defined as the fraction of personal income that can be attributed to public income transfers.

Table 4.2 illustrates that welfare dependency for natives and immigrants from developed countries increases with the national unemployment rate but also that it is only slightly sensitive to variations in the unemployment rate. Going from a period of low unemployment to a period of high unemployment only increases welfare dependency by 1-3 percentage points. However, for immigrants from less developed countries, welfare dependency is more sensitive to variations in the unemployment rate as the difference in welfare dependency rates between a period of low unemployment and a period of high unemployment is around 8 percentage points.

As pointed out in Section 3, not only the current unemployment rate, but also the host-country unemployment rate at immigration may affect long-run welfare dependency. Table 4.3 describes welfare dependency among natives and immigrants who immigrated when the Danish unemployment rate was either low (<8%), medium (8-10%) or high (>10%).

Table 4.3 shows that the unemployment rate at the time of entry to the labour market does not have a persistent impact on welfare dependency for natives but indeed it does for immigrants, especially in 1999. Immigrants who entered in periods with medium or high unemployment have experienced higher welfare dependency than immigrants who entered in periods with low unemployment. In 1999, immigrants from less developed countries who entered in periods with high unemployment experienced a welfare dependency rate which was 8 percentage points higher when compared to those who entered in periods with low unemployment. In 1999, immigrants from developed countries who entered in periods with high unemployment experienced a welfare dependency rate which was 13 percentage points higher when compared to those who entered in

periods with low unemployment. This indicates that the initial labour market conditions do have an impact on long-run welfare dependency for immigrants. For natives, the impact seems to be of minor importance.

Table 4.3. Welfare dependency rates and amount of transfers received in 1990 and 1999 distributed by the unemployment rate at entry.
Natives and immigrants from developed countries (DC) and less developed countries (LDC).

	Natives		Immigrants from developed countries (DC)		Immigrants from less developed countries (LDC)	
	Year 1990	*Year 1999*	*Year 1990*	*Year 1999*	*Year 1990*	*Year 1999*
Unemployment rate at the year of entry:	*--- Amount of transfers received in DKK ---*					
Low (<8%)	33046.0	31436.2	45092.3	38203.0	101868.0	90935.1
Medium (8-10%)	32105.8	32386.0	44319.9	55245.2	89551.8	102230.2
High (>10%)	30065.2	27927.9	43273.7	66962.3	87149.4	109649.1
	---------- Welfare dependency rate ---------					
Low (<8%)	0.16	0.14	0.25	0.22	0.52	0.46
Medium (8-10%)	0.15	0.14	0.31	0.29	0.60	0.50
High (>10%)	0.15	0.13	0.27	0.35	0.52	0.54

NOTE: Own calculations. For natives, the year of entry is defined to be when they leave the educational system. For immigrants, the year of entry is defined to be the time of immigration. For immigrants, the numbers are based on immigrants where time of immigration is known/registered. The welfare dependency rate is defined as the fraction of personal income that can be attributed to public income transfers.

5   Econometric specification

In order to study the determinants of welfare dependency rate we estimate two types of tobit models, namely a one-limit tobit in the case of the amount of transfers (a continuous variable censored from below at 0) and a two-limit tobit model for the welfare dependency rate (which is a continuous variable censored from below at 0 and from above at 1). In the most general case, the two-limit case, the model can be formulated as

$$y_{it}^* = \beta x_{it} + v_i + \varepsilon_{it} \tag{1}$$

where y_{it}^* is the latent (uncensored) variable for individual i at time t, x_{it} is the matrix of individual characteristics, v_i individual, time-invariant specific effect and ε_{it} an idiosyncratic error term. The censoring of the dependent variable (the welfare dependency rate) results in the following ob-served dependent variable:

$$y_{it} = \begin{cases} y_{it}^* & \text{if } y_{it} \in U \\ 0 & \text{if } y_{it} \in L \\ 1 & \text{if } y_{it} \in R \end{cases} \tag{2}$$

U refers to the group of uncensored individuals, whereas L and R refer to the groups of left- and right-censored observations, respectively. As the data set is a panel data set, with up to 15 observations per individual, the model is specified as a random effects tobit model, assuming that $v_i \sim N(0, \sigma_v^2)$.

Hence, the contribution to the likelihood function for each individual can be written as follows:

$$L_i = \int_{-\infty}^{\infty} \frac{e^{-v_i^2/2\sigma_v^2}}{\sqrt{2\pi}\sigma_v} \left\{ \prod_{t=1}^{n_i} F(\beta x_{it} + v_i) \right\} dv_i \tag{3}$$

where

$$F(\Delta_{it}) = \begin{cases} \left(-1/\sqrt{2\pi\sigma_\varepsilon^2} \right) e^{-(y_{it} - \Delta_{it})^2/(2\sigma_\varepsilon^2)} & \text{if } y_{it} \in U \\ \Phi\left(\dfrac{y_{it} - \Delta_{it}}{\sigma_\varepsilon} \right) & \text{if } y_{it} \in L \\ 1 - \Phi\left(\dfrac{y_{it} - \Delta_{it}}{\sigma_\varepsilon} \right) & \text{if } y_{it} \in R \end{cases} \tag{4}$$

In the one-limit case, the last term of F(.) drops out. The model is estimated by maximum likelihood[9] and the results from the estimation are presented below.

6 Results

In this section, we present the results from the estimation of the model described in Section 5. The models are estimated separately by gender and for natives and immigrants, respectively. After presenting the estimates, we focus on the assimilation patterns for immigrants, as well as the business cycle effects (represented by year indicators in the model).

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[9] The model is estimated by the use of Stata, approximating the integral in (3) with a 4-point Gauss-Hermite quadrature.

6.1 Estimates from two-limit tobit

In Table 6.1, the results for the models estimated with WDR as the dependent variable are presented (see Appendix for models with levels of welfare as the dependent variables). The models are estimated separately by gender, mainly because the family status variables affect men and women significantly different. The results show that for all groups, singles have a higher degree of welfare dependency than cohabiting/married individuals. If a native individual is part of a mixed household, i.e. is cohabiting/married to an immigrant, the welfare dependency of the household, and hence the individual, increases. This is also the case for immigrants from developed countries whereas the opposite is the case for immigrants from less developed countries. The latter is no surprise because this is simply the mirror picture of the results for native Danes. As child benefits are included in this measure for welfare dependency, the number of kids in the household increases the welfare dependency for all groups of women and for men from LDC.

The individual degree of unemployment in the preceding year is included in the model as a proxy for current employment status. Having been fully employed in the previous year reduces welfare dependency with between 11 and 37 percentage points compared to an individual who was fully unemployed (depending on which group is considered). Furthermore, the estimated time indicators show that there is a clear business cycle effect in the welfare dependency. The business cycle effect will be described and illustrated in more detail below.

As expected from the descriptive statistics, WDR depends on the country of origin. It appears that for immigrants belonging to EC12 the WDR is significantly lower than for the Nordic countries (reference category), whereas Ex-Yugoslavian immigrants have a significantly higher WDR. In the case of immigrants from less developed countries, the Iranian and Iraqi immigrants have the highest WDR (Turkey is the reference category). However, not only the country of origin is an important determinant of the WDR, also the time of arrival. Therefore, arrival cohort indicators are included in the regressions as well. For women from developed countries and males from less developed countries, the 1990s' cohort (the reference category) is doing better in the sense that they are less dependent on welfare than the previous cohorts. However, for women from LDC's and men from DC's that is not the case, as the previous cohorts are less dependent on welfare.

Table 6.1. Estimation results from estimation of Two-Limit Tobit Model.

Natives and immigrants aged 25-57.

Dependent variable: Welfare dependency rate (WDR)

	Females						Males					
	Natives		Immigrants from developed countries (DC)		Immigrants from less developed countries (LDC)		Natives		Immigrants from developed countries (DC)		Immigrants from less developed countries (LDC)	
	Coef.	Std.err.	Coef.	Std.err.	Coef.	Std.err.	Coef.	Std.err.	Coef.	Std.err.	Coef.	Std.err.
D1986	-0.0164 **	0.0030	-0.0175 **	0.0043	-0.0502 **	0.0072	-0.0286 **	0.0045	-0.0260 **	0.0065	-0.0059	0.0068
D1987	0.0279 **	0.0030	0.0420 **	0.0043	0.0383 **	0.0071	-0.0028	0.0045	-0.0006	0.0065	0.0534 **	0.0066
D1988	0.0464 **	0.0030	0.0689 **	0.0043	0.0786 **	0.0071	0.0032	0.0046	0.0239 **	0.0066	0.0706 **	0.0065
D1989	0.0594 **	0.0030	0.0856 **	0.0043	0.0986 **	0.0072	0.0165 **	0.0046	0.0424 **	0.0066	0.0948 **	0.0065
D1990	0.0620 **	0.0030	0.0889 **	0.0043	0.1187 **	0.0073	0.0191 **	0.0046	0.0449 **	0.0067	0.1030 **	0.0065
D1991	0.0694 **	0.0030	0.0913 **	0.0044	0.1087 **	0.0075	0.0416 **	0.0046	0.0626 **	0.0068	0.1275 **	0.0066
D1992	0.0856 **	0.0030	0.1113 **	0.0044	0.1363 **	0.0078	0.0569 **	0.0047	0.0863 **	0.0069	0.1533 **	0.0067
D1993	0.0950 **	0.0030	0.1180 **	0.0045	0.1579 **	0.0081	0.0674 **	0.0047	0.0986 **	0.0070	0.1761 **	0.0069
D1994	0.0841 **	0.0030	0.1133 **	0.0046	0.1402 **	0.0085	0.0479 **	0.0048	0.0770 **	0.0072	0.1664 **	0.0071
D1995	0.0794 **	0.0031	0.0975 **	0.0047	0.1032 **	0.0089	0.0452 **	0.0049	0.0682 **	0.0074	0.1298 **	0.0073
D1996	0.0807 **	0.0031	0.1179 **	0.0047	0.1122 **	0.0093	0.0500 **	0.0050	0.1019 **	0.0075	0.1391 **	0.0076
D1997	0.0760 **	0.0031	0.0986 **	0.0049	0.0998 **	0.0098	0.0562 **	0.0050	0.0818 **	0.0077	0.1301 **	0.0079
D1998	0.0580 **	0.0032	0.0660 **	0.0050	0.0654 **	0.0103	0.0402 **	0.0052	0.0292 **	0.0081	0.0758 **	0.0082
D1999	0.0515 **	0.0032	0.0575 **	0.0052	0.0752 **	0.0107	0.0224 **	0.0053	0.0081	0.0085	0.0966 **	0.0085
Single	0.1298 **	0.0017	0.1449 **	0.0033	0.1277 **	0.0038	0.0618 **	0.0027	0.1168 **	0.0054	0.0268 **	0.0031
No. of Kids	0.0548 **	0.0008	0.0613 **	0.0011	0.0340 **	0.0011	-0.0110 **	0.0014	-0.0048 **	0.0019	0.0050 **	0.0010
Mixed Househ.	0.0174 **	0.0050	0.0041	0.0031	-0.2174 **	0.0051	0.0618 **	0.0109	0.0250 **	0.0059	-0.1855 **	0.0044
Individual U	0.0246 **	0.0003	0.0228 **	0.0003	0.0117 **	0.0004	0.0370 **	0.0005	0.0341 **	0.0005	0.0206 **	0.0003
Ongoing Educ.	0.1063 **	0.0030	0.0670 **	0.0043	-0.0072	0.0060	0.1678 **	0.0054	0.1214 **	0.0073	0.0439 **	0.0045
EC12			-0.0059 **	0.0028					-0.0631 **	0.0075		
Ex-Yugoslavia			0.4437 **	0.0050					0.4080 **	0.0097		
Other DC			0.0156 **	0.0032					0.0696 **	0.0091		
Pakistan					0.0469 **	0.0111					-0.0332 **	0.0080
Vietnam					0.1245 **	0.0085					0.0658 **	0.0109
Iran					0.2656 **	0.0092					0.2655 **	0.0078
Iraq					0.2993 **	0.0099					0.2617 **	0.0084

	(1)	SE	(2)	SE	(3)	SE	(4)	SE	(5)	SE	(6)	SE
No State					0.2857**	0.0105					0.2196**	0.0078
Other LDC					0.0104	0.0067					0.0028	0.0056
Cohort 1970s			0.0612**	0.0079	-0.0611**	0.0140			0.0133	0.0185	0.0402**	0.0131
Cohort 1980s			0.0236**	0.0050	-0.0559**	0.0073			-0.0380**	0.0094	0.0053	0.0070
Educ Danish	-0.0100**	0.0002	-0.0113**	0.0005	-0.0191**	0.0008	-0.0332**	0.0006	-0.0355**	0.0013	-0.0285**	0.0008
Educ home			-0.0110**	0.0005	-0.0120**	0.0007			-0.0353**	0.0012	-0.0207**	0.0008
No response			-0.1087**	0.0071	-0.0767**	0.0080			-0.3715**	0.0168	-0.2104**	0.0101
Not asked			-0.0946**	0.0077	-0.0571**	0.0086			-0.3523**	0.0174	-0.2060**	0.0103
U at entry	-0.0017**	0.0003	0.0041**	0.0008	-0.0006	0.0013	-0.0094**	0.0008	0.0040*	0.0022	0.0063**	0.0013
Age at immig.			-0.0063**	0.0023	0.0181**	0.0026			0.0006	0.0037	0.0040	0.0028
Age	-0.0899**	0.0063					-0.0906**	0.0096				
Age30+	0.0440**	0.0100					0.0005	0.0153				
Age35+	0.0474**	0.0092					0.0274*	0.0148				
Age40+	-0.0319**	0.0089					-0.0274*	0.0146				
Age45+	0.0546**	0.0070					0.1560**	0.0114				
YSM missing			-0.0874**	0.0106	-0.2435**	0.0160			-0.1684**	0.0229	-0.2839**	0.0148
YSM			-0.1413**	0.0114	-0.1010**	0.0122			-0.1933**	0.0161	-0.4886**	0.0122
YSM5+			0.0962**	0.0167	-0.0082	0.0165			0.0952**	0.0234	0.3182**	0.0169
YSM10+			0.0110	0.0148	0.0859**	0.0147			0.0316	0.0214	0.0986**	0.0152
YSM15+			0.0151	0.0158	0.0408**	0.0170			0.0065	0.0237	0.0037	0.0184
YSM20+			0.0553**	0.0175	-0.0067	0.0206			0.0669**	0.0274	0.0756**	0.0229
Constant	0.4657**	0.0182	0.2261**	0.0136	0.4972**	0.0189	0.7019**	0.0289	0.4535**	0.0349	0.7165**	0.0192
σ_u	0.2438	0.0009	0.2760	0.0010	0.2256	0.0012	0.2645	0.0011	0.3306	0.0016	0.2428	0.0012
σ_e	0.1913	0.0004	0.2510	0.0006	0.2707	0.0007	0.2700	0.0008	0.3349	0.0010	0.3123	0.0007
ρ	0.6189	0.0019	0.5473	0.0020	0.4099	0.0028	0.4898	0.0021	0.4935	0.0023	0.3768	0.0024
Log L	-11931.6		-48296.8		-35763.1		-60021.7		-71685.0		-68509.6	
N	158777		144660		104183		165484		137597		143290	
Left-censored	39479		33968		7352		85172		59775		22420	
Right-censored	3017		8496		10260		3673		7681		10719	

NOTE: ** indicates significance at a 5% level and * at a 10% level.

For all groups, the length of completed Danish education has a negative impact on the degree of welfare dependency and the effects for immigrants are of the same size as that of Danes. However, for women one additional year of Danish education reduces the welfare dependency rate by about 1 percentage point, whereas it is around 3% for males. Also education acquired in the country of origin reduces welfare dependency and the estimates are roughly the same as in the case of Danish education. This suggests that education acquired in the country of origin matters for the success of the immigrant in the Danish labour market and is close to being perfectly transferable across international borders.[10] The general results concerning the impact of education on welfare dependency are in contrast to Riphahn (1999) who finds that an increased level of schooling increases welfare dependency. However, Blume (2003) finds that the level of both Danish and home-country schooling has a positive impact on immigrants' wages in the Danish labour market which suggests that schooling in general has a positive impact on immigrants' performance in Denmark.

Generally, the Danish unemployment rate at the time of entry to the Danish labour market has only a very limited (though significant) impact on welfare dependency and the direction of the effects varies across groups of individuals.

Age at the time of immigration has only a small impact and only for females it is statistically significant. However, the estimated effect for DC women is negative, whereas it is positive and three times larger in the case of LDC women. Age of the individual is included as a linear spline function.[11] This means that the variables enter in a cumulative way.[12] For instance native women aged 25-30 have a coefficient of (-0.0899) while those aged 30-35 have a coefficient of (-0.0899) + (0.0440)=(-0.0351), etc. It is seen that age generally increases welfare dependency until the age of 45, but from that point age has a positive impact. This confirms to some extent the descriptive results from Section 4.4 indicating a lower level of welfare dependency as time since labour market entry increases – at least up to the age where retirement approaches.

The results regarding the duration of stay in Denmark confirm the descriptive results presented in Section 4.4. For immigrants, years since migration, included as a linear spline function, generally reduce welfare dependency indicating assimilation out of welfare dependency. Only in the case of immigrants from LDCs having stayed in Denmark for more than 20 years there is a

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[10] This contrasts general results from the literature, see e.g. Friedberg (2000) for the Israeli labour market and Blume (2003) for the case of Denmark.

[11] The age variable is included for natives. It is highly correlated with years since migration and therefore only age at the time of immigration is included for immigrants.

[12] The same holds for years since migration (YSM) in the case of immigrants.

positive effect of around 2.5% per additional year since migration. This result is in line with Hansen and Lofstrom (2003) who find a similar result for immigrants in Sweden.

The constants of the estimated models vary substantially across the groups considered and the effect of that becomes clear when studying the assimilation profiles in the next section.

6.2   Welfare dependency assimilation process

In order to explore the welfare dependency assimilation process of immigrants in more detail, the estimated models for the welfare dependency rate presented in Table 6.1 are used to calculate predicted assimilation profiles. The predicted welfare dependency rate $\widehat{WDR}$ is calculated as the latent variable $y_t^* = x_t'\beta$ presented in Expression (2) in Section 5. The vector of characteristics, x_t, is defined for a "standard person". The characteristics of the standard persons are defined by the mean values for the explanatory variables in the relevant sub-samples (i.e. natives, immigrants from developed countries and immigrants from less developed countries) with a few exceptions, however. The standard persons are not living in mixed households. Furthermore, unless else is specified the standard immigrant from developed countries has 12.8 years of home-country schooling while the standard immigrant from less developed countries has 11.4 years of home-country schooling.[13] The assimilation profiles are calculated for a person who immigrated at the age of 25 and who is living in Denmark during the next 25 years until the age of 50. For natives, the process of assimilation in welfare dependency process is determined by age while it is determined by years since migration along with its interactions for immigrants.

The predicted assimilation profiles for these standard persons are presented in Figure 6.1. The predicted assimilation profile for natives is included for the purpose of comparison.

Male immigrants from less developed countries initially experience a very high welfare dependency rate (80%) compared to male immigrants from developed countries (10%) and natives (10%). However, male immigrants from less developed countries tend to assimilate faster out of welfare dependency than immigrants from developed countries, though never reaching a level lower than 43%. It is clear from the figure that welfare dependency of immigrants from less developed countries decreases relatively fast and after approximately 15 years it stabilizes at a level of welfare dependency around 43%. This level of welfare dependency is, however, considered to be a rather high level. Despite the unambiguous assimilation out of welfare dependency for male

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[13] These values are the mean values for immigrants from developed countries and less developed countries calculated on the basis of those immigrants from developed countries and less developed countries who have a positive number of years of home-country schooling, respectively.

immigrants from both developed countries and less developed countries, the low level of welfare dependency for natives is only reached in the case of DC immigrants.

Figure 6.1. Predicted assimilation profiles for welfare dependency.
Natives and immigrants from developed countries (DC) and less developed countries (LDC).
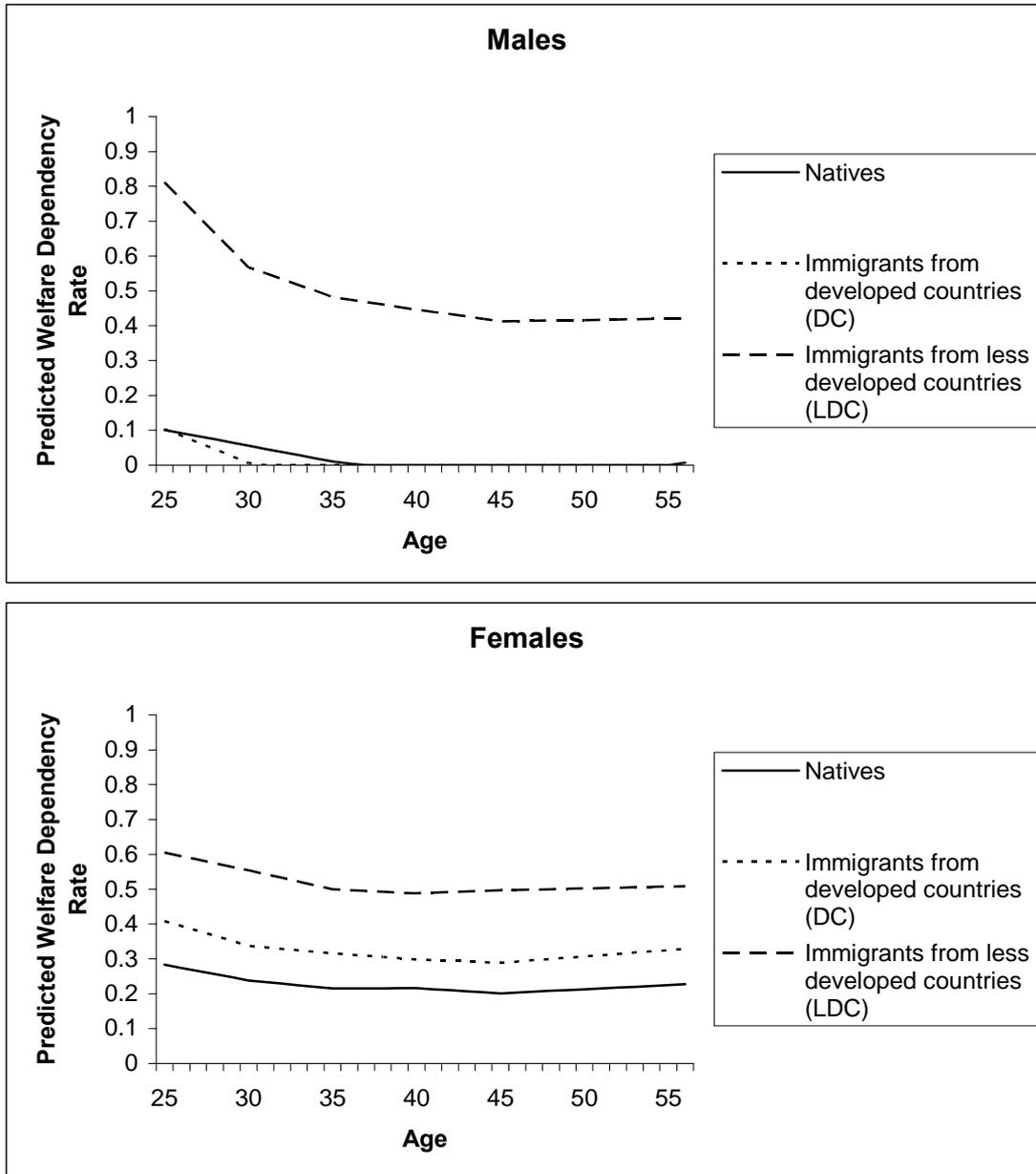
Note: The assimilation profiles are calculated for standard persons during the age period 25-57 who do not live in mixed households and who are not single. Immigrants are a weighted average of the different countries of origin and belong to cohort 1970. Immigrants from DC are assumed to have the mean value of home-country schooling (calculated on the basis of immigrants from DC with number of years of home-country schooling greater than 0) and correspondingly for immigrants from LDC. In all other respects, the standard persons have got the mean values of the explanatory variables as individual characteristics.

In the case of females, the levels of the predicted WDR are relatively high for all groups and the assimilation profile is more flat than for males. An implication of this is that the levels of welfare

dependency remain relatively high. The finding that immigrants assimilate out of welfare is in line with Hansen and Lofstrom (2003) who find a similar result for immigrants in Sweden. However, the results are in contrast to Borjas and Trejo (1993), Baker and Benjamin (1995), Borjas and Hilton (1996) and Riphahn (1999) who all find that immigrants assimilate into welfare. It should be noted that the applied concept of transfers here is broader than the concepts generally applied in these analyses. However, the fact that our data suggest that immigrants assimilate out of welfare dependency seems to be a fairly robust result.[14] It can therefore be concluded that Denmark is not a true "welfare magnet" in the sense that immigrants start out with initially high welfare dependency and then furthermore assimilate into welfare dependency as they gain insight into the Danish welfare system. Our results do not point in that direction.

For immigrants to be a "profitable investment" for the society in the long run, their welfare dependency needs to be relatively low in the years when they are supposed to be net-contributors to the welfare state, i.e. primarily the age 25-50. However, Figure 6.1 suggests an initially very high level of welfare dependency in the period following immigration and the predicted welfare dependency remains at a high level in the case of most immigrant groups. This implies that immigrants' age at the time of arrival may be crucial with respect to whether immigrants are a "profitable investment" for the Danish society. To explore this in more detail, additional immigrant standard persons have been constructed having different ages at the entry to Denmark (namely 15, 25, 35 or 45 years). All these standard persons are assumed to have brought 7 years of home-country schooling and not to have acquired any Danish schooling.[15] Figure 6.2 describes assimilation in welfare dependency for immigrants from developed countries and less developed countries when the different standard persons with varying age at immigration are applied.

The upper parts of Figures 6.2 (a and b) show that the patterns of assimilation in welfare dependency do not diverge much between the immigrants from developed countries. All males tend to assimilate towards a level around 20% within 15 years. For immigrants from less developed countries, the assimilation patterns for the different standard persons are also very similar, though they never approach as low a level as is the case for DC immigrants. These results are

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[14] A part of the analysis has also been carried out with a narrower concept of public income transfers. Narrowing the concept of public income transfers had no effect on the conclusions drawn.

[15] The reason why the level of schoolings is changed compared to the standard persons applied above is due to the fact that immigrants who immigrated at the age of 15 could not have brought more than seven years of schooling. To isolate the pure effect of age at migration other variables remain the same for the applied standard persons.

confirmed in the female case, though again, the female levels are generally higher than the male levels.

Figure 6.2a. Welfare dependency assimilation profiles for *male* immigrants with varying age at entry.
Immigrants from developed countries (DC) and less developed countries (LDC).

Male Immigrant from Developed Countries (DC)

Legend:
- Aged 15 at entry
- Aged 25 at entry
- Aged 35 at entry
- Aged 45 at entry

Y-axis: Predicted Welfare Dependency Rate (0 to 1)
X-axis: Age (25 to 55)

Male Immigrants from Less Developed Countries (LDC)

Legend:
- Aged 15 at entry
- Aged 25 at entry
- Aged 35 at entry
- Aged 45 at entry

Y-axis: Predicted Welfare Dependency Rate (0 to 1)
X-axis: Age (25 to 55)

Note: The assimilation profiles are calculated for standard persons during the age period 25-57 who do not live in mixed households and who are not single. Immigrants are a weighted average of the different countries of origin and belong to cohort 1970. Immigrants are assumed to have seven years of home-country schooling. I all other respects, the standard persons have got the mean values of the explanatory variables as individual characteristics.

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Figure 6.2b. Welfare dependency assimilation profiles for *female* immigrants with varying age at entry.
Immigrants from developed countries (DC) and less developed countries (LDC).

Female Immigrants from Developed Countries (DC)

Female Immigrants from Less Developed Countries (LDC)

Note: The assimilation profiles are calculated for standard persons during the age period 25-57 who do not live in mixed households and who are not single. Immigrants are a weighted average of the different countries of origin and belong to cohort 1970. Immigrants are assumed to have seven years of home-country schooling. I all other respects, the standard persons have got the mean values of the explanatory variables as individual characteristics.

Based on this, it can be concluded that the chance for immigrants to be a "profitable" investment for society is reduced as the age at immigration increases. These results are in line with Borjas and Hilton (1996) and Riphahn (1999) who find that a high age at immigration increases welfare dependency. This may be explained by better knowledge of Danish language and culture among

the immigrants who immigrate at young ages. However, especially for immigrants from less developed countries the welfare dependency is, despite its stabilizing pattern, always at a relatively high level.

6.3 Welfare dependency and the business cycle

All models for both immigrants and natives are estimated with year dummies in order to capture year-specific effects, which can be interpreted as business cycle effects and other effects that influence the welfare dependency, see Barth et al. (2003). To illustrate the impact from the business cycle, predicted welfare dependency rates, $\widehat{WDR}$, are calculated for the standard persons described above in each of the years 1985-1999. The only variables allowed to vary are the year dummies and their interactions while age and years since migration are not changed in order to capture the pure effect. Based on the predicted value of the welfare dependency rate in year $t, \widehat{WDR(t)}$, we calculate

$$\widehat{WDR(t)} - MEAN\left(\widehat{WDR}\right) \;,\quad \text{where } MEAN\left(\widehat{WDR}\right) = \frac{\sum_{t=1985}^{1999} \widehat{WDR(t)}}{15}$$

for the three standard persons, i.e. natives, immigrants from developed countries and immigrants from less developed countries. The results from the calculations are presented in Figure 6.3.

Figure 6.3 shows that for native males the predicted welfare dependency rates have a slightly increasing trend during the period 1985-1999. For immigrants the upward trends is more significant until around 1994 where it peaks and starts a downward trend. Part of the upward trend for immigrants from developed countries until 1994 is probably due to the large inflow of refugees from former Yugoslavia who immigrated to Denmark during this period. Generally, it is remarkable that the predicted welfare dependency rate for immigrants – and especially immigrants from less developed countries – generally expresses more volatility than for natives and that both maximum and minimum deviations from the mean are remarkably larger than for natives. These results are in line with Barth et al. (2003). For women similar patterns emerge though the difference between natives and immigrants tends to be smaller.

Figure 6.3. The impact from business cycle variation on predicted welfare dependency during 1985-1999.
Natives and immigrants from developed countries (DC) and less developed countries (LDC).
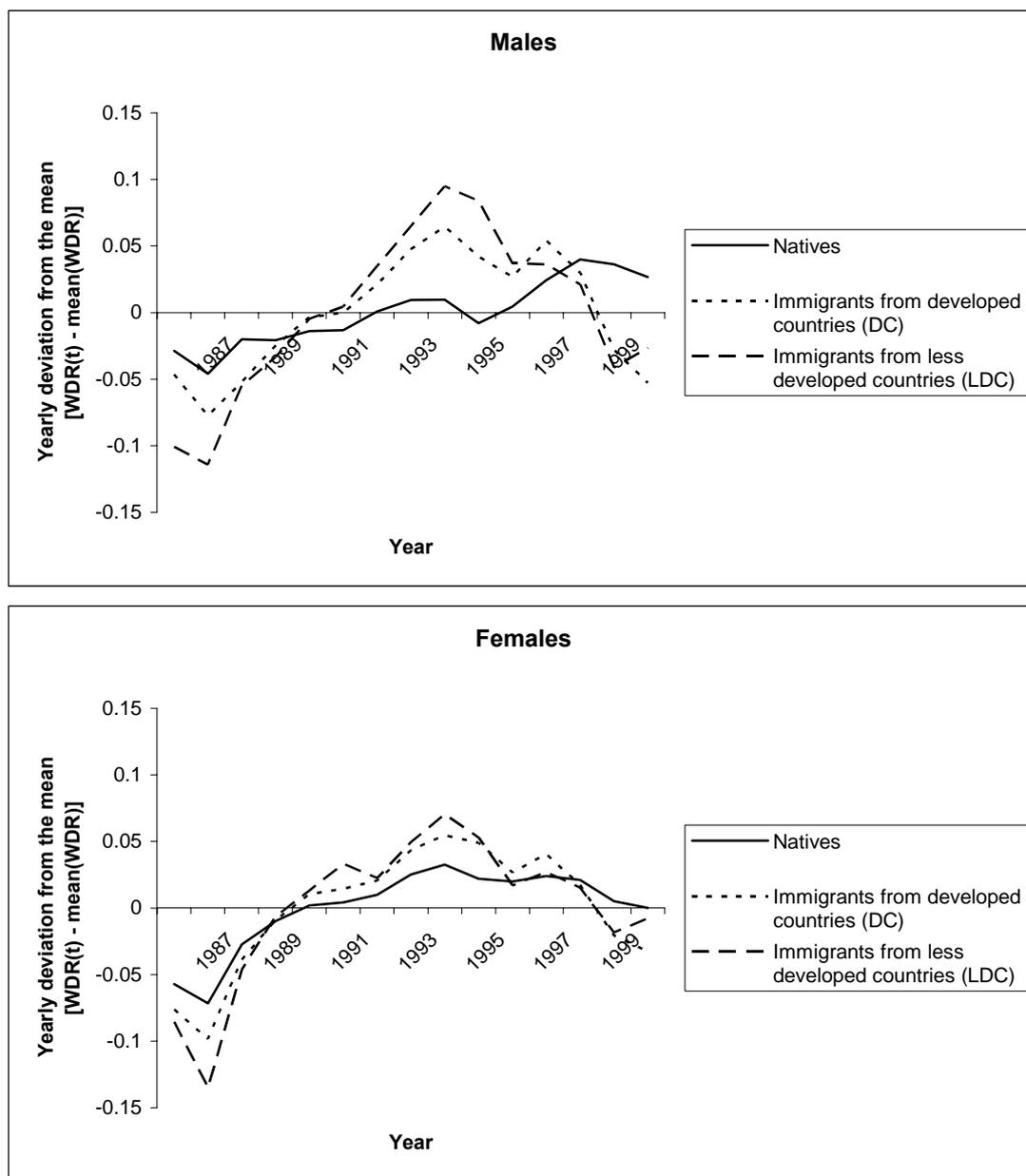
Note: Each year during 1985-1999, the predicted welfare dependency rate is calculated for standard persons aged 25 who do not live in mixed households and who are not single. Immigrants are a weighted average of the different countries of origin . The standard immigrants from DCs and LDCs have just immigrated. I all other respects, the standard persons have got the mean values of the explanatory variables as individual characteristics.

7   Conclusion

In line with results from Sweden, but in contrast to results from Germany and the US, we find that 1st generation immigrants assimilate out of welfare dependency in Denmark.

The descriptive results suggested that 1st generation immigrants, and especially immigrants from less developed countries, are overrepresented among the receivers of public income transfers when compared to natives. Furthermore, their overrepresentation has been increasing during the period 1984-1999. The descriptive results also indicated that a high age at immigration and a high unemployment rate at immigrants' arrival increase welfare dependency. The descriptive results are almost fully confirmed when estimating models for welfare dependency for natives and 1st generation immigrants aged 25-57 in the period 1985-1999.

Comparing natives and immigrants, a remarkable result is that living in a mixed household (i.e. the two adults in a household consist of one native and one immigrant) reduces welfare dependency for immigrants while it increases welfare dependency for natives. This suggests that immigrants who cohabit with a native may be able to utilize the native's social network to obtain employment and thereby reduce welfare dependency considerably. In general, the level of schooling reduces welfare dependency among immigrants from both developed countries and less developed countries. Actually, home-country schooling seems to be close to fully transferable to the Danish labour market which is in contrast to results from previous research from other countries on this topic.

Immigrants from less developed countries experience much higher welfare dependency than immigrants from developed countries. Welfare dependency among immigrants from less developed countries is also far more sensitive to variations in the current unemployment rate suggesting that immigrants from less developed countries have a more marginal labour force attachment than natives and immigrants from developed countries. However, despite a very high level of welfare dependency, immigrants from less developed countries assimilate out of welfare dependency to some extent, but stabilize after 25 years of assimilation at a relatively high level of welfare dependency. Due to these assimilation patterns along with the impact from the immigrants' age at immigration, it is concluded that immigrants who arrive at young ages are more likely to be a "profitable" investment for the Danish society. Furthermore, the welfare dependency of immigrants from less developed countries is more sensitive to business cycle variations than that of natives and immigrants from developed countries.

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Appendix A1. Public income transfers

Income replacing public income transfers:

Transfer	*Explanation*	*Characteristics*
Public pensions	Old-age pension, early retirement pension etc. Old-age pension is paid to individuals aged more than 65 years. Consists of 2 amounts. The base-payment (fixed amount paid to all who are entitled, i.e. above 65 years old) and a supplementary payment (means-tested).	Universal, partly fixed amount and partly means-tested, infinite duration
Pension paid to former civil servants	Special labour market related pension paid to individuals who are formerly employed in the public sector as a civil servant.	Entitlement requirements, fixed amount, infinite duration
Public welfare	Different kinds of public welfare.	Universal, means-tested, infinite duration
Unemployment insurance benefits (I)	Unemployment insurance benefits. Paid by the unemployment insurance organizations.	Entitlement requirements, fixed amount, finite duration
Unemployment insurance benefits (II)	Unemployment insurance benefits in case of illness etc. Paid by the local governments.	Entitlement requirements, fixed amount, finite duration
Education support (I)	Financial support to people who undertake education. Paid by the state.	Entitlement requirements, fixed amount, finite duration
Education support (II)	Financial support to unemployed people who undertake education. Paid by the unemployment insurance organizations.	Entitlement requirements, fixed amount, finite duration
Public self-employment support	Financial support to individuals who start out as self-employed.	Entitlement requirements, fixed amount, finite duration

Other public income transfers:

Transfer	*Explanation*	*Characteristics*
Child benefit	Quarterly subsidy paid to households with children. Dependent on the number of children.	Fixed amount, universal, conditional of children's age
Public housing support	Paid to individuals who live in rental housing.	Means-tested, infinite duration

Appendix A2. Further explanation and descriptive statistics for explanatory variables

		Females						*Males*					
		Natives		Immigrants from developed countries (DC)		Immigrants from less developed countries (LDC)		Natives		Immigrants from developed countries (DC)		Immigrants from less developed countries (LDC)	
Variable name	Explanation	Mean	Std.dev.	Mean	Std.dev.	Mean	Std.dev.	Mean	Std.dev.	Mean	Std.dev.	Mean	Std.dev.
D1986	=1 if year equals 1986 ; =0 otherwise	0.063	0.244	0.059	0.236	0.031	0.174	0.064	0.245	0.056	0.231	0.037	0.189
D1987	=1 if year equals 1987 ; =0 otherwise	0.064	0.245	0.059	0.236	0.035	0.184	0.064	0.245	0.058	0.233	0.043	0.204
D1988	=1 if year equals 1988 ; =0 otherwise	0.065	0.246	0.059	0.236	0.040	0.196	0.065	0.246	0.058	0.234	0.048	0.214
D1989	=1 if year equals 1989 ; =0 otherwise	0.065	0.247	0.060	0.238	0.045	0.207	0.065	0.247	0.059	0.236	0.052	0.223
D1990	=1 if year equals 1990 ; =0 otherwise	0.066	0.249	0.061	0.240	0.050	0.218	0.066	0.248	0.060	0.237	0.058	0.233
D1991	=1 if year equals 1991 ; =0 otherwise	0.067	0.250	0.062	0.241	0.056	0.230	0.067	0.249	0.061	0.239	0.062	0.242
D1992	=1 if year equals 1992 ; =0 otherwise	0.068	0.251	0.063	0.243	0.064	0.244	0.067	0.251	0.063	0.243	0.067	0.251
D1993	=1 if year equals 1993 ; =0 otherwise	0.068	0.252	0.064	0.245	0.071	0.256	0.068	0.251	0.065	0.246	0.073	0.260
D1994	=1 if year equals 1994 ; =0 otherwise	0.068	0.252	0.065	0.247	0.078	0.268	0.068	0.251	0.066	0.248	0.077	0.267
D1995	=1 if year equals 1995 ; =0 otherwise	0.068	0.252	0.067	0.250	0.084	0.278	0.068	0.252	0.068	0.252	0.082	0.274
D1996	=1 if year equals 1996 ; =0 otherwise	0.068	0.252	0.076	0.265	0.092	0.289	0.068	0.252	0.079	0.270	0.086	0.280
D1997	=1 if year equals 1997 ; =0 otherwise	0.068	0.253	0.080	0.271	0.100	0.300	0.069	0.253	0.083	0.276	0.090	0.286
D1998	=1 if year equals 1998 ; =0 otherwise	0.069	0.253	0.082	0.274	0.109	0.311	0.069	0.254	0.084	0.278	0.094	0.292
D1999	=1 if year equals 1999 ; =0 otherwise	0.069	0.253	0.083	0.276	0.118	0.323	0.069	0.253	0.085	0.279	0.099	0.299
Single	=1 if single ; =0 otherwise	0.247	0.432	0.271	0.444	0.185	0.388	0.295	0.456	0.309	0.462	0.322	0.467
No. of Kids	The number of children in the household	0.890	0.999	0.876	1.033	1.758	1.477	0.785	0.992	0.757	0.999	1.287	1.459
Mixed Househ.	=1 if the household is "mixed" =0 otherwise	0.018	0.133	0.513	0.500	0.190	0.392	0.016	0.126	0.473	0.499	0.154	0.361
Individual U	The individual's unemployment degree in the preceding year. Takes the values 0 - 10 where 0 indicates fully employed and 10 fully unemployed	0.869	2.160	1.096	2.495	1.856	3.120	0.664	1.894	1.088	2.493	2.126	3.284
Ongoing Educ.	=1 if currently undertaking education =0 otherwise	0.040	0.197	0.048	0.213	0.032	0.176	0.033	0.178	0.044	0.204	0.063	0.243
EC12	=1 if immigrant comes from EC12; =0 otherwise			0.313	0.464					0.459	0.498		
Ex-Yugoslavia	=1 if immigrant comes from Ex-Yugoslavia; =0 otherwise			0.118	0.323					0.139	0.346		
Other DC	=1 if immigrant comes from other developed countries; =0 otherwise			0.241	0.427					0.189	0.391		

	Refernce: Nordic countries												
Pakistan	=1 if immigrant comes from Pakistan; =0 otherwise					0.095	0.294					0.095	0.293
Vietnam	=1 if immigrant comes from Vietnam; =0 otherwise					0.056	0.231					0.052	0.223
Iran	=1 if immigrant comes from Iran; =0 otherwise					0.062	0.242					0.123	0.329
Iraq	=1 if immigrant comes from Iraq; =0 otherwise					0.029	0.168					0.057	0.232
No State	=1 if immigrant comes from No state; =0 otherwise					0.058	0.234					0.081	0.273
Other LDC	=1 if immigrant comes from other less developed countries; =0 otherwise Reference: Turkey					0.459	0.498					0.369	0.483
Cohort 1970	=1 if immigrant belongs to Cohort 1970; =0 otherwise		0.233	0.423	0.285	0.451			0.244	0.429	0.216	0.412
Cohort 1980	=1 if immigrant belongs to Cohort 1980; =0 otherwise		0.259	0.438	0.424	0.494			0.287	0.452	0.485	0.500
Educ Danish	The years of Danish schooling	11.426	3.265	4.453	6.330	1.225	3.746	11.992	3.456	4.318	6.510	2.177	4.838
Educ home	The years of home-country schooling (survey data)			3.929	6.097	3.236	5.313			3.547	6.001	2.962	5.337
No response	=1 if asked to participate in the survey concerning home-country schooling but chose not to respond =0 otherwise			0.224	0.417	0.427	0.495			0.264	0.441	0.378	0.485
Not asked	=1 if not asked to participate in the survey concerning home-country schooling =0 otherwise			0.115	0.319	0.128	0.334			0.146	0.353	0.177	0.382
U at entry	The national unemployment rate at immigration. Also referred to as U_0	4.856	3.023	5.775	3.651	7.828	2.952	4.874	3.071	6.143	3.646	7.332	3.120
Age at immig.	The immigrants' age at immigration			1.790	1.448	2.463	0.944			1.990	1.430	2.198	1.101
Age	Age	3.953	0.877					3.939	0.874				
Age30+	= (Age-30) if Age>30 ; = 0 otherwise	1.004	0.807					0.990	0.803				
Age35+	= (Age-35) if Age>35 ; = 0 otherwise	0.638	0.662					0.626	0.657				
Age40+	= (Age-40) if Age>40 ; = 0 otherwise	0.355	0.479					0.346	0.474				
Age45+	= (Age-45) if Age>45 ; = 0 otherwise	0.156	0.286					0.151	0.283				
YSM missing	=1 if YSM in not reported ; =0 otherwise			0.342	0.475	0.040	0.197			0.287	0.452	0.128	0.335
YSM	Years since migration			0.659	0.740	0.926	0.652			0.692	0.731	0.826	0.657
YSM5+	= (YSM-5) if YSM>5 ; = 0 otherwise			0.381	0.572	0.508	0.566			0.395	0.571	0.445	0.540
YSM10+	= (YSM-10) if YSM>10 ; = 0 otherwise			0.195	0.390	0.238	0.400			0.200	0.389	0.200	0.372
YSM15+	= (YSM-15) if YSM>15 ; = 0 otherwise			0.080	0.226	0.090	0.228			0.080	0.224	0.073	0.211

YSM20+	= (YSM-20) if YSM>20 ; = 0 otherwise			0.022	*0.100*	0.022	*0.094*			0.022	*0.097*	0.018	*0.088*
N		158777		144660		104183		165484		137597		143290	

Appendix A3.1. Estimation results from estimation of One-Limit Tobit Model.

Natives and immigrants aged 25-57.

Dependent variable: Amount of transfers received

	Females						Males					
	Natives		Immigrants from developed countries (DC)		Immigrants from less developed countries (LDC)		Natives		Immigrants from developed countries (DC)		Immigrants from less developed countries (LDC)	
	Coef.	Std.err.	Coef.	Std.err.	Coef.	Std.err.	Coef.	Std.err.	Coef.	Std.err.	Coef.	Std.err.
D1986	-3995.0 **	625.9	-4610.3 **	771.8	-12997.8 **	1393.6	-6682.8 **	885.7	-5518.0 **	1075.2	-6409.6 **	1191.4
D1987	7586.6 **	617.1	7555.6 **	762.8	11337.1 **	1366.3	-1043.3	885.6	219.5	1076.6	7978.5 **	1156.3
D1988	12244.9 **	617.6	14125.5 **	765.7	19944.3 **	1355.1	-142.7	890.2	3550.6 **	1082.4	9893.8 **	1144.1
D1989	14486.2 **	618.6	16496.4 **	769.4	23869.5 **	1359.2	2166.7 **	893.9	5797.2 **	1087.3	12893.7 **	1137.2
D1990	15265.3 **	621.2	17756.4 **	775.0	26108.7 **	1374.2	2023.3 **	900.0	7049.9 **	1098.2	12948.1 **	1137.3
D1991	16624.2 **	624.5	18592.0 **	785.2	22302.0 **	1404.4	7453.1 **	901.9	11713.9 **	1110.3	15360.1 **	1148.4
D1992	21594.6 **	626.1	23485.7 **	793.7	29565.8 **	1444.5	10622.3 **	905.8	17445.7 **	1121.2	19117.0 **	1165.6
D1993	24989.9 **	630.2	26160.3 **	806.1	34343.4 **	1495.1	12948.0 **	914.1	19478.9 **	1142.0	22192.2 **	1191.7
D1994	23407.9 **	637.5	28835.3 **	821.6	44911.3 **	1554.2	10781.4 **	931.9	19418.8 **	1172.1	31595.3 **	1227.6
D1995	22316.6 **	643.9	26466.5 **	840.2	35496.5 **	1621.6	9510.7 **	944.5	16967.0 **	1203.7	23236.4 **	1270.1
D1996	22595.4 **	651.6	28941.8 **	849.7	36146.1 **	1690.4	9975.8 **	958.6	22269.8 **	1218.4	24137.1 **	1316.9
D1997	21346.3 **	661.5	27211.1 **	871.7	33642.3 **	1762.5	9514.6 **	974.0	19243.1 **	1255.6	21159.2 **	1366.8
D1998	20131.8 **	672.8	21104.6 **	900.0	28159.3 **	1836.5	9106.3 **	995.6	10703.2 **	1305.6	13186.5 **	1420.2
D1999	18811.4 **	685.1	18154.9 **	932.1	27385.7 **	1908.6	4958.9 **	1023.8	5607.5 **	1362.0	14145.5 **	1472.4
Single	-7707.0 **	373.0	-19035.4 **	608.7	-43601.8 **	683.1	-30737.5 **	532.3	-33803.7 **	839.4	-59266.1 **	537.4
No. of Kids	14510.8 **	179.3	16284.9 **	200.2	16125.7 **	201.0	1939.2 **	266.6	5917.8 **	299.8	8852.3 **	177.1
Mixed Househ.	9452.3 **	1096.0	-10382.6 **	592.7	-57344.5 **	879.5	641.3	1832.9	-7761.6 **	880.4	-43133.6 **	747.9
Individual U	6339.3 **	60.0	5826.7 **	62.6	3880.8 **	69.7	7806.1 **	91.4	7092.1 **	82.9	4996.3 **	57.1
Ongoing Educ.	16814.8 **	664.5	12267.2 **	764.5	3952.7 **	1185.2	24306.4 **	1069.1	22133.7 **	1134.4	13208.0 **	794.0
EC12			-6267.7 **	609.1					-2090.6 **	1059.7		
Ex-Yugoslavia			59903.1 **	1035.4					70622.2 **	1432.9		
Other DC			5200.1 **	653.8					9026.8 **	1228.2		
Pakistan					-3259.8 **	1392.9					-20594.7 **	1383.1
Vietnam					9484.3 **	1955.9					1855.6	1694.7
Iran					35461.1 **	1737.1					21582.5 **	1488.1

	Model 1 coef	SE	Model 2 coef	SE	Model 3 coef	SE	Model 4 coef	SE	Model 5 coef	SE	Model 6 coef	SE
Iraq					52691.8 **	1745.1					36285.6 **	1564.7
No State					47947.1 **	1488.8					36396.9 **	1358.2
Other LDC					-25.7	1081.4					-9627.3 **	936.3
Cohort 1970			10460.3 **	1570.2	4141.7 *	2363.8			33762.0 **	2554.6	10036.0 **	2124.8
Cohort 1980			6341.2 **	965.3	-12128.6 **	1246.8			19841.7 **	1391.9	-4405.7 **	1152.7
Educ Danish	-1664.2 **	57.4	-2436.0 **	98.7	-3301.4 **	140.3	-3858.6 **	92.8	-5112.6 **	168.8	-4000.7 **	123.3
Educ home			-2164.9 **	103.7	-1241.7 **	124.3			-4178.9 **	170.8	-2288.2 **	126.9
No response			-24303.7 **	1413.8	-9387.9 **	1456.3			-46410.0 **	2274.5	-23672.5 **	1516.0
Not asked			-38199.9 **	1524.5	-17631.3 **	1695.7			-76339.0 **	2403.1	-36371.0 **	1636.7
U at entry	-158.3 **	72.1	49.2	164.9	200.3	221.1	-695.5 **	147.0	1442.8 **	268.4	1054.6 **	231.4
Age at immig.			77.7	433.9	-1560.2 **	468.7			966.5 *	585.2	1142.3 **	465.8
Age	-13917.9 **	1334.8					-19285.8 **	1877.2				
Age30+	-173.6	2097.0					-8355.4 **	2984.7				
Age35+	16869.4 **	1939.9					14220.5 **	2870.7				
Age40+	-10885.0 **	1869.9					2361.0	2840.2				
Age45+	16846.7 **	1471.6					32674.3 **	2201.3				
YSM missing			2819.7	2112.4	6187.8 **	2854.3			2208.1	3140.6	-18692.5 **	2630.0
YSM			2022.4	2032.5	38030.6 **	2260.7			-29972.9 **	2631.0	-16319.2 **	2090.2
YSM5+			-12121.1 **	2977.3	-49186.4 **	3109.6			9764.1 **	3859.5	-5143.7 *	2926.8
YSM10+			4825.6 *	2648.1	-4131.8	2804.0			2469.0	3513.8	-769.8	2649.1
YSM15+			-1753.2	2833.4	493.5	3251.3			3952.4	3877.1	392.0	3211.5
YSM20+			6972.2 **	3127.2	1583.8	3951.9			11876.2 **	4460.1	18731.7 **	3987.3
Constant	69258.9 **	3878.1	33577.2 **	2743.1	66144.4 **	3307.0	112408.5 **	5623.3	42281.0 **	4669.2	103705.6 **	3246.6
σ_u	38606.2	156.2	41043.1	163.6	40501.6	232.5	47713.9	217.3	49800.9	244.6	39202.3	208.0
σ_e	40109.4	85.2	44997.5	102.2	52367.4	127.0	53165.0	144.3	55574.3	157.2	54884.6	119.5
ρ	0.481	0.002	0.454	0.002	0.374	0.003	0.446	0.002	0.445	0.002	0.338	0.002
Log L	-1467289.1		-1362424.4		-1198876.5		-1033871.0		-973961.5		-1504281.2	
N	158777		144660		104183		165484		137597		143290	
Left-censored	39599		35204		7935		85440		62076		23728	

NOTE: ** indicates significance at a 5% level and * at a 10% level.

Appendix A3.2. Estimation results from estimation of Two-Limit Tobit.

Natives and immigrants aged 25-57.

Dependent variable: Welfare dependency rate rate based on welfare related benefits only (WDR3)

	Females						Males					
	Natives		Immigrants from developed countries (DC)		Immigrants from less developed countries (LDC)		Natives		Immigrants from developed countries (DC)		Immigrants from less developed countries (LDC)	
	Coef.	Std.err.	Coef.	Std.err.	Coef.	Std.err.	Coef.	Std.err.	Coef.	Std.err.	Coef.	Std.err.
D1986	-0.0214**	0.0084	0.0022	0.0101	0.0084	0.0102	-0.0222*	0.0124	0.0004	0.0136	0.0590**	0.0097
D1987	-0.0186**	0.0084	-0.0020	0.0101	0.0287**	0.0100	0.0015	0.0125	0.0109	0.0137	0.0943**	0.0094
D1988	-0.0086	0.0084	0.0077	0.0102	0.0636**	0.0099	-0.0019	0.0126	0.0487**	0.0136	0.0911**	0.0093
D1989	0.0016	0.0084	0.0218**	0.0102	0.0788**	0.0100	0.0326**	0.0124	0.0708**	0.0137	0.1119**	0.0092
D1990	0.0136	0.0083	0.0174*	0.0102	0.0877**	0.0102	0.0517**	0.0124	0.0748**	0.0139	0.1215**	0.0092
D1991	0.0218**	0.0084	0.0170	0.0104	0.0927**	0.0105	0.0742**	0.0124	0.0601**	0.0142	0.1233**	0.0094
D1992	0.0379**	0.0084	0.0249**	0.0105	0.1105**	0.0108	0.1251**	0.0123	0.0954**	0.0143	0.1676**	0.0095
D1993	0.0457**	0.0084	0.0179*	0.0108	0.1199**	0.0113	0.1314**	0.0124	0.1037**	0.0146	0.1949**	0.0097
D1994	0.0602**	0.0085	0.0392**	0.0110	0.1699**	0.0118	0.1486**	0.0125	0.1160**	0.0150	0.2611**	0.0100
D1995	0.0565**	0.0086	0.0131	0.0113	0.1640**	0.0124	0.1468**	0.0127	0.0928**	0.0155	0.2563**	0.0104
D1996	0.0469**	0.0088	0.0370**	0.0114	0.1711**	0.0131	0.1566**	0.0129	0.1318**	0.0157	0.2677**	0.0108
D1997	0.0504**	0.0089	0.0148	0.0118	0.1802**	0.0137	0.1863**	0.0131	0.1235**	0.0162	0.2806**	0.0112
D1998	0.0123	0.0092	-0.0176	0.0122	0.1591**	0.0143	0.1286**	0.0136	0.0645**	0.0169	0.2424**	0.0116
D1999	0.0165*	0.0093	-0.0238*	0.0127	0.1794**	0.0149	0.1505**	0.0138	0.0725**	0.0177	0.2865**	0.0120
Single	0.3400**	0.0043	0.2539**	0.0069	0.1568**	0.0045	0.1819**	0.0064	0.1368**	0.0087	-0.0466**	0.0038
No. of Kids	0.0234**	0.0024	0.0208**	0.0026	0.0275**	0.0013	-0.0377**	0.0037	0.0042	0.0034	0.0248**	0.0013
Mixed Househ.	0.2198**	0.0125	-0.1742**	0.0075	-0.3759**	0.0069	0.2326**	0.0221	-0.1427**	0.0098	-0.3040**	0.0057
Individual U	0.0099**	0.0006	0.0068**	0.0007	-0.0040**	0.0005	0.0273**	0.0010	0.0175**	0.0009	-0.0001	0.0004
Ongoing Educ.	0.1189**	0.0071	0.0381**	0.0089	-0.0505**	0.0076	0.1846**	0.0119	0.0992**	0.0118	-0.0310**	0.0056
EC12			-0.0523**	0.0085					-0.1146**	0.0116		
Ex-Yugoslavia			0.5619**	0.0105					0.4610**	0.0141		

			*									
Other DC			0.1025 **	0.0094					0.1511 **	0.0139		
Pakistan					0.0083	0.0097					0.0116	0.0102
Vietnam					0.3410 **	0.0131					0.2938 **	0.0121
Iran					0.4891 **	0.0139					0.5330 **	0.0118
Iraq					0.5524 **	0.0127					0.5309 **	0.0110
No State					0.5754 **	0.0093					0.5336 **	0.0094
Other LDC					0.2042 **	0.0079					0.1829 **	0.0077
Cohort 1970			-0.1019 **	0.0211	0.0061	0.0203			-0.0486 *	0.0277	0.0589 **	0.0170
Cohort 1980			-0.1067 **	0.0128	-0.0214 **	0.0092			-0.0595 **	0.0162	0.0488 **	0.0090
Educ Danish	-0.0377 **	0.0008	-0.0354 **	0.0016	-0.0278 **	0.0009	-0.0542 **	0.0011	-0.0440 **	0.0025	-0.0269 **	0.0011
Educ home			-0.0324 **	0.0015	-0.0143 **	0.0007			-0.0434 **	0.0026	-0.0181 **	0.0010
No response			-0.3076 **	0.0184	-0.0629 **	0.0083			-0.4221 **	0.0322	-0.1811 **	0.0131
Not asked			-0.2675 **	0.0205	-0.0822 **	0.0103			-0.3430 **	0.0345	-0.1215 **	0.0138
U at entry	-0.0033 **	0.0011	0.0136 **	0.0021	0.0124 **	0.0016	-0.0142 **	0.0018	0.0266 **	0.0029	0.0093 **	0.0018
Age at immig.			0.0010	0.0046	0.0089 **	0.0036			-0.0083	0.0058	0.0159 **	0.0037
Age	-0.0705 **	0.0161					-0.1259 **	0.0229				
Age30+	0.0120	0.0263					0.0489	0.0377				
Age35+	-0.0228	0.0260					-0.0962 **	0.0380				
Age40+	-0.0174	0.0263					0.0070	0.0386				
Age45+	0.0382 *	0.0212					-0.0114	0.0313				
YSM missing			-0.4968 **	0.0254	-0.3359 **	0.0206			-0.6583 **	0.0313	-0.6293 **	0.0199
YSM			-0.5414 **	0.0219	-0.4091 **	0.0148			-0.8071 **	0.0275	-1.0082 **	0.0149
YSM5+			0.3838 **	0.0327	0.0740 **	0.0195			0.5891 **	0.0410	0.5895 **	0.0205
YSM10+			0.1205 **	0.0324	0.3288 **	0.0190			0.2244 **	0.0412	0.3502 **	0.0198
YSM15+			-0.0102	0.0369	0.1162 **	0.0230			-0.0641	0.0477	0.1138 **	0.0250
YSM20+			0.1255 **	0.0414	-0.0945 **	0.0280			0.1099 *	0.0564	-0.0063	0.0311

Constant	0.0374	*0.0470*	0.1611 **	*0.0340*	0.0171	*0.0228*	0.2812 **	*0.0687*	0.1737 **	*0.0472*	0.3303 **	*0.0256*
σ_u	0.3195	*0.0025*	0.4229	*0.0025*	0.2897	*0.0016*	0.4377	*0.0036*	0.5122	*0.0033*	0.3298	*0.0016*
σ_e	0.2814	*0.0015*	0.3618	*0.0016*	0.2880	*0.0010*	0.4068	*0.0026*	0.4616	*0.0023*	0.3471	*0.0010*
ρ	0.5631	*0.0038*	0.5773	*0.0029*	0.5028	*0.0028*	0.5365	*0.0038*	0.5519	*0.0031*	0.4745	*0.0024*
Log L	-26916.0		-47524.1		-40866.2		-35241.5		-55188.5		-73913.2	
N	158777		144660		104183		165484		137597		143290	
Left-censored	137883		108801		49676		146962		104516		66712	
Right-censored	692		3182		2332		1891		5439		7366	

NOTE: ** indicates significance at a 5% level and * at a 10% level.

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