Very preliminary version !

Immigrants and Income Mobility in Denmark
- is self-employment just means to an end ?[*]

By

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28. februar 2002

Abstract: *This paper investigates the income mobility for immigrants in Denmark, and draws special attention to self-employment as a possible mean to escape poverty. Based on a choosen income meausre and a defined poverty-line, spells of poverty are constructed, and events associated with the beginning and ending of these spells are investigated. The very preliminary results show that one important event is a change in labour market status. This result is confirmed when a discrete duration model for poverty-spells is estimted. In general it is found that wage-employment improves the chances of escaping poverty most, but also that self-employment is a fair second best option. The results are very preliminary however.*

JEL classification: C33, C41, I32, J23

Keywords: self-employment, immigrants, discrete duration model, poverty.

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* The project has been supported financially by the Danish Research Agency (the FREJA grant). I appreciate comments from colleagues and financial support from the Danish Centre for Registre Research.

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1 Introduction

When individuals choose to migrate to a foreign country their choice may be based on several considerations. Some immigrants migrate for economic or employment reasons, for instance lack of employment possibilities in their home country, while yet other immigrants are escaping political instability or maybe threats to their lifes. In many cases their financial means are low when immigrating to a foreign country and depending on the host-country, and the level of social benefits in that country, the welfare dependence is generally high for the typical immgrant in the early phase of their new life in the host country. Later on the level of welfare dependence is expected to fall as the immigrant become more integrated into the society and most importantly integrated into the labour market in the host country.

However in many countries the integration seems, to some extent, to be inadequate and Denmark is no exception in this case. Prior research show that immigrants are poorely integrated into the labour market and this is especially the case for specific immigrant groups, see e.g. Husted et. al. (2001). For some immigrant groups the labour market participation rate is as low as 43% i 1997, see Poulsen og Lange (1999), and the welfare dependence is still high after many years in the host country. In that case alternative types of employment become interesting for the individual immigrant. One such type of employment could be *self-employment*. Prior research has shown that immigrants in Denmark choose self-employment to a high degree, and that some immigrants may perceive self-employment as one, or maybe the only, way to get employment and avoid welfare dependence, see Blume et al. (2001).

In general one could say that the road to welfare independence goes through an upward income mobility, and income mobility is therefore the main focus of this paper. In particular the income mobility of self-employed immigrants will be analysed.

Traditionally analysis of income mobility focus on wage-employees, and do not direct their attention to the self-employed, see e.g. Bane and Ellwood (1986) or Stevens (1999). In fact analysis of income mobility in many cases leave out self-employed individuals and there are indeed several reasons for doing so. The first reason is that their real income is hard to measure both due tax-evasion but also due to the fact that some part of their private consumtion is obtained through, or within, the self-employed business. The former is clearly illegal while the latter may not be perceived as illegal, but definitely confuses the concept of income. This

problem may be even higher when register based data are used[1]. The second reason for leaving out self-employed is that the the utility function may differ in some aspects between self-employed and wage-employed. A large element of freedom, or maybe a kind of self-employment tradition, may trade off achievements in income as long as the first aspects are satisfied. If upward income mobility is not the primary goal for the selfemployed, the behavioural conclusions based on an analysis of income mobility on the individual level will not make much sense. This is another reason for leaving out self-employed individuals in an analysis of income mobility, and there may be several others when the aim is on explaining individual behaviour.

However, if the point of the analysis is to argue, not on individual behaviour, but instead to investigate the macro- or policy implications of income mobility from a welfare dependence point of view, it certainly makes sense *not* to leave out self-employed individuals. In the danish case where some immigrant groups choose self-employment to an extremely high extent it will make sense to even investigate self-employed as a group alone.

What could be the reasons for immigrants to choose self-employment. One reason could be that immigrants use self-employment as a *stepping-stone* into wage employment (Light, 1984). There has also been found an effect from a self-employment tradition in the country of origin (Yuengert, 1995; Hammerstedt, 1999; Hout and Rosen, 1999). Borjas (1986) suggests that *ethnic enclaves*, as defined by a high fraction of immigrants from a certain region are an important explanation for self-employment among immigrants. The argument is that it is easier to attract customers (see also Borjas and Bronars, 1989) and employees in an area with inhabitants of similar ethnic origin. Evidence is mixed, since Yuengert (1995), Bager and Rezaei (2001) and Hammerstedt (1999) find no effect of enclaves. Aldrich and Waldinger (1990) explain the mixed evidence by competition within each enclave. Finally immigrants may be excluded from the ordinary labour market due to discrimination.

Whatever the reason behind choosing self-employment may be, it is of great interest to see whether beeing self-employed helps immigrants to achieve an upward income mobility in the long run, or in particular to investigate whether self-employment is used as a mean to escape poverty. It is also of great interest to see whether this possible use of self-employment is different

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1 You could argue that self-employed individuals would be more likely to reveal their "true" income in a survey, where registerbased income data, in the danish case, are reported through the tax authorities.

for different immigrant groups. Based on these considerations I intend to investigate the following hypothesis:

> **Hypothesis:** *Immigrants use self-employment as a mean to achieve an upward income mobility and thereby escape poverty. Some immigrant groups do this to a higher extent than others due to e.g. tradition.*

Based on this hypothesis i will conduct an anaysis of immigrants income mobility in Denmark. The rest of the paper is as follows. In section 2, I will give a short overview of part of the litterature within the fields of poverty and income mobility, and based on this I describe my empirical approach. In section 3, I describe my data and also the most relevant descriptives. In section 4 , I go through the duration model that I estimate and which results are presented in section 5. Finally section 6 concludes.

2 Prior reserach and empirical approach

Income equality and economic redistribution is an important aspect of the organizing of every modern society. DORS (2001) describes several economic, ethical, and political arguments behind economic redistribution through taxes and transfers to avoid people staying in poverty for long periods. One economic reason, is that credit markets are imperfect, which prevents people from borrowing money, and therefore reduce the overall production level in the society, see e.g. Galor and Zeira (1993). Antoher reason is that severe poverty can, to a higher extent, induce poor people to commit crime and in the long run cause social instability. Alesina and Perotti (1996) show that countries with a high degree of social instability also has a low level of investment. Besides these economic argument there are also a pure ethical arguments like, for instance, that a socity must insure the (economic) wellbeing of it's citizens. Therefore, income distribution and also income mobility in a given society, is always of great importance and should always be subject for thourough analysis. I will in the following give a short insight into a part of the litterature in the area of income mobility.

Atkinson 1997

In his article, Atkinson talks about the revival of the income dstribution. He argues that the inequality has been rising in UK and the US since the 70'ies. He divides income into income from work, income from capital and public transfers. Each of these elements share of the total income has changed in the periode from 1973-1993. For instance the share of income from work has fallen from 83% to 73%, and at the same time, families with no labour income at all, has alsoo been rising. The latter group in an interesting group since the gini-coefficient for this group *without* any labour income is of the same magnitude as the gini-coefficient for the group *with* labour income. Therefore there are also a great deal of inequality within the group with no labour income. The main message from Atkinson (1997) is that the rise in economic inequality has again made the analysis of income distribution, and income mobility and important area for research.

Jenkins 1999

In his article Jenkins argues for the importance of the longitudinal aspect in the analysis of income distribution which makes analysis of income mobility possible. Even though the share of people below some predefined poverty-line is constant, the people belonging to each group may not be the same year by year. This means that many transitions between poverty and non-poverty takes place from year t_j to year t_{j+1} . Cross-sectional analysis may therefor not reveal the real insight, becuase people are at different stages of their life-cycle or may just below the poverty-line in year t_j and not in year t_{-j}. This aspect may have several policy implications. He also argues that it is important to compare income to needs (or needs-adjusted income) and then focus on which income events and/or demographic events which causes transitions between poverty and non-poverty. Especially he finds that 'secondary' labour earnings are important[2]

Bane and Ellwood 1986

This paper is considered to be one of the early important papers in the analysis of income mobility. They point to the importance of a proper defintion of an observational unit. They use family/household as the observational unit and takes proper care of the changes in the composition of the observational unit, or in other words, the household. Based of different considerations they model spells of poverty in the period from 1970-1982, where they report starting and ending

[2] Labour income from non-head members of the household

events for these spells. They define income in terms of source, and based on household composition they calculate a needs-ratio. The starting and ending events are then defined as a change in the household composition, a change in the needs-ratio and lastly a change in income from the different income sources. They find that the most important beginning event is a decline the household head's earnings, but in general they find that a change in the earnings of any household member accounts for half of all starting events. A change in family composition account for the beginning of nearly half the spells. With respect to ending events, a change in the household head's earnings are again the single most important factor. But again the earnings of other family member are important. One of the main deficiencies in their analysis is that the aspect of multiple spells is not considered, and also unobserved heterogeneity is not taken into account.

Ann Huff Stevens 1994

This paper takes the aspect of multiple spells into account, and extends the analysis of Bane and Ellwood (1986) to cover the period from 1970-1987. She finds a negative trend in exit probabilities over the period from 1970-1987. When she considers multiple spells she finds that approximately half of the subsequent non-poverty spells ends within 5 years. The lenght of the subsequent non-poverty spell is negatively correlated with the preceding poverty spell.

Ann Huff Stevens 1999

In this paper a thorough analysis of poverty spells is presented and the aim is to analyse the persistence of poverty. The models estimated takes multiple spells and unobserved heterogeneity into account. She model spells for the period 1973-1988, but use information going back to 1969. The main contribution from this paper is that taking multiple spells and unobserved heterogeneity into account greatens the persistence of poverty.

Leeuwen and Pannekoek 1999

In their paper they use, to a large degree, the same econometric method as in Stevens (1999). However their main focus is slightly different, since they concentrate on the relationship between labour market status and poverty. The analysis is performed on Dutch data in th eperiod from 1989-1996. They define poverty in an absolute sense, and not as a relative measure. Individuals are poor if they stay below this absolute poverty-line for more than 2 years. They use

households as the observational unit and investigate changes in labour market status of each household member and also the change in household composition. Income is made equivalent and therefore comparable across households. The equivalence is based on household composition. Based on these definitions they construct poverty-spells and for each spell the investigate mutually exclusive starting and ending events. Among other things, they find that a change in the household composition is the most important ending event followed by a change in the household composition of any household member. With respect to ending events, they find that when a household head is finding a job this is an important ending event. In their analysis of exit probabilities they find that couples without children and couples with adult children only, has a higher probability of escaping poverty. They also find that the employment staus of the household head is of great importance. When other household members finds a job, this also increases the exit probability from poverty.

There are several lessons to be learned from this short overview into a part of the litterature on income mobility. First it is clear that the definition of the exact poverty-line is very important and are depending on the concentration of individuals in the lower end of the income distribution. It is also important whether the poverty-line is absolute or relative. However a relative poverty-line is the most preferred since it incorporates the characteristics of the income distribution. Second the choice of observational unit, either the individual or the household, is also of great importance, since the latter makes it possible to take the intertemporal composition of the household into account in the right manner. Using the household makes it also possible to define the "economic needs" of the observational unit and calculate equivalent incomes that are comparable across the observational units[3]. For that reason treating the household as the observational unit is preferred. However the choice of equivalence scale used when calculating the equivalent incomes is also important. It's therefore necessary to analyse how sensitive the income distribution is towards different scales of equivalence used to calculate the equivalent incomes. Third, the spell-approach seems convenient, and also to be well-accepted as a appropriate way to study poverty and income mobility. This approach also fascilitates a simple study of starting an ending events. However when using the spell-approach it is important to use the extra information that multiple spells provide, and also to control for unobserved heterogeneity.

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[3] Household with a positive number of children needs, og course, a higher income than households without children to buy the daily needs of the household (goods mainly). Based on this it makes sense to consider the icome to needs ratio, and therefor calculate equivalent incomes. This will be explaine further below..

Based on these lesson to be learned, my empirical approach will be to construct an income measure appropriate for this type of analysis. With respect to appropriatedness this corresponds to which observational unit to use, and to what extent the income shall be comparable across observational units. Beside that, many considerations has to be taken into account when dealing with income from self-employed individuals. When I have the appropriate income measure I will construct a relative poverty-line where I take different definitions, and thereby different poverty-lines into account. Based on these different poverty-lines I will perform a sensitivity analysis of how sensitive the income distribution is with respect to the choice of poverty-line. When the right poverty-line is choosen I will give a thourough description of how widespread poverty is among immigrants in Denmark, and how it has changed over the period.

Based on income and poverty-line I will construct spells of poverty for each household. Based on these spells I will describe different events connected to the beginning and ending of each spell. These events are for instance a change in the compostion of the household (may change both income and needs), a change in the labour market status of any household member (change income only) and lastly which source of income (change income only), causes the beginning or ending of the particular poverty spell. Finally I will perform a duration analysis of poverty spells and non-poverty spells, which will be analysed simultaneously. In the duration analysis I will take multiple spells and unobserved heterogeneity into account, and allow the unobserved heterogeneity to be correlated across different spells.

In the next section I will give a description of the data I use. In particular I will describe the different income measures and observational units on which I will build my analysis. I will also provide descriptive results concerning poverty among immigrants in Denmark.

3 Data description and descriptive statistics

The empirical study is based on longitudinal data sets from Danish administrative registers. One data set contains information on all immigrants and second generation immigrants in Denmark (about 300,000 in 1997) aged 15 and above[4] in the period 1984-1997. My sample is restricted in several ways. First I, in my analysis so far, use data from 1984-1993 only. Second

[4] For a further description of immigrants in Denmark and the applied data set see e.g. Husted et. al (2001).

I focus on males aged 18-60 only, and third I only include immigrants who are in the sample for the complete sample period from 1984-1993. These are serious restrictions, but they will all be dismissed in the near future. Further I, so far, do not treat the household as the observational unit, but instead I treat male individuals as the observational unit. I will in the near future include women and then connect men, women and children into households. To obtain data on all important variables, I use annual observations.

With respect to the immigrants country of origin, these countries are aggregated into the following groups: Nordic, EC-12[5], Ex-Yugoslavia, other developed countries (DCs), Turkey, Pakistan, Vietnam, Iran, no citizenship (Palestine) and other less developed countries (LDCs).

The labor market status, which is important when analyzing self-employment as a mean to escape poverty, is divided into three different states[6]: self-employment[7], (SE), wage employment[8], (WE), and finally non-employment, (NE).

With respect to income I, so far, use gross-income. This income measure includes income from labour (also self-employment), income from capital and also social transfers. This income measure is, however, not sufficient since it does not say anything on take disposable income. I will in the near future extend my income measure to take disposable income into account. All income variables are deflated with the consumer price index. Since all my data are registerbased, income from self-employment is based on the reported income from the tax register It may therefore be underestimated due to tax-avoidance. In fact, tax evasion could be one of the motivations for entry into self-employment since self-employment gives an option for under-reporting personal income. The consequences of this that the true exit-rate from poverty may be underestimated. I will take these considerations into account when rapporting my results.

Since I so far do not include women and children, I in fact treat every man as "single". However I make incomes for every "single" male equivalent by taking account of the number of children aged 17 and younger. The scale of equivalence used is suggested by DORS (2001).

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5 EC-12 contains the12 EU members prior to the expansion in 1997.

6 Since the variable labor market status is a yearly observation it refers to the main labor market status in the current year, and consequently short periods with another labor market status are not registered.

7 A person is defined as self-employed if self-employment is the dominating employment status during the year.

8 Incl. Part-time employment, which is a small number.

In practice I divide every income by (number of adults + (0,6*number of kids))^{0,8}. In the near future I will apply the general scale of equivalence, recommende by OECD, see OECD (1998). In my case the number of adults is 1, since I only analyse males. So far I have not performed any analysis of the sensitivity towards different scales of equivalence.

I define the poverty-line to be half the median income. The main reason for this choice is, that this poverty-line is commonly used for non-US data. Based on this definition, the fraction of immigrants below the poverty-line is described in table 1, in the appendix. As it is clear from table 1, the fraction below the poverty-line (group 1) to a great extent follows the business cycle, which peaked in 1986 (with a low fraction of people below the poverty-line), and vice-versa when the business cycle reached the bottom in 1993. However the fraction below the poverty-line doesn't show much variation over the period in general. The same stable pattern is not found when the table is divided by country of origin, which is done in table 2 in the appendix. From table 2 it is clear that the fraction below the poverty-line has doubled for immigrants from the former Yugoslavia and Pakistan, and has even more than doubled for immigrants from Turkey. However immigrants from Turkey are the group of immigrants from less developed countries with the smallest fraction below the poverty-line, despite the sharp increase. For immigrants from Vietnam and Iran, the fraction below the poverty-line has decreased dramatically, but are still in 1993 among the highest. This may be explained by the fact that these immigrant groups were refugees and arrived in the late 1970'es and the early 1980'es, and has therefore not been in Denmark for that long when my sample period starts in 1984. Since I, so far, require immigrants to be in the sample for the complete period from 1984-1993, this may explain the very large fraction of people below the poverty-line in the beginning of my sample period. However one interesting conclusion from table 2 is, that while the income situation improves for immigrants from Vietnam and Iran, the situation worsens for immigrants from Turkey, Pakistan and former Yugoslavia.

That the fraction of people below the poverty-line is almost constant from 1984-1993, does not mean that it is the same people who stays poor from year to year, even though there may be some persistence in poverty. The number of transitions between poverty and non-poverty from year to year is described in table 3 in the appendix. From table 3 it is clear that approxiamately 2.5 - 4.2% make a transition to above the poverty-line each year, while between 2.6 - 3.7% makes a transition to below the poverty-line each year. From year to year approximately 82%

stay above the poverty-line while approximately 10% stay below the poverty-line. The latter reveals that despite the relatively high number of transitions, poverty may be persistent to some extent.

Another simple way of looking at the dynamics of poverty, is to see how many years in total each individual has spent below the poverty-line during the sample period. This is described in table 4 in the appendix. From table 4, it is seen that 67% has not been below the poverty-line at all during the sample period, while more than 12% has been below the poverty-line in 5 or more of the 10 years sampling period. The table once again reflects the differences between the different immigrant groups, but again the explanation given above concerning immigrants from Vietnam and Iran applies. In table 5 and 6 in the appendix, the sample is divided into those who has been self-employed for a positive number of years (table 5), and those who has never been self-employed (table 6). I have done this to see whether there are differences in years spent below the poverty-line. As it is clear from table 5 and 6, immigrants who are, or have been, self-employed for a positive number of years has spent more years below the poverty-line, than people who has never been self-employed. However this says only little about self-employment and income mobility, since people who start out as self-employed in general experience low income the first years. To reach a more firm conclusion it is necessary to go into more detail with the analysis. To do this construction of spells of poverty is required.

Based on the above definitions I construct spells of time spent below the poverty-line. Spells are generated from 1988 to 1993, but using information back to 1984. By modelling the spells in this fashion, and with the specification of the duration models as described below, I avoid problems with left-censored observations. In the near future I will extend my analysis to involve spells above the poverty-line. I will then analyse the different types of spells simultaneously.

To each poverty-spell I define a set of starting and ending events. These event are at this point not mutually exclusive like in, for instance, Bane and Ellwood (1986). In my case the events I consider is a change in the number of children, or more precisely whether a new kid is born or if a child turns 18 and therefore becomes an adult. I also consider a change in the labour market status and finally I also consider a change in the marrital status. In the following I wil give a short description of these starting and ending events for the poverty-spells.

Starting Events

In table 7 to 9 in the appendix, I list different starting events associated with the poverty-spells. From table 7 it is seen that in 3% of the cases where a poverty-spell begins, a new child is born. There are som differences between the different immigrants groups, since it is the case for 5% of the poverty-spells for immigarnts from Pakistan and Vietnam. This is probably caused by the fact that these immigrant groups in general experience more poverty as explained above. In table 8, I focus on a change in the labour market status. From this table it is clear that the beginning of a poverty spell, in many cases, is associated with a transition from wage-employment (WE) to non-employment (NE), but also that staying in non-employment initiates many poverty-spells. From table 9 it is seen that in 2% of the beginnings of a poverty-spell this is associated with a divorce. In general a change in the marrital statusit does not seem to have much of an impact on the beginning of poverty-spells[9].

Ending Events

With respect to the ending of poverty-spells and the associated events, they are described in table 10-12 in the appendix. From table 10 it is seen that in 2% of the endings of a poverty-spell, this is associated with a child becoming an adult (turning 18 years). For immigrants from Irak it is almost 6%, but there are only few observations there however. More interesting is table 11 where a change in the labour market status is considered. Here the most important event is a transition from non-employment (NE) to wage-employment (WE). But also staying in wage-employment and self-employment (SE) is commonly associated with an ending of poverty-spell. Finally in table 12, marrital status doesn't seem to have much of an impact on ending a poverty-spell.

Beside these variables concerning starting and ending events I include, in the following ecometric analysis of poverty-spells, age of the immigrant, years since migration, education attained in Denmark in years, and whether an ongoing education just ended. In the next section I desribe my econometric method.

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9 I expect this result to change markedly when I in the near future use households instead of individuals as the observational unit.

4 The duration model

The description of the duration is based on my intention in the near future to model both poverty-spells and non-poverty-spells simultaneously and also to include the aspect of multiple spells. This will, however, not have direct influences on the description of the duration model.

One way to analyse poverty is to estiate binary choice models between poverty and non-poverty. Under certain conditions, there is a direct link between binary choice models and discrete-time duration models shown by e.g. Kiefer (1988). Sueyoshi (1995) elaborates further on this issue noting that the pooled logit or probit models traditionally have been viewed as naive alternatives to the discrete-time proportional hazards model. Sueyoshi (1995) suggests an intermediary between the two in terms of a simple generalization of logit and probit models as derived from a class of continuous-time duration models. A sequence of logits can be derived from continuous-time duration models where interval hazards are log-logistic. However, not even when the survivors are identical across intervals, the overall hazard rate is log-logistic. The sequence of logits is identical to the proportional hazards model when the conditional interval survival rates are close to unity, i.e. the length of the intervals is relatively small or the number of 'failures' is small, see Ryu (1994). In an empirical analysis Sueyoshi (1995) finds that, in contrast to the probit model, the outcome of the logit model is for all practical purposes similar to that of the proportional hazards model. Given the similarity of the results, the main advantage of the logit model over the proportional hazards discrete-choice model is the ease of computation and the well-documented panel data versions of the model.

Let X_{ij} denote the vector of explanatory variables for individual in interval $j=1,...J$. Let β denotes the effect of these variables on the probability to leave the state, and γ_j, the duration dependence parameters to be estimated. The probability of a failure in the j'th time interval is given by

$$\Pr\left(t_{j-1} \le T_i < t_j \mid X_{ij}, \beta\right) = F\left(\gamma_j + X_{ij}\beta\right) \cdot \prod_{k=1}^{j-1} \left[1 - F\left(\gamma_k + X_{ik}\beta\right)\right] \qquad (1)$$

where $F(\gamma_j + X_{ij}\beta)$ is the logistic hazard and distribution function denoting the probability that individual i leaves the state in interval j given that the individual has been in the state in the preceding $j-1$ time intervals. Equation (1) is the likelihood contribution for individual n: the

probability to stay in the relevant state from interval *1* through *j-1* (the survivor) times the probability to leave the state in interval j conditional on survival from interval *1* through *j-1* (the hazard). Let the spell be completed if $c_{ij}=1$, and right-censored otherwise:[10]

$$\ell_i\left(\beta,\underline{\gamma}\right) = c_{ij} \ln F\left(\gamma_j + X_{ij}\beta\right) + \sum_{k=1}^{j-1} \ln\left[1 - F\left(\gamma_k + X_{ik}\beta\right)\right] \tag{2}$$

Rewriting the expression

$$\ell_i\left(\beta,\underline{\gamma}\right) = c_{ij} \ln\left[\frac{\exp\left(\gamma_j + X_{ij}\beta\right)}{1+\exp\left(\gamma_j + X_{ij}\beta\right)}\right] + \sum_{k=1}^{j-1} \ln\left[\frac{1}{1+\exp\left(\gamma_k + X_{ik}\beta\right)}\right] \tag{3}$$

Equation (2) and (3) valid, when only one risk is considered. The durations not completed at the end of the sample period are treated as right censored. I further make an extension where I allow for dependence between the two states by inclusion of discrete random effects, following Heckmann and Singer (1984).

To sum up, I use this type of model for three reasons. Firstly, my data are discrete by nature since both the dependent variable and the explanatory variables are yearly observations. Secondly, a traditional proportional hazard model is, in a sense, rather restrictive since it predicts a shape of the baseline hazard which is independent of the level of the explanatory variables. Lastly, the models used are fairly easy to compute and the properties of the models are well-known. Furthermore it automatically includes time-varying varibles.

I estimate three discrete-time duration models: i) for the waiting time in poverty until exit to non-poverty, ii) for the waiting time in non-poverty until exit to poverty. Hence, I describe the entry into poverty and the exit from poverty by use of three discrete-time duration models. The models are estimated simultaneously which allows the unobserved heterogeneity to be correlated across states.

In case of right censoring, only the survivor contributes to the likelihood function, thus this issue is taken care of. Attrition may be present since individuals (especially immigrants) may leave the sample due to migration or death, this issue is treated like right censoring, and hence

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[10] By construction of the model left-censoring does not constitute any problem.

bias due to sample selection in return migration may exist. I take account of left censoring by using observations for the period 1984-1993 to construct duration data, but using only observations for the period 1988-1997 for the estimations. Duration dependence is measured as a set of five indicator variables equal to one when elapsed duration equals 1, 2, 3, 4 and >4 years. In the next section I describe results from the very preliminary estimation of the duration model.

5 Results

In this section I will go through the results from the first and very preliminary estimation of the duration model presented above. The estimation results are presented in table 13 in the appendix. The model estimated, so far, is for poverty-spells only, and does not take multiple spells into account, but does, however, correct for unobserved heterogeneity.

In general it is clear from table 13, that there is a negative duration dependence. This means that the longer an immigrant stays in poverty, the less likely he is to escape. Immigrants from Pakistan and Vietnam both has a higher probability of escaping poverty, than the other immigrants groups. This confirms what was indicated by table 2, that these two immigrant groups has improved, and in general are doing good with respect to escaping poverty by an upward income mobility in the period from 1988-1993. The opposite is the case for immigrants from the former Yugoslavia. The rest of the indicators for country of origin are insignificant.

In general older people has a smaller probability of escaping poverty, while years of education attained in Denmark works in the opposite direction. The more years of education the higher the chances of escaping poverty. Kids turning 18 years, and becoming adult, does not improve the chance of escaping poverty, but does not worsen them either. With respect to marrital status only a newly divorce seems to play a role. If an immigrant is newly divorced, his chances of escaping gets lower.

With respect to differences in labour market status the reference group is to stay in wage-employment ("WE to WE"). The rest of the coefficents can be compared either to the reference group or relatively to each other. With respect to non-employment (NE), staying in non-employment reduces the chances of escaping poverty significantly, both compared to the reference group, but also compared to non-employed who makes a transition to both wage-employment

and self-employment (SE). Making a transition to self-employment from non-employment seems to improve the chances of escaping poverty compared to staying in non-employment. However self-employed immigrants also seems to improve their chances of escaping poverty by making a transition to wage-employment, and reduce their chance by making a transition to non-employment. To sum these results it seems like wage-employment is important for the chances of escaping poverty, but it also seems like that self-employment is a fair second-best.

6 Conclusion (very preliminary)

Poverty is in general very widespread among immigrants in Denmark and with severe differencies across the different immigrant groups. It seems like immigrants from Vietnam and Iran are improving over the period from 1984-1993, while the situation gets worse for immigrants from Turkey and Pakistan. When analysing events associated with the starting and ending of poverty spells, the change of labour market status is very important. This result is confirmed when estimating a duration model for poverty-spells. The main result is here that wage-employment improves the chances of escasping poverty overall, but also that self-employment is a fair second-best. One could therefore argue that in case of exclusion from the ordinary labour market, self-employment could be means to an end, if the goal is to escape poverty and achieve an upward income mobility. However due to transition rates between poverty and non-poverty from year to year, and the duration dependence in th estimated model, poverty seems to show some degree of persistence.

Litteratur

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Table 1

Immigrants in poverty

(All countries)

(Group 1= below poverty-line; Group 2= above poverty-line but below median; Group 3= above median)

	Year										
	84	**85**	**86**	**87**	**88**	**89**	**90**	**91**	**92**	**93**	**All**
Group											
1	15,4	13,6	12,8	12,8	13,4	13,8	14,0	14,7	15,6	16,2	14,2
2	19,3	20,3	20,5	20,2	19,5	19,2	19,0	18,2	17,7	17,4	19,1
3	65,3	66,1	66,7	67,0	67,1	67,0	67,0	67,1	66,8	66,4	66,6

Table 2

Immigrants in poverty divided by country of orign

(Group 1= below poverty-line; Group 2= above poverty-line but below median; Group 3= above median)

		Year										
		84	**85**	**86**	**87**	**88**	**89**	**90**	**91**	**92**	**93**	**All**
Country	***Group***											
Nordic	*1*	17,5	15,6	14,8	15,0	15,4	15,0	14,8	15,7	15,4	15,7	15,5
	2	13,7	15,4	15,5	15,0	14,5	15,4	14,8	14,8	13,9	14,0	14,7
	3	68,8	69,0	69,6	70,0	70,1	69,6	70,3	69,5	70,7	70,3	69,8
EC12	*1*	12,3	11,3	10,5	10,3	11,0	11,1	11,0	11,7	11,8	12,2	11,3
	2	16,0	16,6	16,9	17,3	16,4	16,3	16,4	16,5	15,5	15,1	16,3
	3	71,7	72,1	72,7	72,4	72,6	72,6	72,6	71,7	72,7	72,8	72,4
Ex-Yugo	*1*	9,7	9,5	9,4	10,9	12,1	13,3	14,8	16,3	18,1	18,0	13,2
	2	20,8	22,1	22,3	22,3	22,3	22,5	22,8	21,7	20,4	21,4	21,9
	3	69,5	68,3	68,3	66,8	65,6	64,2	62,4	62,0	61,5	60,6	64,9
Dev.	*1*	17,9	16,2	15,7	14,9	14,7	15,1	15,0	15,5	16,2	15,7	15,7
	2	17,1	17,3	17,2	17,0	16,3	16,8	17,0	17,0	16,1	16,3	16,8
	3	65,0	66,5	67,1	68,1	69,1	68,1	68,1	67,5	67,7	67,9	67,5
Turkey	*1*	7,0	6,0	6,3	7,5	8,8	10,6	11,4	12,6	15,1	17,1	10,2
	2	27,2	27,4	26,1	24,3	23,2	21,8	21,6	19,1	19,8	19,7	23,0
	3	65,8	66,6	67,6	68,3	68,0	67,7	67,0	68,3	65,2	63,2	66,8
Pakistan	*1*	10,0	9,6	11,3	12,5	14,2	17,0	16,3	16,1	19,0	21,4	14,7
	2	24,5	25,0	24,3	24,3	23,1	21,5	19,9	19,3	19,8	18,5	22,0
	3	65,5	65,5	64,4	63,2	62,7	61,5	63,8	64,7	61,1	60,1	63,3
Vietnam	*1*	59,9	44,9	35,4	29,1	26,0	22,4	21,5	20,8	20,0	18,5	29,8
	2	21,5	28,6	32,3	34,1	34,1	35,9	34,8	33,0	31,7	31,1	31,7
	3	18,7	26,5	32,4	36,9	40,0	41,7	43,8	46,3	48,3	50,4	38,5
Iran	*1*	42,6	33,5	34,2	33,5	33,5	33,5	28,4	23,9	25,2	23,9	31,2
	2	16,1	15,5	20,0	19,4	20,0	20,6	23,9	23,9	21,3	24,5	20,5
	3	41,3	51,0	45,8	47,1	46,5	45,8	47,7	52,3	53,5	51,6	48,3
Irak	*1*	19,4	22,2	20,4	19,4	24,1	23,1	19,4	19,4	16,7	19,4	20,4
	2	33,3	31,5	33,3	26,9	20,4	22,2	25,9	25,0	30,6	24,1	27,3
	3	47,2	46,3	46,3	53,7	55,6	54,6	54,6	55,6	52,8	56,5	52,3
Nostate	*1*	18,8	21,8	15,0	18,0	22,6	18,0	21,1	21,1	20,3	25,6	20,2
	2	30,1	24,8	28,6	26,3	26,3	25,6	24,1	21,1	22,6	20,3	25,0
	3	51,1	53,4	56,4	55,6	51,1	56,4	54,9	57,9	57,1	54,1	54,8
Less dev.	*1*	19,7	17,3	16,3	16,2	16,2	16,5	17,1	18,3	19,3	20,5	17,7
	2	21,6	23,0	24,2	23,3	23,1	21,8	21,6	19,4	19,2	18,3	21,5
	3	58,8	59,7	59,6	60,4	60,8	61,6	61,3	62,3	61,5	61,3	60,7

Table 3
Transitions to above or below the poverty-line

(To above (1) and (2): more than 5% increase in income. To above (3): less than 5% increase in income:)
(To below (1) and (2): more than 5% decrease in income. To below (3): less than 5% decrease in income:)

	Year									
	85	**86**	**87**	**88**	**89**	**90**	**91**	**92**	**93**	**All**
Transition										
Stay below	10,8	9,8	9,3	9,6	10,0	10,6	11,1	12,0	12,4	9,6
To above (1)	4,2	3,5	3,2	3,0	3,0	2,9	2,6	2,5	2,6	2,7
To above (2)	0,3	0,3	0,3	0,2	0,3	0,3	0,3	0,2	0,6	0,3
To above (3)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0
Stay above	81,9	83,4	83,7	83,4	82,8	82,8	82,4	81,7	80,6	74,3
To below (1)	2,6	2,8	3,3	3,6	3,6	3,2	3,5	3,4	3,7	3,0
To below (2)	0,1	0,2	0,2	0,2	0,2	0,2	0,1	0,2	0,1	0,2
To below (3)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

NOTE: "To above (2)" and "To above (3)" concerns individuals very close to the poverty-line before the transition. If they make a transition to above the poverty-line but with less than a 5% increase in income they are in "To above (3)". The same for individuald who make a transition to below the poverty-line.

Table 4

Time spent in poverty from 1984-1993

(All immigrants divided by country of origin)

	Time spent in poverty in years											
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**N**
Country					--- % ---							
Nordic	69,0	6,5	4,3	3,4	2,7	1,8	1,8	1,6	1,5	1,6	5,7	5107
EC12	73,4	7,1	4,2	3,3	2,3	1,8	1,4	1,3	1,1	1,2	2,9	10659
Ex-Yugo	70,2	7,1	4,9	3,0	2,5	2,0	2,2	2,1	1,5	1,5	3,0	2217
Dev.	68,2	6,5	4,4	3,4	3,1	2,3	2,0	1,7	1,4	2,0	5,1	3925
Turkey	69,4	10,0	6,1	3,8	2,9	2,2	1,7	1,3	0,8	0,7	1,0	5193
Pakistan	54,1	14,8	8,8	7,4	4,1	4,1	1,9	1,6	1,6	1,1	0,5	2218
Vietnam	39,6	6,5	11,2	9,4	7,1	4,9	4,5	4,6	3,6	2,6	5,9	1156
Iran	42,6	6,5	6,5	8,4	4,5	3,9	6,5	7,1	4,5	2,6	7,1	155
Irak	62,0	3,7	6,5	4,6	3,7	3,7	1,9	1,9	0,9	3,7	7,4	108
Nostate	52,6	10,5	6,8	5,3	8,3	3,0	3,8	0,8	3,0	0,8	5,3	133
Less dev.	60,5	8,2	6,4	5,2	3,6	3,6	2,6	2,4	1,6	1,5	4,4	5378
All	67,0	8,0	5,4	4,1	3,0	2,5	2,0	1,8	1,4	1,4	3,5	36249

Table 5

Time spent in poverty from 1984-1993

(Immigrants who has been self-employed for a positive number of years between 1984-1993)

	Time spent in poverty in years											
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**N**
Country					--- % ---							
Nordic	56,0	13,9	7,2	6,1	4,9	2,1	2,8	1,6	2,1	1,4	1,9	1030
EC12	55,9	15,6	7,9	5,8	4,4	2,8	1,6	1,9	1,5	1,0	1,6	2342
Ex-Yugo	55,2	13,8	10,9	3,8	4,2	2,9	2,9	2,5	1,7	0,8	1,3	239
Dev.	53,0	12,8	7,1	6,3	4,5	3,9	3,6	2,8	1,6	1,7	2,8	956
Turkey	44,9	22,5	12,3	7,5	4,8	2,0	2,6	1,0	1,1	0,5	0,7	976
Pakistan	40,4	21,0	13,1	10,2	4,9	4,4	2,1	1,7	1,2	0,8	0,4	777
Vietnam	33,5	15,2	14,7	12,7	4,6	5,1	5,6	4,1	0,5	0,5	3,6	197
Iran	41,4	10,3	12,1	12,1	3,4	,	10,3	5,2	1,7	1,7	1,7	58
Irak	44,8	10,3	13,8	6,9	3,4	3,4	6,9	3,4	,	3,4	3,4	29
Nostate	42,0	12,0	12,0	12,0	10,0	,	4,0	,	4,0	,	4,0	50
Less dev.	43,9	14,3	11,2	7,3	5,7	6,2	3,0	3,2	1,8	1,5	1,9	1299
All	49,9	16,1	9,6	7,0	4,8	3,5	2,6	2,1	1,6	1,1	1,7	7953

Table 6

Time spent in poverty from 1984-1993

(Immigrants who has <u>not</u> been self-employed for a positive number of years between 1984-1993)

	Time spent in poverty in years											
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**N**
Country					--- % ---							
Nordic	72,2	4,7	3,6	2,7	2,2	1,8	1,6	1,6	1,3	1,7	6,6	4077
EC12	78,3	4,7	3,2	2,6	1,7	1,6	1,4	1,2	1,0	1,2	3,2	8317
Ex-Yugo	72,0	6,3	4,2	2,9	2,3	1,9	2,1	2,1	1,5	1,6	3,2	1978
Dev.	73,1	4,5	3,6	2,4	2,6	1,8	1,5	1,4	1,3	2,1	5,8	2969
Turkey	75,1	7,1	4,7	3,0	2,5	2,2	1,5	1,3	0,8	0,8	1,1	4217
Pakistan	61,6	11,5	6,5	5,9	3,6	3,9	1,8	1,6	1,8	1,2	0,6	1441
Vietnam	40,9	4,7	10,5	8,8	7,6	4,9	4,3	4,7	4,3	3,0	6,4	959
Iran	43,3	4,1	3,1	6,2	5,2	6,2	4,1	8,2	6,2	3,1	10,3	97
Irak	68,4	1,3	3,8	3,8	3,8	3,8	,	1,3	1,3	3,8	8,9	79
Nostate	59,0	9,6	3,6	1,2	7,2	4,8	3,6	1,2	2,4	1,2	6,0	83
Less dev.	65,8	6,3	4,9	4,5	3,0	2,7	2,4	2,1	1,6	1,5	5,2	4079
All	71,8	5,7	4,3	3,3	2,5	2,2	1,8	1,6	1,3	1,4	4,0	28296

Table 7
Poverty Spells - Starting Events
New kid aged 0-2
(Immigrants divided by country of origin)

	No new kid aged 02	New kid aged 02	N
Country	--- % ---		
Nordic	98,8	1,2	1295
EC12	97,9	2,1	2668
Ex-Yugo	97,8	2,2	649
Dev.	98,0	2,0	1060
Turkey	96,3	3,7	1761
Pakistan	95,0	5,0	1290
Vietnam	94,9	5,1	393
Iran	100,0	,	70
Irak	97,1	2,9	34
Nostate	96,8	3,2	62
Less dev.	96,0	4,0	2021
All	97,0	3,0	11303

Table 8
Poverty Spells - Starting Events
Change of labour market status
(Immigrants divided by country of origin)

	NE to SE	NE to WE	NE to NE	WE to SE	WE to NE	WE to WE	SE to WE	SE to NE	SE to SE	N
Country	--- % ---									
Nordic	1,7	2,9	20,9	5,0	27,6	19,9	0,8	4,0	17,1	1295
EC12	2,7	3,3	16,4	4,8	28,9	18,7	1,3	4,1	19,6	2668
Ex-Yugo	1,1	4,3	21,0	1,5	40,2	19,0	,	3,1	9,9	649
Dev.	4,0	2,3	18,6	5,7	25,1	18,6	1,3	6,2	18,3	1060
Turkey	6,2	4,7	22,8	6,0	33,2	11,4	0,5	2,5	12,8	1761
Pakistan	4,3	5,8	16,7	2,9	26,8	16,7	0,8	4,7	21,2	1290
Vietnam	4,3	3,3	17,6	7,4	39,9	17,3	0,5	1,5	8,1	393
Iran	,	4,3	10,0	4,3	28,6	17,1	2,9	5,7	27,1	70
Irak	8,8	5,9	23,5	,	20,6	11,8	2,9	8,8	17,6	34
Nostate	6,5	6,5	14,5	4,8	21,0	16,1	,	3,2	27,4	62
Less dev.	4,1	5,3	18,5	4,5	27,9	15,5	0,9	4,3	19,0	2021
All	3,7	4,1	18,8	4,7	29,6	16,8	0,9	4,0	17,3	11303

Table 9
Poverty Spells - Starting Events
Change in marrital status
(Immigrants divided by country of origin)

	No change	Couple	Divorced	Widoved	N
Country		--- % ---			
Nordic	96,4	2,1	1,3	0,2	1295
EC12	95,7	1,8	2,5	0,0	2668
Ex-Yugo	95,5	1,7	2,8	,	649
Dev.	95,1	2,3	2,5	0,1	1060
Turkey	97,2	1,9	0,9	0,1	1761
Pakistan	97,8	1,4	0,8	,	1290
Vietnam	95,7	2,8	1,5	,	393
Iran	91,4	2,9	5,7	,	70
Irak	91,2	2,9	5,9	,	34
Nostate	98,4	,	1,6	,	62
Less dev.	94,1	1,9	4,0	0,1	2021
All	95,9	1,9	2,2	0,1	11303

Table 10
Poverty Spells - Ending Events
Kid aged 15-17 turns 18
(Immigrants divided by country of origin)

	No kids turning 18	Kids turning 18	N
Country	--- % ---		
Nordic	98,2	1,8	1381
EC12	98,0	2,0	2682
Ex-Yugo	96,6	3,4	465
Dev.	99,0	1,0	1144
Turkey	97,4	2,6	1238
Pakistan	97,3	2,7	1030
Vietnam	97,9	2,1	872
Iran	100,0	,	99
Irak	94,1	5,9	34
Nostate	98,1	1,9	53
Less dev.	98,0	2,0	1976
All	97,9	2,1	10974

Table 11
Poverty Spells - Ending Events
Change of labour market status
(Immigrants divided by country of origin)

	NE to SE	NE to WE	NE to NE	WE to SE	WE to NE	WE to WE	SE to WE	SE to NE	SE to SE	N
Country					--- % ---					
Nordic	2,2	25,3	21,1	1,4	3,5	25,6	3,9	1,9	15,1	1381
EC12	3,0	25,0	16,6	1,5	4,4	24,8	4,1	2,3	18,3	2682
Ex-Yugo	3,2	29,0	19,4	0,9	5,8	25,2	2,6	1,1	12,9	465
Dev.	3,8	27,5	16,4	1,6	3,4	22,3	2,9	1,6	20,5	1144
Turkey	3,3	22,5	23,6	1,0	5,5	16,2	4,4	5,1	18,4	1238
Pakistan	3,4	19,0	15,1	1,1	8,8	20,0	3,8	6,0	22,7	1030
Vietnam	1,0	40,9	14,4	0,2	6,4	28,4	1,0	1,1	6,3	872
Iran	3,0	35,4	15,2	5,1	1,0	20,2	2,0	5,1	13,1	99
Irak	5,9	38,2	26,5	,	,	8,8	2,9	,	17,6	34
Nostate	5,7	17,0	18,9	,	1,9	22,6	1,9	9,4	22,6	53
Less dev.	3,2	26,9	16,3	1,5	5,7	21,0	3,9	2,8	18,7	1976
All	3,0	26,3	17,7	1,3	5,1	22,7	3,6	2,8	17,4	10974

Table 12
Poverty Spells - Ending Events
Change in marrital status
(Immigrants divided by country of origin)

	No change	Couple	Divorced	Widoved	N
Country		--- % ---			
Nordic	96,4	2,3	1,2	0,1	1381
EC12	95,7	2,6	1,6	0,1	2682
Ex-Yugo	93,5	4,7	1,7	,	465
Dev.	95,4	2,5	1,8	0,3	1144
Turkey	93,9	3,8	2,3	,	1238
Pakistan	94,8	4,0	1,1	0,2	1030
Vietnam	96,3	3,4	0,2	,	872
Iran	96,0	4,0	,	,	99
Irak	94,1	5,9	,	,	34
Nostate	98,1	1,9	,	,	53
Less dev.	94,6	2,9	2,4	0,1	1976
All	95,2	3,1	1,6	0,1	10974

Table 13

Hazard model for poverty spells - immigrants aged 18-57

(the first spell for each individual only)

Parameter	**Coeff.**	***Std. err.***
Const1	1,819 **	*0,209*
Const2	1,660 **	*0,228*
Const3	1,243 **	*0,232*
Const4	1,401 **	*0,235*
Const>4	0,275	*0,222*
EC12	0,073	*0,067*
Ex-Yugoslavia	-0,322 **	*0,102*
Other dev. Countries	-0,077	*0,081*
Turkey	-0,038	*0,078*
Pakistan	0,335 **	*0,086*
Vietnam	0,237 **	*0,103*
Iran	0,160	*0,215*
Nostate	-0,369	*0,292*
Other less dev. Countries	-0,041	*0,071*
Age	-3,962 **	*0,229*
Year since migration	-0,028	*0,031*
Education in years	0,242 **	*0,038*
Less kid aged 15-17	0,093	*0,094*
NE to SE	-0,349 **	*0,120*
NE to WE	-0,041	*0,098*
NE to NE	-1,758 **	*0,075*
WE to SE	0,016	*0,130*
WE to NE	-1,296 **	*0,079*
SE to WE	0,955 **	*0,235*
SE to NE	-0,552 **	*0,117*
SE to SE	-0,003	*0,078*
Newly married	0,104	*0,135*
Newly divorcedt	-0,269 *	*0,143*
Newly widoved	-0,102	*0,715*
Educ. Just ended	0,017	*0,161*
MP1	-1,727 **	*0,357*
SSH1	-1,049	*0,640*
Prob 1	0,26	
Prob 2	0,74	

NOTE: No multiple spells. W.r.t. Labour market status "WE to WE" is the excluded category. W.r.t. country "Nordic" is the excluded category. (**) insignificanse on a 5% level and (*) on a 10% level.