ECONSTOR
Make Your Publications Visible.

A Service of

ZBW Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Stambøl, Lasse Sigbjørn

Conference Paper

Migration, allocation and reallocation of immigrants in the regional labour markets

55th Congress of the European Regional Science Association: "World Renaissance: Changing roles for people and places", 25-28 August 2015, Lisbon, Portugal

Provided in Cooperation with:
European Regional Science Association (ERSA)

Suggested Citation: Stambøl, Lasse Sigbjørn (2015) : Migration, allocation and reallocation of immigrants in the regional labour markets, 55th Congress of the European Regional Science Association: "World Renaissance: Changing roles for people and places", 25-28 August 2015, Lisbon, Portugal, European Regional Science Association (ERSA), Louvain-la-Neuve

This Version is available at:
https://hdl.handle.net/10419/124655

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

Statistics Norway,
Research department,
Lasse Sigbjørn Stambøl,
30.6.2015

Migration, allocation and re-allocation of immigrants in the regional labour markets

By
Lasse Sigbjørn Stambøl

Research Department, Statistics Norway, Box 8131 Dep, 0033 Oslo, Norway

Abstract: The aim of this paper is to analyse immigrants' mobility, both geographically and in terms of transitions into and out of the regional labour markets in Norway, in order to uncover the extent to which the workings of local labour markets contribute to integration versus exclusion. For comparisons, we have followed groups of Norwegian-born children of immigrants and the general population in and out of jobs in the same local labor markets through the same period.

We also investigate whether migration contribute to change the labor market status of immigrants (like in job, in education, unemployed or outside labor force) using a "cohort-analysis" where we follow selected cohorts of immigrants through some years after they immigrated for the first time. To measure the specific effects of migration on change of labor market status, we have compared the labor market status achieved by those who relocate compared with corresponding groups in the population that does not move. Among immigrants, we have selected the cohorts in 2004 and 2008 and then followed each of them through the five subsequent years after recorded immigrated for the first time.

The analyses are undertaken based on micro panel data featuring all immigrants in Norway, mostly recognized by their reason for immigration, from the turn of millennium to as recent year as possible. Particular attention are spent on examining the mobility of immigrants and native control groups relative to the *gross demand* for labour in regional labour markets measured by means of a complete annual regional *vacancy account* for each of the years involved in the study. These data and methods also allow us to specify each person's labor market status in each year during the investigation period, thus also each person's annual change in employment status during the same period.

Preliminary results show that immigrants have been of great importance in order to cover part of the demand for labor in the regional labor markets. On the other hand, the results indicate that immigrants have replaced some labor without immigrant background, alongside a tendency that new immigrants replace previous immigrants in the regional labor markets. Domestic migration has to a certain extent been beneficial for immigrants to obtain a job or to carry out an education. The effect of relocation as the ease of access varies, however, according to the immigrants' reason for immigration and their regional settlement patterns by centrality. Some groups have both immediate and permanent positive impact of moving with respect to work participation, while others may have positive short-term but not long-term effects or vice versa.

G_J Migrations, diasporas, and ageing in the regions

E-mail: Corresponding author: lasse.sigbjorn.stambol@ssb.no
Presented at the 55th.Congress of the European Regional Science Association.
In Lisboa, Portugal, 25. - 28. August 2015

Background and challenges

This paper contains analyses of immigrants' migration and labor mobility seen in the light of and partly explained by regional labor market conditions. With the help of different methods we are mapping the driving forces in the regional labor markets that affect immigrants' mobility within and across the regional labor markets, as well as how these processes vary between different groups of immigrants defined by their reason for immigration. Immigrants' adjustment in the regional labor markets, e.g. by information on their employment statuses, like employed, in education, unemployed, outside the labor force, as well as changes in employment status, are included as important characteristics.

A key question to answer is how the regional employment opportunities, measured as both annual net and gross demand for labor in different regions, affect immigrants' movements and settlement. The proportion immigrants make up of the total employment in the origin and destination regions are included among the explanatory factors. When we know the proportion immigrants make up of employment, persons without immigrant background account for the remaining proportion of employment when we control for the group of persons born in Norway of immigrant parents. In many context, we therefore operates with three main groups consisting of immigrants, persons born in Norway of immigrant parents and the remaining population, also described as the majority population, population without immigrant background or simply, the natives.

This provide opportunities to analyze how the allocation and re-allocation processes at the labor market takes place between persons with and without an immigrant background, and thus in some context persons born in Norway of immigrant parents. Period of residence among immigrants is a key variable in parts of the analysis. The regional level of analysis goes down to the municipal level, to build up relevant data on more aggregated regional levels given municipal centrality and more recognizable sections by economic regions (labor market regions) for all estimations and counties and provinces for presentations.

The purpose of the analyses is to provide knowledge about the forces that affect mobility within and between regional labor markets, which could shed light on several key social issues: What factors are affecting the participation of immigrants and integration versus no participation in the regional labor markets? A key objective is to investigate whether regional allocation and re-allocation processes, be it in terms of changes in employment levels and gross flows in and out of employment and through domestic in- and out-migration, but also in some contexts how immigration and emigration, is increasing the number of immigrants in the regional labor markets. Another key objective has been to examine whether immigrants change their status in relation to the labor market through domestic relocation.

In the analyzes we have concentrated on the flows of labor leading to employment from a status outside of employment, be it from persons both within and outside Norway, and vice versa flows from employment to a status outside employment in Norway and to abroad. There are also large flows from an employment relationship direct to another employment relationship, but we have only included net results in certain contexts. These flows are important, but will not change a persons' integration in the labor market, given that these persons are already integrated as employed and thus continues to be employed, albeit in a different job.

It is customary to define the participation in employment and participation in education as something positive from the point of an integration issues. In the last part of the analysis, we

have analyzed transitions to both employment and/or education, and vice versa if one leaves a status of employed and/or education to something else.

Data and definitions of immigrant conceptions

The current analyses are based on longitudinal data for population, migration, immigration, labor and education for the entire population derived from individual-based registries at Statistics Norway. The linked registry data contain in addition a number of personal characteristics, including comprehensive information on individuals' for calculating statuses in relation to the regional labor markets down to the municipal level. *Immigrants* are defined as persons born abroad by two foreign parents and have immigrated to Norway. The immigrants' Norwegian born children are defined as persons born in Norway by two immigrant parents. Furthermore, these two groups are characterized as the population with immigrant background. Persons that are not defined as immigrants or persons born in Norway by immigrant parents are defined as the remaining part of the population, or the population without immigrant background. This means that persons born in Norway by one immigrant parent and one none immigrant parent are not included in the population with immigrant background.

Furthermore, the immigrants are grouped by their registered reason for immigration, where the four main reasons are: immigration due to search of labour, immigration as refugees, immigration due to family unification/family formation or immigration due to education. When statistics do not operate with any reason for immigration for immigrants from other Nordic countries, we handle immigrants born in other Nordic countries as a separate group of immigrants. There is also a large group of immigrants with not specified reason for immigration. The concept of reason for immigration was introduced to the statistics in 1990, so all immigrants that immigrated to Norway before 1990 is still to be found in this group of immigrants.

An annual vacancy accounting:

Traditional labour market statistics operate with the number of employed, unemployed and individuals outside the labour force, where the annual differences express the net change of all gross-streams at the labour market. Full knowledge of the gross-streams will also give full knowledge of the net change, while the opposite is obviously not the case. One basic aspect of this analysis is then to establish a regional labour market indicator illustrating the annual gross-flows between the statuses. Figure 1 illustrates how this regional labour market indicator is measured in a so-called "annual vacancy account". With regard to the "vacancy accounting", we basically deal with the filled in vacancies in the regional labour markets, which means that the average stock of not filled in vacancies is not taken into consideration.

The vacancy account represents a consistent way of measuring vacancies in the regional labour markets. The total vacancy account is defined so that all transitions from jobs have to be replaced if the total entering stock and outgoing stock of employed is equal. If entering stock of employed (EN) is lower than the outgoing stock of employed (EX), not all employment exits will be replaced, and vice-versa, if (EX) is lower than (EN), the total employment recruitment will exceeds the employment exits. The total employment recruitment in this case thus represents the filled in vacancies from year t to year t+1. A measure of structural change in the various local labour markets appears by breaking down the total figures by different sectors and segments. This is of great importance, because we expect that there will be differences in the leaving and recruitment processes due to unequal development by groups of persons in the local labour markets, and in this analysis with focus

on immigrants, persons born in Norway by immigrant parents and natives respectively. In the project we measure the mobility into, out of and between firms as the basic unity.

Figure 1. An overview for calculations of job and labor mobility using a consistent "vacancy-account" of individuals.

(1) Employed in the firm (F) in the region (R) in year t-1 by person characteristics
Total exits (EX): All employed in year t-1 that in year t is no longer employed in the firm they were employed in year t-1
(a) Net outflow of number of jobs from year t-1 to year t in firms that reduce the number of employed
(b) Net outflow of number of jobs from year t-1 to year t due to closures of firms
(c) Gross departure of number of persons from each firm from year t-1 to year t (Includes transition to education, to unemployment, out of labor force, out-migration, emigration, leaving working age and death (Includes also in some context change of firm).
Total entries (EN): All employees in year t that in year t-1 were not employed in the firm they are employed in year t
(d) Net additions in number of jobs from year t-1 to year t in firms that increase the employment
(e) Net additions in number of jobs from year t-1 to year t in new established firms
(f) Gross additions of number of persons in each firm from year t-1 to year t (Includes access from education, from unemployment, from outside the labor force, in-migration, immigration and those entering working age (Also includes in some context change of firms).
(2) All employed in the firm (F) in the region (R) in year t by person characteristics

Net job mobility = (a + b) – (d + e). Gross labor mobility = (EN) – (EX) and (f) – (c)

Implementation

The content of the results is allocated into three sections: In the first section, titled "The net and gross changes in employment among immigrants, their Norwegian-born children and the general population" is examined how the net and gross employment among these groups have evolved in the period after the millennium. In the second section, titled “The impact of regional labor markets on migration among immigrants, their Norwegian-born children and the general population” is investigated and estimated how both net and gross changes in the regional employment have affected gross and net migration flows in Norway in the period after the millennium. In the last section, titled “The importance of migration for labor market and educational participation among immigrants by reason for immigration” we examine whether the relocations have helped to change the labor market status of immigrants by following selected cohorts of immigrants through some years after they immigrated for the first time.

Net and gross changes in employment among immigrants, their Norwegian-born children and the general population

In this section we examine how employment among immigrants, their Norwegian-born children and the general population has evolved in Norway in the period after the millennium. We first give an overview of developments in the period 2000-2013. Then appear in more detail how gross flows into and out of employment has changed for the same groups through the same period using labor mobility based on micro data. We have used data from the employment records coupled with information from population registers to distinguish these three groups. The figures are taken from each of the vintages in the period 2000-2013, and grouped so that we can look at the annual changes.

Net employment growth

In Figure 2 is shown the net change of employment in each of the three groups from the previous year for the country as a whole. There are great changes and huge differences in changes, especially for persons without an immigrant background, but also for immigrants. The figure largely reflect the economic developments, in which the new millennium started with some weak economic years in the labor market before the economic situation turned clearly upwards from 2004 until the peak in 2007. The financial crisis appeared in 2008, followed by the subsequent financial crises year of 2009. Unlike many other countries the Norwegian economy started to grow already from 2010, while the years of 2011 and 2012 represented an upswing, partly due to the large and growing investment in the petroleum industry. Simultaniously, this also contributed to change the geographic image of Norway with a certain displacement of the center of gravity of the economy from the eastern regions, featuring the capital region, and across to the west coast. 2013, which is the last of the years examined in this analysis, got a slight muting of economic growth toward the end of the year, so the 2013 annual average, got a slightly lower growth than the peak years 2011 and 2012.

To first look at the majority population without immigration background it was recorded a decrease in employment in 2002 and 2003 before it barely arrived on the plus side in 2004 and then increased sharply until the peak years of 2006 and 2007, with an annual growth in employment in approximately 60 000 persons. Then came a strong fall in employment growth among the majority population in 2008 before falling by almost 40 000 people in the financial crisis year of 2009. Employment situation edged up again in 2010, but no more than it was a small net decline in employment for persons without immigrant backgrounds also in this year, before the majority population again experienced a net growth in employment in 2011, but no more than about 10 000 persons. In 2012, it was again a tiny drop in employment for persons with no immigrant background, while it barely went up slightly on the plus side in 2013.

When we turn to immigrants, it is a net increase in employment in all years after the millennium. Even the years of very weak economic growth in the early 2000s helped immigrants with a small net increase in employment, while persons without immigrant background then had a clear decline. As we know the EU expanded eastwards to include eight new countries in Eastern Europe from 2004 and another two new countries, Romania and Bulgaria, were incorporated into the EU from 2007. This contributed greatly to increasing labor immigration from the new member countries in Eastern Europe, especially from Poland, but also later from Lithuania and after 2007 also from Romania.

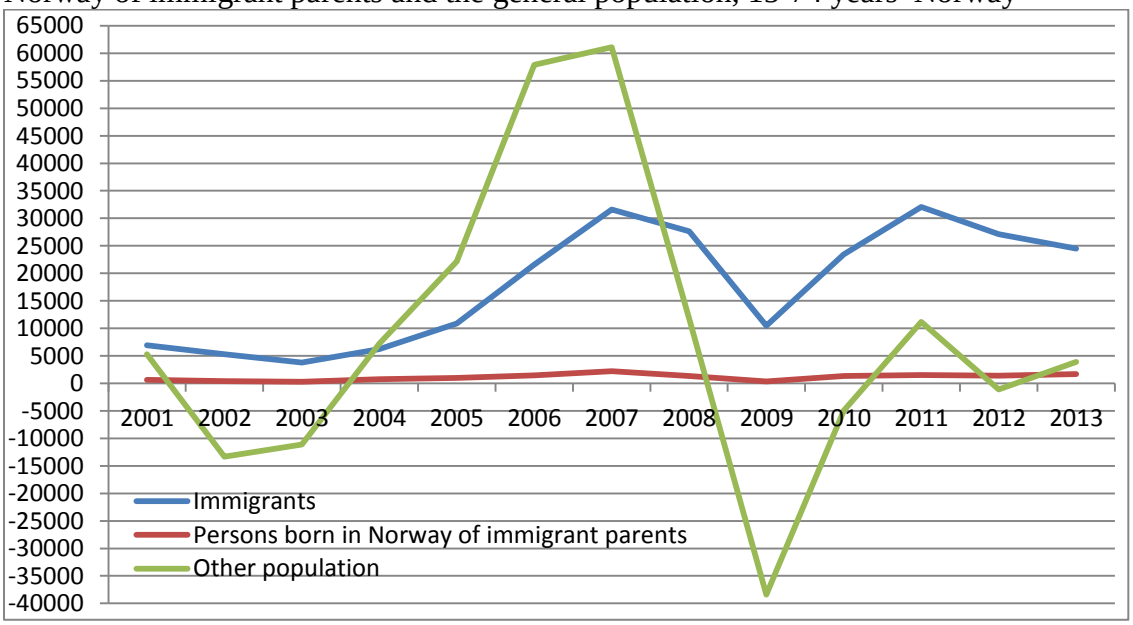
The net increase in employment among immigrants clearly increased from 2004, for reaching a peak so far in the economic upswing year of 2007. However, the increase in the number of employees was still somewhat lower among immigrants than among natives until 2006, for then in 2007 to increase slightly more than among the natives. A lower growth in net employment among immigrants than in the general population was, however, very clearly expected as the majority population at that time amounted to more than 90 percent of the total population.

When we turn to the nascent stage of the financial crisis in 2008, however, the employment growth fell clearly more in the population without immigrant background than among immigrants, who had only a moderate fall in the net increase in employment in 2008 compared to the peak year of 2007. When we continue to the actual financial crisis year of 2009, the employment growth clearly falls among immigrants, but not as much as among natives. In a year when employment among natives fall by about 40 000 persons the net

employment among immigrants increase with about 10 000 persons. This is a strong distinction between these two groups, and especially when we take into account that the proportion of immigrants in the total population still constitutes no more than ten percent.

The last group composed of persons born in Norway with two immigrant parents constitutes a clearly smaller group than immigrants, and contributes less to changes in the employment. But as the chart shows the group contributes mostly to a net increase in employment throughout the period. Like the immigrants, but unlike the rest of the population persons born in Norway of immigrant parents contributes to a slight increase in employment also in the financial crisis year of 2009.

Figure 2. Net change in employment from year 2001 to 2013. Immigrants, persons born in Norway of immigrant parents and the general population, 15-74 years Norway



Labor market transitions among immigrants

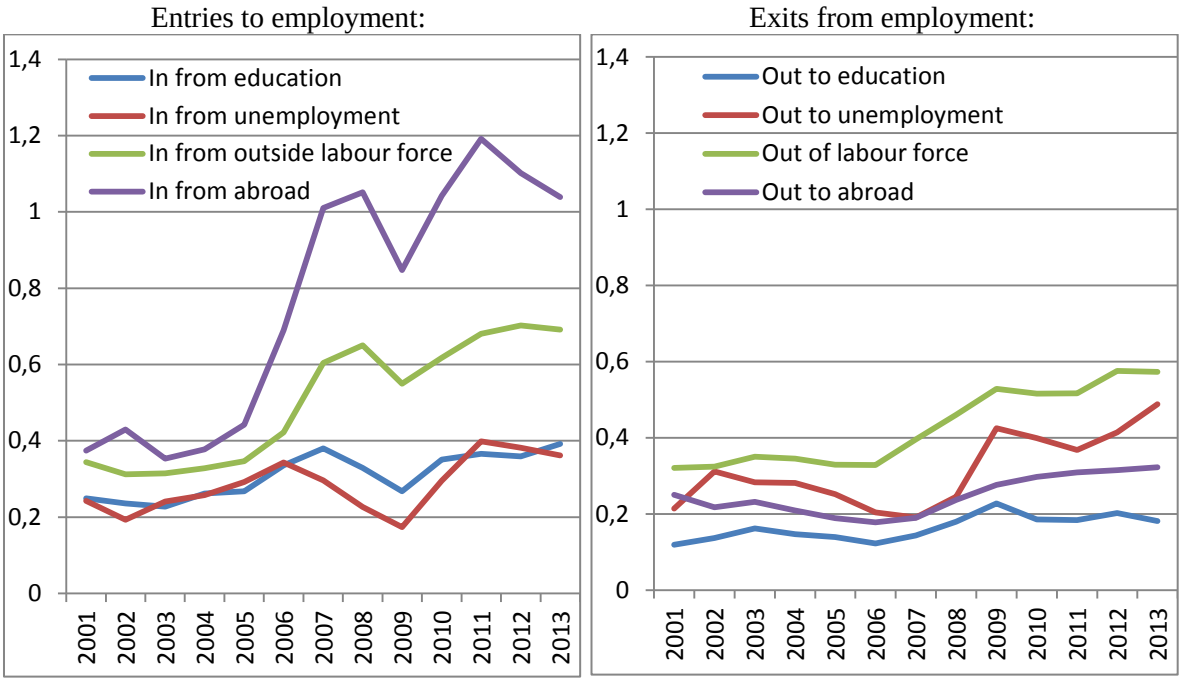
In Figure 3 we have included results showing the proportion immigrants make up each of the transitions in and out of employment measured in relation to total employment in the country in year t-1 through each two-year period in 2001-2013. The greatest access to employment stems from the category "from abroad", which then mainly is registered gross immigration. This access rapidly increases in the years after 2004 with a clear decline in the financial crisis year of 2009, and then again increases until the largest supply in 2011, before falling slightly in the last two years of the period, albeit still at a very high level.

The second largest flow of immigrants to work comes from those that in year t-1 were to be find registered as resident in Norway, but with status outside the labor force. This development also follows the pattern of increased immigration after the EU enlargement eastwards in 2004 with an increase up to 2008, before falling slightly in 2009 for then again to increase during the period in question. The number of immigrants who go from education to job and from unemployment to work is somewhat lower, but also with a growing tendency throughout the period with the exception of a clear fall in the financial crisis year of 2009.

While immigrants flowing into jobs from various status groups there are also a lot of immigrants leaving employment and return to the same status groups that the new influx of immigrants were recruited. As the exits in Figure 3 show, there is a growing tendency

throughout the period that immigrants leaving a job they hold in year t-1 for then to go out of the labor force in year t. It is in this status group most immigrants leaving employment ends up. This is surprising, because persons that have been registered as employed in year t-1 have the option to register as unemployed in year t, where several would also be entitled to receive unemployment benefits. A question one can ask is if some of the immigrants who go out of employment one year and to a status outside the labor force the following year are still settled in the country? There are in several contexts focused on many immigrants do not report exodus when they emigrate, so that this emigration must be made administratively some time after the exodus has taken place, usually at least two years later. Another possibility that this group is so numerously, is that anyone might go temporarily out of the country, for then returning to Norway after a while for searching new jobs. As we have already seen is the access of immigrants to employment from the status group outside the labor force rather large, and larger than the demise of employment and return to this group would suggest. Thirdly, it may also be relevant to mention that all flows of labor measured in the analysis are derived from registers, so that any unregistered employment is obviously not included.

Figure 3. Gross entries to and exits from employment by status groups 2001-2013. Percent of total employment in Norway. Immigrants, 15-74 years.



However, there are also some immigrants who leave employment to unemployment in year t. The same applies to the transition from registered employment to be registered under any education, but this group constitutes the smallest transition group through the time period, but with a slight increase during the same time period. Immigrants who go out of employment to the group "out to abroad" consists by those who have been registered as emigrated. This group is growing slightly in the years after 2007, albeit without getting any visible increase in financial crisis year of 2009, as it happens for the other transition groups, especially to unemployment.

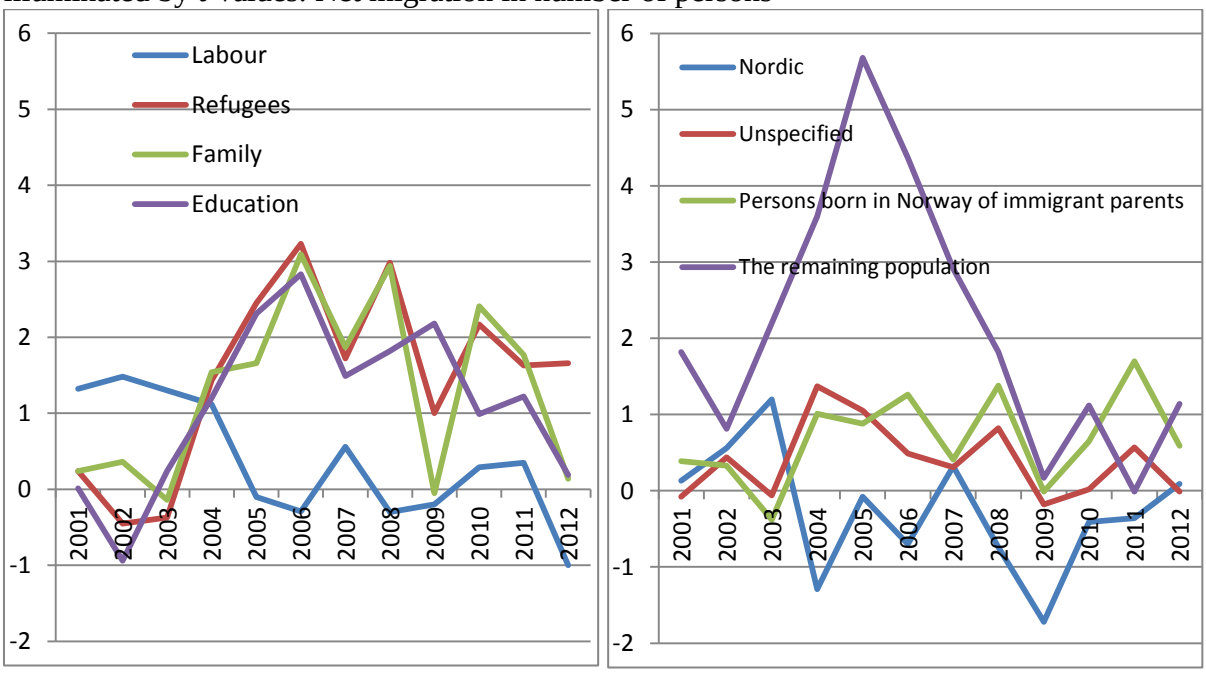
The impact of regional labor markets on migration among immigrants, their Norwegian-born children and the general population

In this section we examine how gross and net changes in employment has affected, and/or are consistent with migration patterns in Norway among immigrants, their Norwegian-born

children and the general population in the period after the millennium. We have hypothesized that there may be stronger correlation between labor markets and migration when they are linked to gross flows in the labor market than the more commonly used annual net changes in employment. It is e.g. in Stambøl (2005) shown that there are substantial flows both into and out of employment each year in all regional labor markets, albeit with some regional differences. In addition, there are many persons who change jobs each year, and in that respect contributes to the overall flow of persons in and out of jobs. If we include all persons aged 15-74 who are either going into or out of a job, be it full time or part time, we are talking roughly about a quarter of the total employment each year as an average.

We have, however, first made some analyses that illuminate the relationship between changes in the internal net migration and net changes of employment across 89 economic regions in Norway in the period of 2001-2013. When the differences in the estimates also reflects the differences in level of significance we illuminate the relationship between net migration and net employment growth like in figure 4 by values of significance (t-values).

Figure 4. The relationship between internal net migration and employment change 2001-2013. Immigrants by reason for immigration, persons born in Norway of immigrant parents and the remaining population 15-74 years. Estimations made for 89 economic regions and estimates illuminated by t-values. Net migration in number of persons



The labor immigrants show mostly weak correlation between net domestic migration and regional employment trends, but none of the estimates are significant positive or negative before 2013. The results for refugees are clearly different, in that this group shows a very clear positive correlation between net domestic migration and regional net change in employment most of the period. The majority moves of refugees then go to those regions where the net increase in employment is strongest. Immigrants with family as reason for immigration show much of the same results as refugees. This is in itself not so surprising, given that the resident portion of family immigrants are more attached to refugees than those associated with migrant workers. The last group has, however, been growing rapidly in recent years, but as holdings of the residents are family immigrants affiliated with refugees still the greatest. Among immigrants with education as reason for immigration, this relationship

between net domestic migration and regional employment trends are mostly positive, and several vintages before the financial crisis shows significant positive estimates, while the period then shows still positive but no significant positive correlations. Nordic immigrants, however, show a reverse trend with relationship that is largely negative, albeit not significant negative. The results are very similar to the findings that were made for immigrants with labor as reason for immigration. Immigrants with unknown reason for immigration show predominantly week correlations. The same is the situation for persons born in Norway of immigrant parents. The estimates are mostly positive, but no vintages show significant correlations except for the year of 2011.

Previous migration analyzes on data from the 1980s, 1990s and early 2000s (see e.g. Stambøl, Stølen and Åvitsland, 1998, Stambøl, 2005, 2010, Carlsen et.al, 2013) have shown clearly positive and significant relationship between internal migration and the regional net employment trends in Norway. Figure 4 partly confirm this with clear positive and significant correlations between net domestic migration and regional net change in employment among the natives from 2003 until 2007, albeit with somewhat weaker bonds in the beginning of the millennium. Then a trend change appeared in that the relationship between net migration and net regional employment growth among natives become weaker in 2008, for then to give weak and non-significant estimates for all years up to 2013.

The gradual weaker bond between domestic migration and net employment trends among the natives has provided the basis for a number of hypotheses. However, our results show that immigrants have spread to the whole country, but where labor migration has been particularly high to the west coast, but also to middle Norway and northwards. The results also show that the natives have continued to move away from many of these regions, with net out-migration from the west coast and northern Norway. When viewed in conjunction with the regional economic development, where the so-called "duality" of the Norwegian economy, with strong growth linked to large and increasing petroleum investment has been particularly strong growth in the regions of Western Norway, but also further north along the coast, one will also expect that this will have a positive effect on migration flows to the regions where employment progresses well. When the results show that the natives still has tended to move away from many of these regions, will this contributes to a weaker correlation between net domestic migration and regional net employment trends. It may seem that while the regional economy has changed, the natives have continued their traditional domestic migration patterns away from the recent growth areas, with the result that the relationship between net migration and regional employment trends has been clearly weaker.

This conclusion becomes strengthen by investigations where we included results of the relationship between gross immigration and regional employment trends. Following relatively weak correlations between gross immigration and regional employment trends during the first years of 2000s, this relationship increases appreciably in the years from 2004 and during the strong upturn period until 2007. After a somewhat weaker correlation between immigration and regional employment trends during the financial crisis, this relationship increased again in the recent years of the investigation period, particularly among immigrants with labor, family and education as their reason for immigration.

To assess this even further, we have analyzed the relationship between the domestic net migration and immigration. After an overwhelmingly negative and significant correlation between the domestic net migration and immigration in the early 2000s, this turned to clear positive and significant estimates around the time of 2004 and in the years thereafter. From

2007, however, this relationship becomes weaker for then to turn to negative and significant correlation between net internal migration and immigration. This means that immigration after 2006 has largely gone to regions in Norway that have lower than average domestic net in-migration. This applies to most immigrant groups, but slightly less among refugees. This confirms in many respects the hypothesis that immigration have tended to partly replace and partly compensate for domestic relocation.

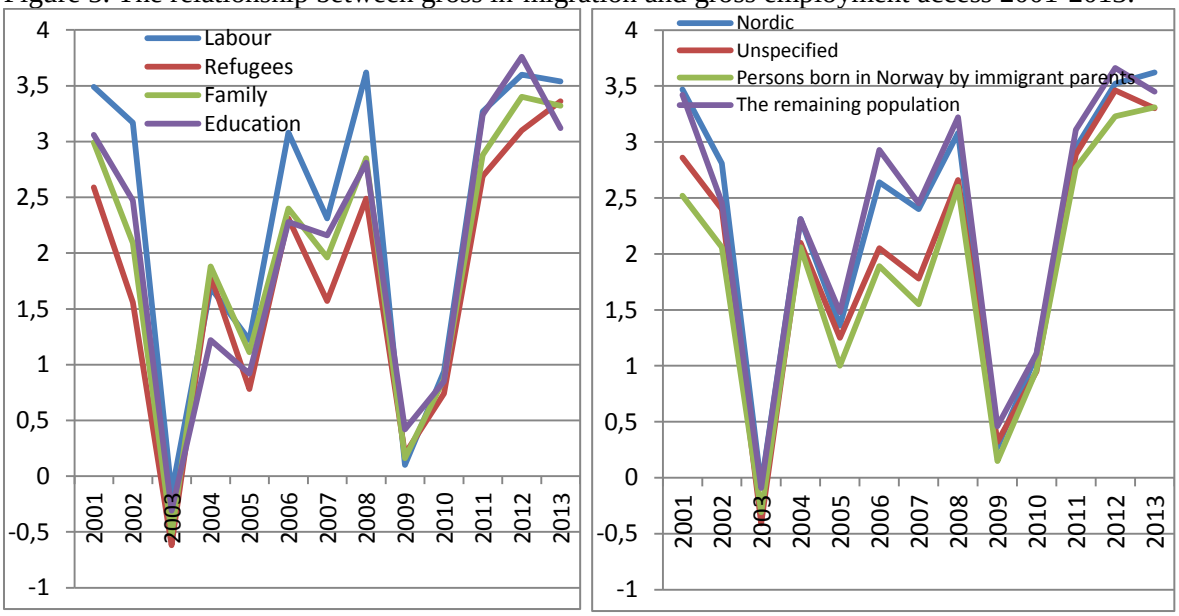
We have also looked at the relationship between domestic net migration and the proportion each immigrant group makes up of the regions' total employment. Initially, one might think that immigrants may move to regional labor markets where there is higher immigrant share. Among refugees we find a positive and significant correlation between domestic net migration and the proportion refugees make up of the regional employment. As we have previously shown there is a centralizing tendency in the regional migration patterns among refugees, which means that they move to regions with larger immigrant concentrations both in population but also in employment.

This relationship is almost as strong among immigrants with family as reason for immigration, but this correlation decreases sharply towards the end of the period. This is probably due to more frequent family reunification with labor immigrants than refugees from 2007. The relationship between net migration and the proportion of labor immigrants in the regional labor markets is weak or negative among immigrant workers, which means they have tended to move towards regions with less other labor immigrants. Education immigrants come in an intermediate position, but with a positive and significant relationship between net migration and the proportion of education-immigrants in the regional labor markets, but still weaker binding than for refugees and family immigrants. It emerges that Nordic immigrants have a negative, and sometimes significant negative relationship between net migration and the proportion of Nordic immigrants in the regional labor markets, indicating that they like labor immigrants tend to move towards regions with somewhat lower proportion of other similar immigrants than opposite. Norwegian-born children of immigrant parents show positive and sometimes significant relationship between net migration and the proportion of them in the regional employment. Something similar can be said about the migration patterns of immigrants with unknown reason for immigration, although weaker relationships than among Norwegian-born children of immigrant parents. Finally, we have included the relationship between net domestic migration and employment units for persons without an immigrant background. The positive effect at the very beginning of the 2000s can be linked with less centralization in migration patterns, in that they move to regions where immigrant proportion is lower, while migrations go in more centralizing direction during the period of strong growth before the financial crisis, when they move to central regions with lower percentage of persons without immigrant background in employment, while the impact is weaker towards the end of the investigation period when immigrant element also has increased appreciably in many less central regions.

Finally, in this section we test the correlation between gross migration and gross flows in the regional labor markets. It is an opportunity to see gross movements in relation to the gross flows of labor that goes into and out of firms in all regional labor market. As we have already seen, the gross flows both in and out of employment are quite extensive. In a well functional labor market we expect a high correlation between gross labor demand and gross in-migration to a region in the same way that we expect gross out-migration from regions to be in correspondence with the employment demise in regions. Obviously, not all access to employment and all reductions of employment touch relocations, but we expect a clear connection in both directions.

In figure 5 we test the relationship between gross in-migration and gross employment access to the same regional labor markets we have used above. The explanatory power now seems to be somewhat stronger with higher significance. Moreover, the results show a strong correlation between gross immigration and gross labor access at the beginning of the 2000s, falling to slightly below zero in the weak financial years 2002 and 2003 before the connection again rising through the period of strong economic growth until the financial crisis, when it again falls close to zero for then again to pick up through the last years of the investigation period.

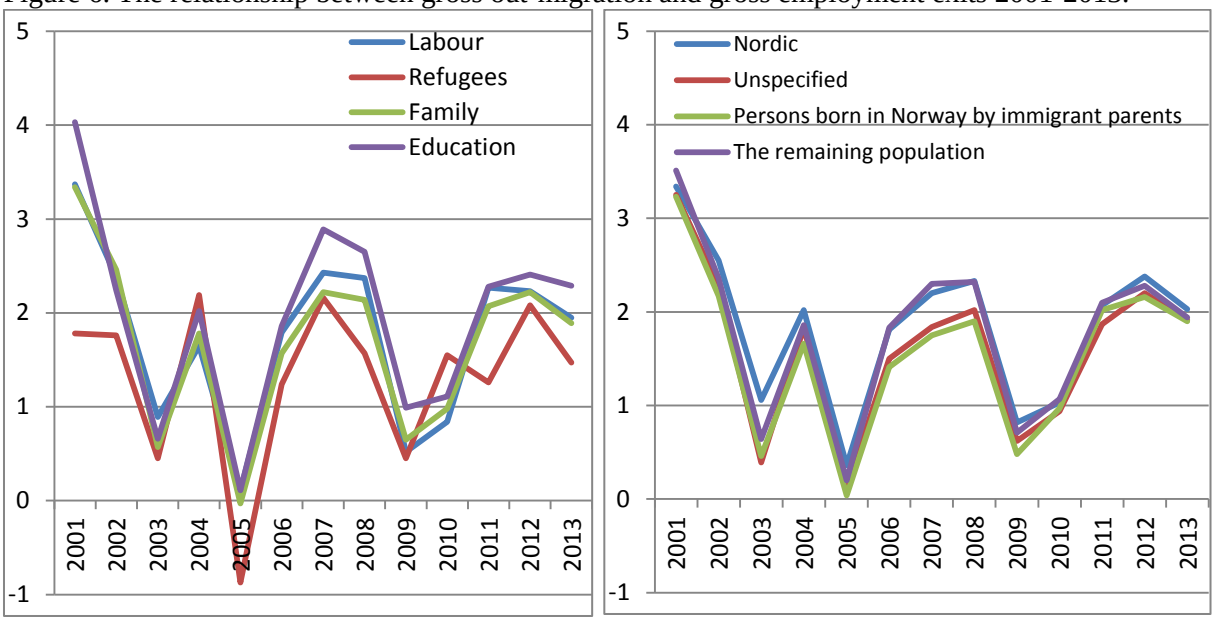
Figure 5. The relationship between gross in-migration and gross employment access 2001-2013.



There are labor and education immigrants that show the strongest correlations between gross in-migration and gross employment access, while refugees and family immigrants show more moderate correlation, albeit significantly positive in the periods when the economy has shown strongest growth. There are also relatively strong, positive and significant correlation between gross immigration and gross employment access among Nordic immigrants and the population without immigrant background, while immigrants with unknown reason for immigration and persons born in Norway of immigrant parents show more moderate results, though several years with positive and significant correlation between gross migration and regional gross inflow of employees.

Similarly, we have tested the relationship between gross out-migration and gross disposals in the regional employment. The results are visualized with t values in Figure 6. As stated there are large variations in this respect over the time period, especially related to the economic shifts that have taken place during the period. The relationship between gross out-migration and gross exits of employment appears to be somewhat stronger when the economy is going well then turn down to near zero when the economy is weaker. This is by and large consistent with expectations that the number of persons who leave jobs to search for another job is significantly higher in upturns than in recession, and in that sense also leaves vacancies in the firms they leave, where the number of jobs has a stronger tendency to remain high and even grow when the economy is going well, while downsizing and even closures of jobs increases in periods of weaker economy.

Figure 6. The relationship between gross out-migration and gross employment exits 2001-2013.



There are relatively small differences between groups of persons also with regard to the relationship between gross out-migration and gross employment exits. It is also here somewhat stronger connection for the labor and education immigrants than for refugees and family migrants. This difference especially emerged during the period of strong growth prior to the financial crisis. Among the other groups the correlation between gross out-migration and gross employment exits is somewhat stronger among Nordic immigrants and persons without immigrant background than among immigrants with unknown reason for immigration and persons born in Norway of immigrant parents.

The importance of migration for labor market and educational participation among immigrants by reason for immigration

In this section we investigate whether migrations have contributed to changing labor market status of immigrants where we follow selected cohorts of immigrants through some years after immigration. To measure the effect migration has on change of labor market status, we have compared the status those who relocate achieves compared with corresponding groups that does not move.

As migrants we consider those who have moved between 89 labor market regions, while all others are defined as "settled." The latter group may also have moved, but then only locally. Such moves would then mean that they not seek to other labor markets for to improve their status in the labor market.

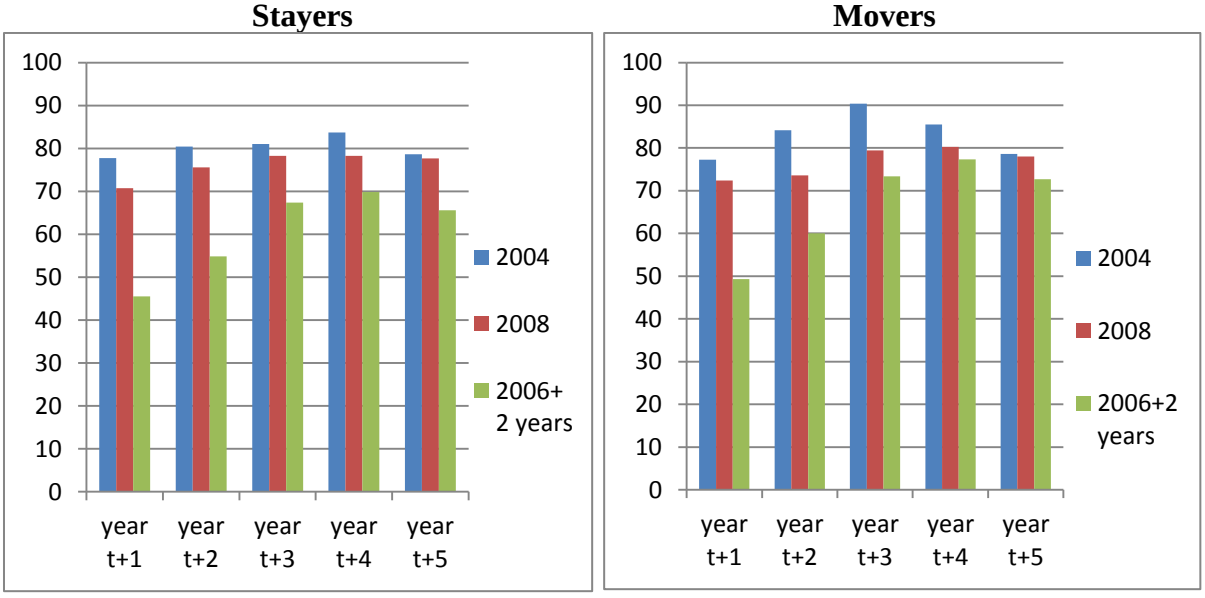
We have selected all immigrants from the cohort of 2004 and 2008 and followed each of them through the five consecutive years after they were recorded immigrated, which means the five-year periods 2005-2009 and 2009-2013 respectively. When period of residence in the destination country may affect the labor market status of immigrants, we include immigrants who immigrated in 2006 into the same analysis conducted for immigrants who immigrated in 2008. To choose a method where two different cohorts are monitored and analyzed through the same time period, we thus controlling for business-cycle impact on attainment of status in the labor market.

The analysis is a "two-way" analysis" depending on the labor market status of immigrants in the year of arrival, and the labor market status in 2008 for immigrants who arrived in 2006. The first main group is based on all immigrants who were not registered as employed and/or in education in the base year, and analyzed how they either remain standing outside these "activity-categories", or to which extent they enter these categories depending on whether they continue to be settled in the region they were registered as residents in the base year, or whether they are making a domestic relocation during the investigation period. For those who are already registered in employment and/or in education in the base year, the analysis shows how these manage to maintain their status the next five years for those who do not migrate in the investigation period compared with those who undertake such removals. This "two-way analysis" thus provides a contribution to measure immigrants' integration into society given the integration criterion participating in employment and/or in education.

Transition from "inactivity" to "activity" statuses:

In this section we've put together transition from "inactive" to "active" status groups for all cohorts of immigrants. Figure 7 shows assemblies for all labor immigrants who do not move and move through the five-year periods under consideration. Among those who did not move it was the 2004 cohort that performed best, with a transition to employment and/or in education of around 80 percent of the group. The labor immigrants from the 2008 cohort showed a slightly weaker transition in the early years, which can be associated with the financial crisis. Labor immigrants from the 2006 cohort, who were not in employment and/or in education in 2008, showed clearly the weakest transition to employment and/or in education, especially the first years. It is, however, interesting to see that newly arrived labor immigrants who were outside the labor market in 2008 achieved better "match" at work and/or education during the financial crisis than corresponding labor immigrants who arrived in the country two years earlier. There might, however, be a selection problem here, due to that many of the 2006-cohort of labor immigrants already had entered a job during 2006 and 2007.

Figure 7. Transition rates from "inactivity" to "activity" statuses by cohorts of labor immigrants who stay settled (stayers) or migrate (movers). Percent



Labor immigrants who moved between labor market regions show much of the same structure between the cohort-groups like none-movers, but transition rates are generally higher among

movers than among stayers. Again there are labor immigrants from the 2004 cohort who consistently achieve the strongest transition to employment and/or in education, though with almost coincidence with the 2008 cohort in the past year. The remaining labor immigrants from the 2006 cohort who stayed outside employment and/or education in 2008 are generally worse off, with low transitions to employment and/or education in the early years of financial crisis, though with a clear improvement towards the end of the period.

We've compiled the results with similar cohorts of refugees (see figure 8). Among the settled there were other differences between the cohort groups than we found among labor immigrants above. Refugees in 2006 which stood outside work and/or education in 2008 represent a larger transition to employment and/or education than the other two cohorts. But the ratio is close to be reverse towards the end of the five-year periods, where the 2006 cohort shows clearly lower transitions to employment and/or education than the 2004- and 2008-cohort. Best off generally were refugees who arrived in the country in 2004 showing a larger transition to employment and/or education than the 2008 cohort except from the first years.

Refugees who move between labor market regions show much of the same structure between cohort groups like the non-movers. Transition rates are with a slight predominance higher among movers than among the settled once the period is considered as a whole, and again there are refugees from 2006 who stood outside the labor market and education in 2008 that achieved the greatest transition to employment and/or education the first two years, for then to lie behind the other two cohorts the last three years of the periods.

Best off generally is also here the 2004 cohort, which shows a larger transition to employment and/or education than the 2008 cohort in the first four years, but slightly lower in the fifth year, which is the financial crisis year of 2009.

Figure 8. Transition rates from “inactivity” to “activity” statuses by cohorts of refugees who stay settled (stayers) or migrate (movers). Percent

Transition from “activity” to “inactivity” statuses:

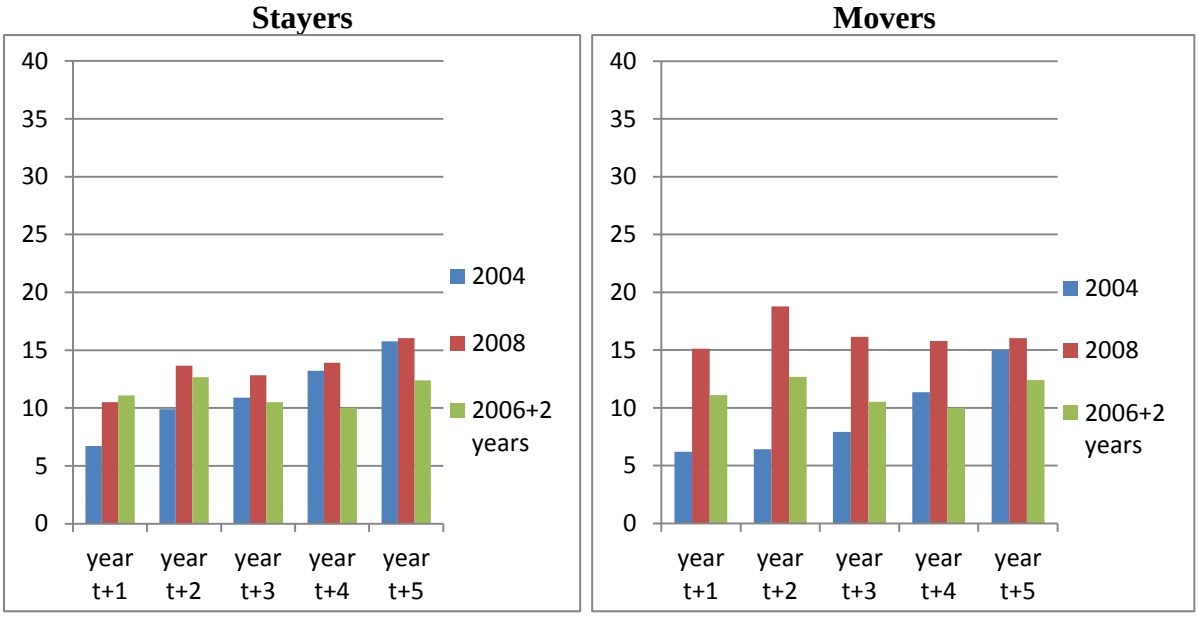
In this section we've put together transition from "active" to "inactive" status groups for the same cohorts of immigrants. Figure 9 shows assemblies for all “active” labor immigrants who

do not move and move through the five-year periods under consideration.

Among labor immigrants who did not move the 2004 cohort showed a slightly lower transition from employment and/or education than the other cohorts the first years, while labor immigrants from the 2006 cohort who were in employment and/or education in 2008 showed the lowest exits from "activity" statuses the last three years of the period. That means that labor immigrants from the 2008 cohort showed the largest shift from "activity" statuses in the period as a whole.

Labor immigrants who moved between labor market regions showed much of the same structure between the cohorts like the non-movers. Transition rates are, however, higher among movers than among stayers. Again there are labor immigrants from the 2004-cohort who achieves the lowest transition from employment and/or education in the early years, while labor immigrants from the 2006 cohort who were registered as employed and/or in education in 2008 were best off in the end of the periods. Otherwise there were movers among the 2008 cohort of labor immigrants who consistently showed the greatest transition from employment and/or education in this period.

Figure 9. Transition rates from "activity" to "inactivity" statuses by cohorts of labor immigrants who stay settled (stayers) or migrate (movers). Percent



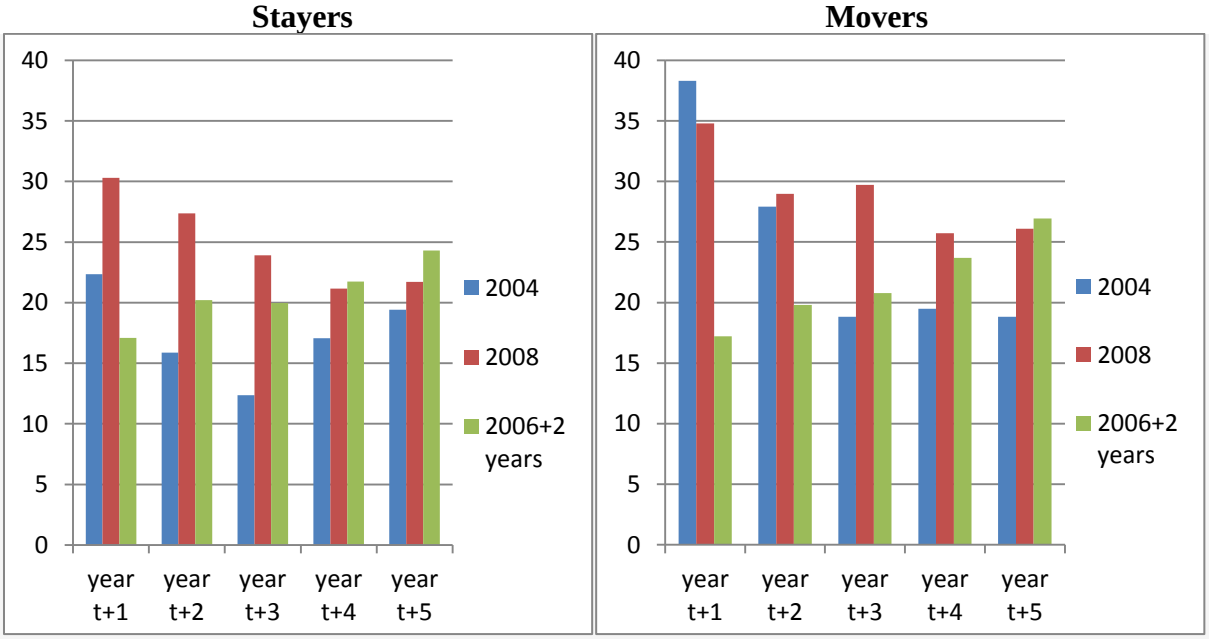
We've compiled the results in similar cohorts of refugees (see Figure 10). Among the settled, there are refugees from the 2006 cohort who were registered as employed and/or education in 2008 that showing clearly the lowest exits from employment and/or education in the first year, while the 2008 cohort draws up transition. There are refugees from the 2004 cohort showing the least transition from employment and/or education for the last four years of the period, while both the 2006-cohort and the 2008-cohort keeps departure from "activity statuses" slightly higher. It is worth noting the clear difference between the 2006 cohort and the 2008 cohort, in which the last words reduce its over nagging from employment and/or education during the period, while the 2006 cohort increases resignation from employment and/or education in the same period 2009-2013. This may indicate that the period of residence has somewhat less significance given that the 2008 cohort at the end retaliate and reduces his retirement from "activity statuses" while the 2006 cohort with two years longer period of

residence increases his retirement from employment and / or education.

Refugees who move between labor market regions show some of the same structure between cohort groups like we find among the non-movers. Transition rates are with certain preponderance higher among movers than among the settled once the period considered as a whole. Refugees from both the 2004 and 2008 cohort show very strong departure from employment and/or education the first two years, for then to level off with a departure below 20 percent for the 2004-cohort. Refugees from 2006 that were employed and/or in education in 2008 shows the lowest exits from employment and/or education in the beginning of the period, but also among the movers increases this group the resignation towards the end, and is in the final year the cohort of refugees with the greatest transition from employment and/or education

The transitions from “inactivity" to "activity" statuses are mainly larger among those who migrate than among those who do not move, while the transitions from "activity" to "in-activity" statuses faces the reverse situation. Immigrants that immigrated due to education and labor seems to be best off in both directions of transitions, while we find refugees and immigrants with unspecified reason for immigration at the other end of the scale.

Figure 10. Transition rates from “activity” to “inactivity” statuses by cohorts of refugees who stay settled (stayers) or migrate (movers). Percent



Summary

The results indicate that immigrants have been an important resource for filling in necessary demand of labour in the regional labour markets. On the other hand the results also indicate a certain replacements of natives by immigrants in many jobs, and that current immigrants replace recent immigrants in many regional labour markets.

The largest flow of immigrants to employment comes directly from abroad, while their main flow out of jobs ends up outside the labor force. This is somewhat surprising considering their option to register as unemployed and thus entitled to receive unemployment benefits.

In spite of regional economic changes due to large petroleum investments, the natives have continued their traditional domestic migration patterns away from the recent growth areas, resulting in weaker relationship between net migration and regional employment, albeit a stronger relationship between immigration and regional employment growth.

Refugees and their families show strong and positive relationship between domestic migration and regional employment change due to clustering with their own groups in central areas, while labour immigrants and immigrants from other Nordic countries show the opposite internal migration trends.

The relationship between gross domestic mobility and regional gross employment transitions are strong and significant, and somewhat stronger among labour immigrant and Nordic immigrants than among refugees and their families.

Domestic migration has to some extent been beneficial for immigrants to obtain employment or to carry out an education. The transitions from “inactivity" to "activity" statuses are mainly larger among those who migrate than among those who do not move, while the transitions from "activity" to "in-activity" statuses faces the reverse situation. Immigrants that immigrated due to education and labor seems to be best off in both directions of transitions, while refugees and immigrants with unspecified reason are at the other end of the scale.

References

Carlsen, F., K. Johansen and L.S. Stambøl (2013): “Effects of regional labour markets on migration flows, by education level”. In *Labour - Review of labour economics and industrial relations.* Vol 27, Issue 1, March 2013, pp 80-92. Wiley – Blackwell.

Stambøl, L.S., N.M. Stølen and T.Åvitsland (1998): «Regional analyses of labour markets and demography - a model based Norwegian example». In *Papers in Regional Science* - The Journal of the RSAI, vol 77, no. 1, 37-62, 1998, Regional Science Association International, Illinois, USA.

Stambøl, L.S. (2005): *Urban and regional labour market mobility in Norway*. Social and economic studies 110. Statistics Norway.

Stambøl, L.S. (2010): "Impacts of Regional Labour Market Changes on Migration Trends - Research Examples from Norway". In Huskey, L. and C. Southcott (red.): *"Migration in the Circumpolar North"*. Canadian Circumpolar Institute Press in cooperation with the University of the Arctic. pp. 93-116.