

# **Economic Renewal and Demographic Change**

An evaluation of local labour market performance in the  
Nordic countries

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Nordregio 2004

First published in 2004 by Nordregio.  
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Economic Renewal and Demographic Change: An evaluation of local labour market performance in the Nordic countries. Editor Lars Olof Persson  
.Stockholm: Nordregio 2004 (Nordregio Report 2004:8)

ISSN 1403-2503  
ISBN 91-89332-46-6

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takes place among the countries of Denmark, Finland, Iceland, Norway and Sweden, as well as the autonomous territories of the Faroe Islands, Greenland and Åland.

**The Nordic Council**

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Stockholm, Sweden  
2004

## **Preface**

This report is a comparative study of economic renewal and demographic change on local labour markets in Nordic countries. Senior research fellow Lars Olof Persson at Nordregio has coordinated the project team consisting of researchers from Institute of Migration (Turku, Finland), Swedish Institute for Growth Policy Studies (Stockholm), University of Akureyri (Iceland), Institute for Border Studies (Aabenraa, Denmark) and Statistics Norway (Oslo). At Nordregio, research fellow Tomas Hanell, research fellow Jörg Neubauer and research assistants Moa Tunström and Fredrik Nyman have contributed to data collection, processing and map-making.

The project is part of the second phase of the Nordic research programme *Future Challenges and Institutional Preconditions for Regional Development Policy*. The programme was commissioned by the Nordic Council of Ministers / Nordic Senior Officials Committee for Regional Policy (NERP). The pilot phase of the project was reported in 2000. The first phase of the programme (2000-2002) was reported through eight published studies in 2002. The reports from six separate projects in the second phase (2003-2004) of the programme will be published successively through the autumn of 2004 together with a summary of the programme.

Nordregio wishes to thank the project team as well as the members of the Programme Steering Committee: Bue Nielsen (Denmark), Janne Antikainen (Finland), Kristin Nakken (Norway), Nicklas Liss-Larsson (Sweden), Kjartan Kristiansen (Faroe Islands), Bjarne Lindström (Åland Islands) and Hallgeir Aalbu (Nordregio).

Stockholm, January 2005



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## **1. Introduction**

Regional imbalances caused by and effecting demographic change are unevenly spread across the Nordic countries. A common emergent problem here is that of a future labour shortage, something which has already been experienced in certain sectors and in particular regions, and something that is forecast on a much broader scale in future. Moreover, the common characteristics of an ageing labour force, such as increasing rates of sickness leave, have important side effects, from a social and economic perspective, on the communities they blight. The differences in fertility rates between in particular Sweden, Finland and Denmark on the one hand, and Iceland and Norway on the other are complexly interrelated to differing economic performance levels and to national institutional structures. The sustainability, in economic and social terms, of several labour markets is thus increasingly challenged as population decline continues.

The national institutional frameworks – within the overlapping and sometimes contradictory policy sectors of ‘regional policy’ in the widest sense of the term – used to address these and other problems relating to economic renewal and demographic change are basically quite similar across the Nordic countries, though differences in some important details remain (Lähteenmäki-Smith & Persson, 2002). Our basic hypothesis is therefore, that the spatial pattern of local labour market performance is similar across all Nordic countries, even if the actual performance of the national economy is decisive for the level of employment in the respective country. However, we will also discuss whether the different portfolios of policy measures in Denmark, Sweden, Iceland, Norway and Finland are reflected in the differing performance levels of local labour markets of similar economic structure and size. In conclusion, and as a result of the comparative analysis, the report aims to suggest a number of improvements with regard to the institutional pre-conditions for regional development policy in the Nordic countries.

### ***Sustainable local labour markets***

*Well functioning and sustainable local labour markets* have been introduced as an objective for regional development policy in Norden. An efficient labour market – i.e. one with the optimal economic use of human, social and cultural capital – is both a primary motor for sustainable economic growth and a basis for individual and social careers in the widest sense. Moreover, though the labour market in a political sense is becoming international, its spatial characteristics remain locally

anchored (Nygren & Persson 2001)<sup>1</sup>. As such, we can see that there are forces at work here in several crosscutting directions.

On the *labour demand* side, dealing with the care of an ageing population and providing other local services requires the adequate local supply of a committed labour force, at the same time as successive new generations of ICT and global 'hi-tech' industrial networks themselves diffuse the physical concept of a work-place and require only the most specialized labour with up-to-date training. There are conflicting and complementary theories explaining the location of workplaces in the new economy – from traditional agglomeration and more recent cluster theories, to theories of 'indifference'. The latter meaning that new economic activity – i.e. corporations – are increasingly independent of any place-specific characteristics and that regional growth is to a large degree a matter of coincidence (Curran & Blackburn 1994)<sup>2</sup>. Accordingly, different strategies come to be stressed in territorially based industrial and innovation policy.

Some labour markets are facing the problems of high rates of unemployment and shortages of labour at the same time. In spite of significant input from labour market policy and training programmes, matching processes still do not function efficiently enough. Indeed, due to specialization and to rapid structural change, matching processes are becoming more complex.

### ***Emerging challenges to labour market efficiency***

There are currently a number of challenges to the efficient functioning of local labour markets in Norden:

- Demographic change, low fertility rates and an ageing population eventually reduces the labour supply in most regions, and this is particularly the case in regions that have experienced a continuous negative net migration over a number of decades. In several of these labour market areas, the majority of the local labour force works in public health care and social services, leaving other private industries with a decreasing pool of skilled labour to recruit from.
- The wide diversity in size and demographic trends between local labour markets in Norden is a major challenge to policy-

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<sup>1</sup> Nygren, O. & Persson, L.O., (2001), Det enkelriktade Sverige. Tjänstesektorn och den framtida regionala befolkningsutvecklingen. TCO. Stockholm

<sup>2</sup> Curran, J. & Blackburn, R. (1994) Small firms and local economic networks – The death of the local economy? London. Paul Chapman Publishing.

making at the national level, since it is evident that ‘One size – Fits all’ is not applicable. In Denmark about 30 percent of the LLMs count less than 100,000 jobs each, in Norway and Sweden approximately 20 percent, and in Finland 50 percent. The national definitions of local labour markets are not harmonized.

- The propensity to temporarily or permanently leave working life due to sickness has increased in some countries in Norden. National numbers vary considerably – with from 4-4.5 percent of the workforce being on sickness leave in Sweden and Norway, via 2.2 percent in Finland to only 1.5 percent in Denmark (Dagens Industri 2002-09-09). Regional variation within countries is moreover larger still, though a comprehensive explanation of this phenomenon remains elusive. Undoubtedly however the overall ageing of the labour force does contribute to the increased incidence of illness.
- Rapid structural change is taking place in a wide variety of labour markets, due to relocation decisions concerning within multinational firms, as well as in, until recently, the highly competitive new industries. As an example here we could note that while in 2001 only one percent of system engineers in Sweden were registered as being unemployed, one year later the figure had increased to nine percent.
- Exclusion from working-life is relatively frequent in most countries among those who were born abroad, in particular those born outside Europe. Moreover, there is a general concentration of those with loose links to the formal labour market to the metropolitan regions, in spite of the fact that overall labour demand is higher in these regions than elsewhere.
- There remains a division of the labour market according to gender, where attitudes among employers and employees change slowly, and at different rates in different regions. As an example, we can see that in most small municipalities in Northern Scandinavia there is an increasing demand for labour in the social care sector, while at the same time high unemployment is still reported among males. This dual labour market by gender is initially reinforced by young people’s choices in secondary school. Gender roles also contribute to

different behaviour vis-à-vis family life. As an example, according to a recent survey among young people in Sweden, 21 percent of male academics plan to take more than one year of parental leave, while 40 percent of female academics intend to do so.

The institutional frameworks – trans-national, national and local – needed to cope with these challenges are not fully developed. Obviously, the challenges cannot be successfully met only within the framework of traditional employment or labour market policy. At the EU level, employment policy aims to increase employment frequency from 60 percent to 70 percent by 2010. In some Nordic countries, e.g. in Sweden, the employment goal is higher, being set at 80 percent. However, the instruments used to promote these objectives are not particularly sensitive to the wide variations to be found across Europe and even within countries themselves in terms of labour market conditions. In addition, and in accordance with our view of the complex transitional labour market, it is doubtful whether aggregate employment frequency is any longer an appropriate indicator of labour market performance. There is then a need to develop a more appropriate set of indicators as regards local labour market performance, which could be used to develop selective policy measures fitting into the various local settings.

In short, we are attempting to analyse the institutional and structural frameworks that encourage regional employment growth by the expansion of new industry, while at the same time coping with the contemporary demographic changes that lead to a shrinking work force and an ever-increasing demand for social services.

The wide variation in size and structure between local labour markets within the Nordic countries is of major importance in explaining the aggregate performance of the national labour market. Hence we base the analysis on a common typology of LLMs across Norden, allowing us to evaluate performance by means of a benchmarking approach.

### ***A career approach***

On the labour supply side, the *transitional*<sup>3</sup> characteristics of the labour market should now be seen more as the rule than as the exception. Each

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<sup>3</sup> The concept was launched by Günther Schmid in 'Enhancing gender equality by transitional labour markets' Paris: OECD 1998 WP 6:80 and elaborated by van der Laan, L., 2001, *Knowledge economies and transitional labour markets: new regional growth engines*. Unpublished paper. Rotterdam School of Economics, Erasmus University.

transition or career – such as those from school to job and vice versa, from parental or sick leave to job, from unemployment to job, etc – can be temporary and repetitious. Transitions can happen during the week, the month or year, and inevitably several times over the individual lifecycle. There are a number of theories explaining this increasingly transitional labour force behaviour stressing the individual choice of life-style, and life chances or careers perceived in different places. There are also theories stressing the importance of social capital, and whether it should be considered as a local or a global asset. Supply side oriented labour market policy is, slowly, adapting to the differing ‘tastes’ of individuals and life-style groups. Transition itself is also enforced by policy intervention to encourage temporary leave for life-long learning periods and parental leave. This transition can thus be viewed as a supplementary dimension to that usually described as labour mobility, i.e. qualification or de-qualification careers, inter-industry mobility and inter-regional or international migration. The theory of the transitional labour market explains labour market performance more as a response to the aggregates of individual careers than as collective demand/supply matching processes guided by wage signals.

Most transitions take place within the limits of the commuter catchment area. As a tentative definition of a well functioning local labour market, we use: *a region where most transitions to and from gainful economic activity and reproductive activities are voluntary, involve low risks and offer a set of choices for the individual.*

In this project, labour market performance is defined as a *dynamic* concept: the ability of the LLM.

- To adapt to, and facilitate, structural change in the local economy by activating all educational segments of labour.
- To increase the input of human capital investments.
- To reduce sick leave and increase reactivation rates.

The segmented structure of the labour markets according to formal qualification will be inherent in the analysis. By means of this *career approach* we are able to describe to what extent, and where, labour in different pools or status groups, and at different levels of education, is *activated or deactivated*. Activation rates are measured as the change in status to employment from year  $t$  to year  $t+1$ . Correspondingly, deactivation is seen as changes in status from employment year  $t$  to year  $t+1$ . A note on the methodology used appears in Appendix 1.

Given that we have undertaken an empirical approach to describing and analysing the impact of knowledge and human capital input on a

regional economy, we need an *operational definition of the knowledge embodied in labour*. Thus in the empirical analysis based on official register data we are left with a definition based on the level of formal education of each individual.

The following major *statuses* (year  $t$  and year  $t+1$ ) are defined and dealt with in this analysis: Employed (wage labour or self employed), Pension/not employed, Studies, Unemployed. In some applications, where data is available we also analyse flows to and from additional: Sick leave and emigrated/immigrated.

### The transitional labour market

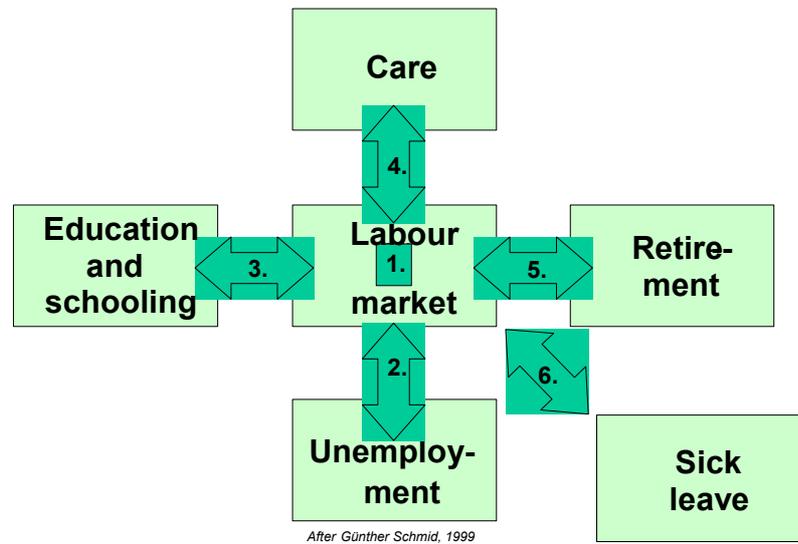


Figure 1: The transitional labour market with flows of 'individual careers' to and from employment occurring during one year. (Source: After Schmid 1998)

In this report, we will:

- Compare the *current spatial pattern of economic renewal and demographic change* in all Nordic municipalities and local labour markets (LLMs) during the last part of the 1990s. This is done with maps and graphs based on official population and employment statistics.

- Develop dynamic *indicators of performance for local labour markets*<sup>4</sup>. The supply side is described as the annual input of ‘new’ labour in terms of education and age, adding to the population already at work. The demand side is described in approximately ten major sectors: with a detailed specification of ‘new’ industries<sup>5</sup>.
- Evaluate in detail the *spatial variation in LLM performance within one Nordic country*, with Norway being used here as a benchmark as it is currently among the best performing national labour market.
- Against this benchmark, we then pursue a *comparative analysis of labour market performance* over time in a selection of regions with similar structures in the Nordic countries. The comparison is based on a *common typology of seven typical Nordic labour markets*.
- Discuss the *impact of institutional frameworks* in the respective countries on differing labour market performance. In particular national differences in social, labour market and higher education policy and its implementation will be discussed.
- To conclude, and as a result of the comparative analysis, the project aims to suggest *improvements in policies aiming at well functioning labour markets* across the Nordic countries.

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<sup>4</sup> These dataset available in Sweden, Finland, Denmark and Norway contain information on each individual in working age on his/her employment status – as described in Appendix 1 – in consecutive year. The data set for Iceland covers traditional employment indicators.

<sup>5</sup> In the empirical analysis, industrial sectors (at low NACE level), which are currently expanding in terms of employment at the European level, are classified as ‘new’ industries.

## 2. Nordic employment policy

From a wider international perspective we can say with some certainty that a 'Nordic model' as regards labour market policy, social policy and educational policy does indeed exist, with the distinctive character of this model being its dual commitment to high public spending and a strong public sector. There are however small but important differences between the Nordic countries in this regard. The purpose of the following sections is then to analyse such similarities and differences across the wider Nordic area.

The systems for *parental leave* for instance are somewhat different across the Nordic countries with the most generous period being allowed in Sweden, at one year and four months, while the shortest periods are to be found in Iceland and Finland, at nine to ten months respectively. National differences also exist with regard to the ability of mothers and fathers to share the leave period. The Icelandic system in this regard is the first gender equal system, with three months each for the mother and the father, and three months that can be allocated freely. In all countries a large part of the leave time can be allocated freely between mother and father, but the tendency is still that the mother takes the major part of the leave time allotted. The reasons for this are based in the system of gender relations as a whole and are therefore beyond the scope of this study. A summary of the parental leave systems in the Nordic countries is given in Table 1.

In the area of *sickness benefit* we find the greatest differences between the Nordic countries in labour market policy. Firstly, the length of the sickness leave is one year in every country except Sweden, where there is no limit. This difference provokes two comments. It may be that in reality there is 'no limit' in the Swedish system only in a statistical sense, and that after one year the sick are transferred to another category, i.e. to early retirement for example. Another aspect here is that a limited period of sick leave acts as an important push factor, pushing people back into employment, and that the Swedish system lacks this kind of push factor. Second, the benefit amount varies between countries. Only in Norway is benefit calculated at 100 percent of salary for up to one year, though the same is also the case for many groups in the Danish labour market. In Sweden, compensation is about 80 percent of previous salary. In Finland and Iceland, the amount of benefit paid varies depending upon collectively bargained contracts. Thirdly, only in Sweden is there a one-day qualifying period for sickness benefits. Finally, employer responsibility varies quite widely. In Sweden, employers are responsible for initiating activities ensuring a healthy working life, rehabilitation etc., and for

paying sick pay for the first 21 days of sickness (apart from the first day, which is not paid). In Iceland, employers pay sick pay for one to three months. Public sickness pay benefits are however extremely low, thus resulting in private solutions being sought to a significant degree. In Denmark, employers pay for a longer period, but they may get parts of the expenses reimbursed from the state/municipalities, while in Finland the employer pays until the 9<sup>th</sup> day of sickness. If such an allowance is not paid to the employee it is instead paid to the employer, as a reimbursement for the salary paid to the sick employee. A summary of the sickness benefit system in the Nordic countries is given in Table 1.

We can thus see, formally at least with regard to *unemployment support*, that the Nordic systems are similar in structure but different in detail. Unemployment benefits are given to unemployed individuals, who are registered as unemployed, of working age and who have been employed for a certain period prior to unemployment. There exist also, in most cases, unemployment benefits for those with no prior employment. In all Nordic countries apart from Iceland, the unemployment allowance is based on previous income, with the highest percentage being in Denmark (70-80 percent) and the lowest in Finland (with a minimum level around 50 percent). The maximum period is also different ranging from 300 days to five years.

*The pension systems* in the Nordic countries are rather similar in structure. There is a guaranteed pension for those with no or low incomes, and there is an income based pension which is the most significant part of the paid amount. In Denmark, Sweden, Iceland and Finland there are also pension savings in funds and incentives to save for private pensions. The retirement age is different across each country, and is between 61 and 68 (from 2005). However, the tendency here is towards more flexibility in the system, so that a longer working period equals a higher pension. In Sweden it is possible to retire from 61 years of age, in Finland at 62 (from 2005), in Denmark at 65 (if entitled to early retirement then at 60) and in Norway and Iceland at 67.

Table 1: The main characteristics of employment policy in the Nordic countries

	<b>Denmark</b>	<b>Finland</b>	<b>Iceland</b>	<b>Norway</b>	<b>Sweden</b>
<b>Parental leave – length</b>	52 weeks. Possible to prolong with lower compensation	Parents are entitled to parental allowance either to the father or the mother for 158 weekdays (plus additionally 60 days for additional child)	3 months for each parent, not transferable, plus 3 months with transferable leave	42/52 weeks	Maximum 480 days
<b>Parental leave – payment level</b>	A public compensation paid to parents if they are not entitled to full wages from their employer. This differs across employers/sectors	Based on previous income. Basic subsidy common to all is 11.45€ per day	80% of salary in the previous 12 months. A child birth grant for students and those outside the labour market	Full pay, that is the same level as sick pay for 42 weeks or 80% of sick pay for 52 weeks	150 SEK a day is the guaranteed level. Otherwise 80% of the income from the previous year/365, apart from 90 days when payment is 60/SEK per day
<b>Sickness benefit – length</b>	52 weeks within 18 months	52 weeks within two years	52 weeks within two years	52 weeks within three years	No time limit
<b>Sickness payment level</b>	Minimum for the employer to pay sickness benefit for 2-5 weeks. If the em-	The employer pays full pay for the first 9 days for those who have worked longer	Employers pay full pay up to 1-3 months (up to a year for state employees). Thereaf-	The employers pay 100% of pension basing income for the first 16 days.	Ca. 80% of full pay.

	ployer does not pay for the whole period, the municipality and the state pay	than 1 month, otherwise 50% of the full pay. Thereafter the benefit is paid by the National Social Insurance	ter the public social system pay sickness benefit which is paid at a flat rate	Thereafter benefits are paid through the National Social Insurance system	
<b>Unemployment benefit length</b>	4 years	500 days	5 years	1-2 years (earnings related)	300-450 days
<b>Unemployment payment level</b>	90% of full pay with a maximum limit	23.16€ a day. Earnings-related daily allowance: 45% until 2.084,40€ and 20% of the remainder. Increased earnings-related component: 55% until 2.084,40€ and 32.5% of the remainder.	29 € a day	62.4 % of full pay, for annual income up to 42 400€	80 % of full pay max 80€ a day 100 first days
<b>Pensionable age</b>	60-67 years	65 years (62-68 from 2005)	65-67 years	67 years	From 61 years. The guaranteed pension is from 65 years
<b>Pension system</b>	<i>Basic pension:</i> For Danish citizens 67 years and older (65	<i>Employment pension:</i> Depends on the amount of earnings	<i>Public basic pension with two components:</i> basic pension	<i>Basic pension:</i> the maximum level is 54,170 NOK, 80% if	The pension is based on income (work, higher education,

	<p>from July 1<sup>st</sup> 2004).  <i>Early retirement:</i> for those 60-65 years, members of unemployment insurance scheme and paid a pension scheme contribution for 25 years of the last 30 year of working life. <i>Condition early retirement:</i> for those with reduced ability to work (requirements: Danish citizenship, 18 years or older, resident in Denmark for minimum 3 years between 15-67).</p>	<p>and length of employment after the age of 23. Earnings are determined on the basis of ones pay during the last 10 years in each employment. For the self-employed or temporarily employed, overall career earnings are used as the basis. The total sum of pension is 60/66% of the highest previous earnings.</p>	<p>and income supplement. The supplement is income-tested and the basic amount is partly income-tested. The public pension is a modest sum but is universal in nature. <i>Mandatory and fully funded occupational pension system</i> (60-80% of former salary). <i>Voluntary individual pension accounts.</i></p>	<p>a married couple are both retired. <i>Additional pension:</i> The amount is based on working years, the maximum reach after 40 years of working. This pension is for those with a yearly income above the basic income. <i>Special addition:</i> For those with only a small additional pension. The maximum amount reached after 40 years of membership in the National Social Insurance. The amount is ca. 80% of the basic amount.</p>	<p>unemployment benefit, parental/ sick benefits) from 16 years of age. <i>Income based pension:</i> the main part. <i>Premium pension:</i> 2.5% of the pension-based income is placed in stocks and bonds. <i>Basic pension (guarantee pension):</i> for those with a low or no income, immigrants etc. Different rules apply, depending upon years in Sweden, other social insurance etc.</p>
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In all Nordic countries, with the exception of Iceland, the public sector takes more responsibility for increasing the competencies of those in the labour market (especially the elderly). There is also now a discernable tendency towards changing the pension system in order to increase the incentives for the elderly to remain in the labour market for a longer period of time. In Norway there is a lower employer fee for older employees, while in Sweden, employers receive subsidies for hiring older employees. The Swedish pension system is the one among the Nordic systems with the strongest incentives for employees to remain in the labour market in spite of the fact that they have reached retirement age.

To summarize then, the Nordic employment policy systems are rather extensive if one holds them up to international comparison, covering as they do most aspects of adult life, such as sickness, unemployment, childbirth, and retirement. Consequently, they encourage transitions from sickness, unemployment and childbirth to work, and vice versa. Moreover, these systems also support senior workers who want to retire from work.

### 3. The spatial characteristics of demographic change within the Nordic countries

#### *National labour market performance*

In this report we focus on labour market performance, as access to employment is the key to social cohesion, as employment, in most cases, determinates whether people are able to enjoy a decent standard of living and contribute fully to the society in which they live (European Commission, 2004). In this section we will examine both the employment and unemployment rates, in addition to the issue of transition, both in Europe in general, and in the Nordic countries in particular.

According to Figure 2, the employment rate in the Nordic countries is quite high, and is consistent with the Lisbon target of 70 percent for 2010. In 2002, Denmark had an employment rate of 75.9 percent, Finland 68.1 percent and Sweden 73.6 percent (European Commission, 2004), while the non-EU member countries Norway and Iceland had even higher employment rates. The employment rate in Iceland in 2001 was 84.6 percent<sup>6</sup>, the highest in Europe, while the rate for Norway was 80.3 percent (Statistics Iceland, 2004a).

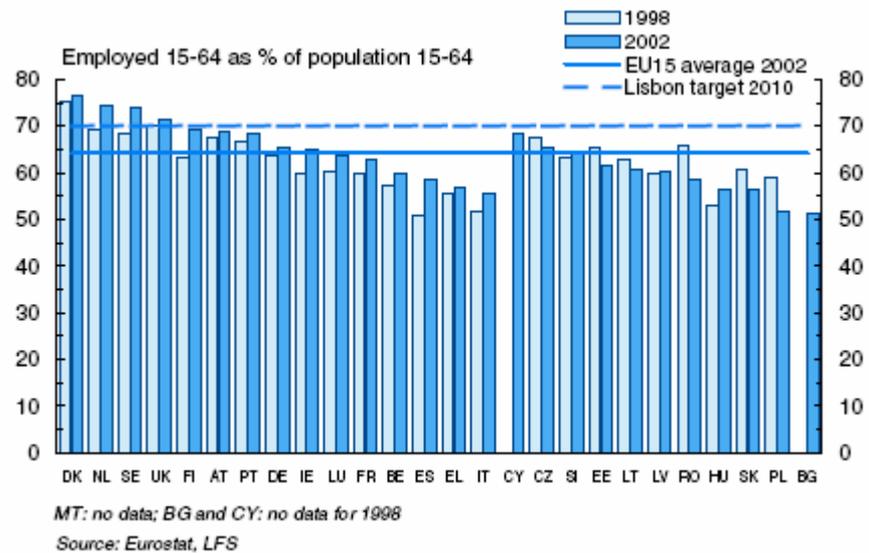


Figure 2: Employment rates in the EU, 1998 and 2002

<sup>6</sup> Age 16-74.

The Nordic national labour markets are open to labour movement, though such developments differ across the various Nordic states. Labour markets remain then to a significant degree, national entities. Regional employment and unemployment vary firstly by country and secondly between regions. This implies that the institutional context influences such developments, primarily on the national, but to a degree also on the regional, level. Changing employment patterns – reduced unemployment at the national or regional level, increased economic development (measured for example in GDP or regional GDP) etc. can be seen as signs of economic renewal, as can the increasing mobility of labour. Whether this economic renewal is positive or negative (for the region, for the businesses, for the individual etc.) can of course be debated, though it is certainly now felt that renewal is necessary in order to sustain region/labour markets, with renewal here implying, a renewed industrial structure, new employers, rising education levels and a younger labour force.

Regarding the constitution of the whole labour force in the Nordic countries, statistics presented in *Social Protection in the Nordic Countries 2001* show that in 2001 Finland and Sweden had the highest population shares outside of the labour force (26 and 22 percent respectively, see table on page 24 in this report). In all countries there were more women than men in non-employment – ranging from 15 percent in Iceland to 28 percent in Finland. Iceland had the highest share of those employed, and also the highest share of part-time employed (both among men and women).

### ***Differing levels of employment and unemployment***

Unemployment rates vary greatly among the Nordic countries (Figure 3). In Denmark and Norway, the most severe unemployment rates were faced in the early years of the 1990s, whereas in Finland, Iceland and Sweden the prospects were bleakest in the mid-1990s. Moreover, the unemployment rate for Finland can be distinguished from the others in that it remains high.

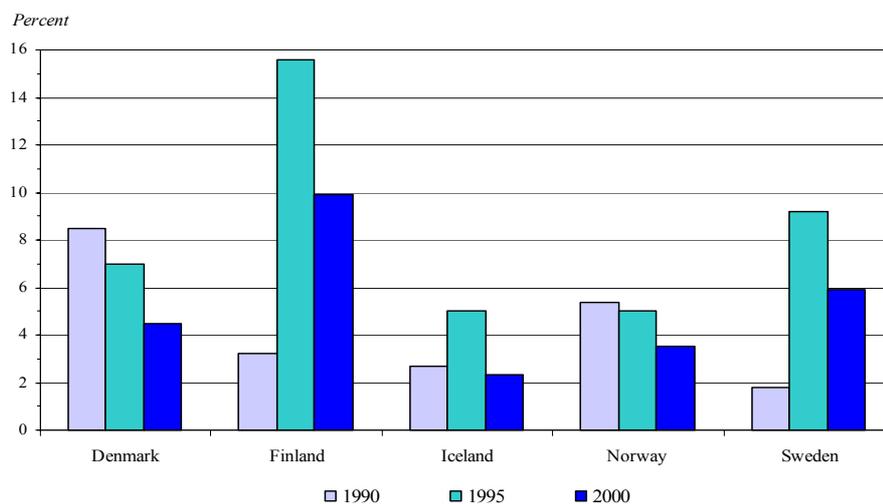


Figure 3: Unemployment rates of 15-64-years-olds in the Nordic countries  
 (Note: Iceland 1991 data instead of 1990)  
 (Data source: OECD 2003)

In addition, Finland has experienced severe problems in restoring its employment ratio to the pre-economic recession levels of the early 1990s (Figure 3). In the new government programme a 75 percent target level for the employment ratio has been proposed (Valtioneuvoston kanslia 2003). Furthermore, according to the Labour force 2020-report, it has been estimated that full employment is possible to reach with a 70 percent employment ratio (Turun Sanomat 2002).

The largest differences between male and female employment rates are to be found in Denmark (9 percentage units), the smallest gap is found in Sweden (3 percentage units). Finland has the largest proportion of the labour force outside formal employment (35 percent), while the corresponding figure is approximately 27-28 percent in Sweden, Denmark and Norway. Iceland is unique in that only 17 percent are outside formal employment there (in 2001).

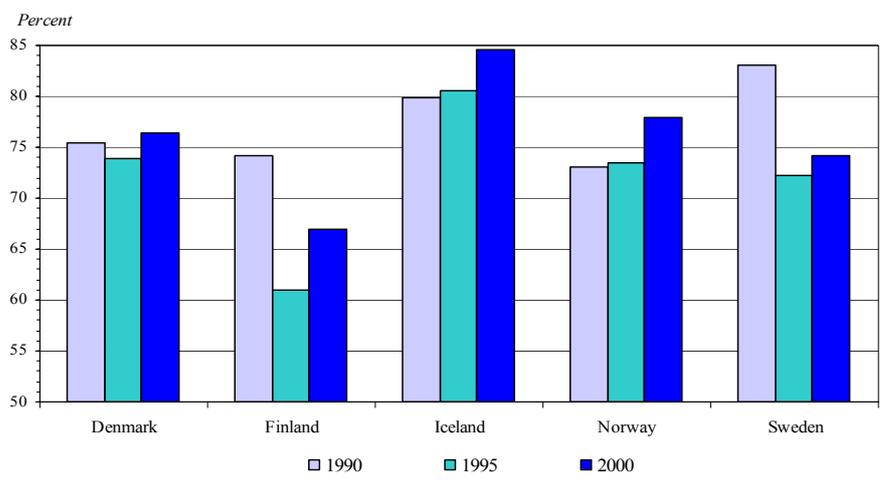


Figure 4: Employment ratio of 15-64 years old 1990-2000. Iceland 1991 instead of 1990.  
 ( Source: OECD 2003)

Table 2: The population 16-64 years, by gender and activity

	Denmark	Finland <sup>1)</sup>	Iceland	Norway	Sweden
<i>Men</i>					
Men aged					
16-64 years (1 000)	1 772	1 754	90	1 466	2 861
<i>Of whom (per cent):</i>					
Employed, total	81	70	90	81	77
- Full-time	74	65	80	72	70
- Part-time	7	5	10	9	7
Unemployed	4	7	2	3	4
Outside of the labour force	15	23	8	16	20
Total	100	100	100	100	100
<i>Women</i>					
Women aged					
16-64 years (1 000)	1 735	1 717	87	1 420	2 771
<i>Of whom (per cent):</i>					
Employed, total	72	65	83	74	74
- Full-time	50	55	47	43	48
- Part-time	22	11	36	31	25
Unemployed	4	7	2	3	3
Outside of the labour force	24	28	15	24	24
Total	100	100	100	100	100
<i>Men and women</i>					
Men and women aged					
16-64 years (1 000)	3 507	3 471	176	2 887	5 632
<i>Of whom (per cent):</i>					
Employed, total	77	68	87	78	75
- Full-time	62	60	64	58	59
- Part-time	15	8	23	20	16
Unemployed	4	7	2	3	3
Outside of the labour force	19	26	12	20	22
Total	100	100	100	100	100

1 Population aged 15-64 years.

(Source: Social Protection in the Nordic Countries 2001)

### ***The regional distribution of employment and non-employment***

A central development characteristic of the Nordic countries is related to the regional distribution of employment and unemployment. The national employment trajectories and the regional spread in unemployment 2001 are shown in Figures 5 and 6. The situation is in many cases worse in the sparsely populated and peripheral parts. Except for these outlying areas, with extreme unemployment, it appears that unemployment rates are within the range of +/- 2 percentage units in all countries except Finland. This could be seen as a result of the 'working-line' in labour market policy, aimed at reducing unemployment in all regions. Regions where employment increased during the 1990s are in general regions where the renewal of the labour market structure is more developed, in the sense that the ICT sector, knowledge intensive businesses and educational institutions have already been established. The out-migration areas and the ones with more manufacturing and nature resource based industries, and

these are the areas where the economic renewal of the old industrial structure and of the labour markets has been slowest.

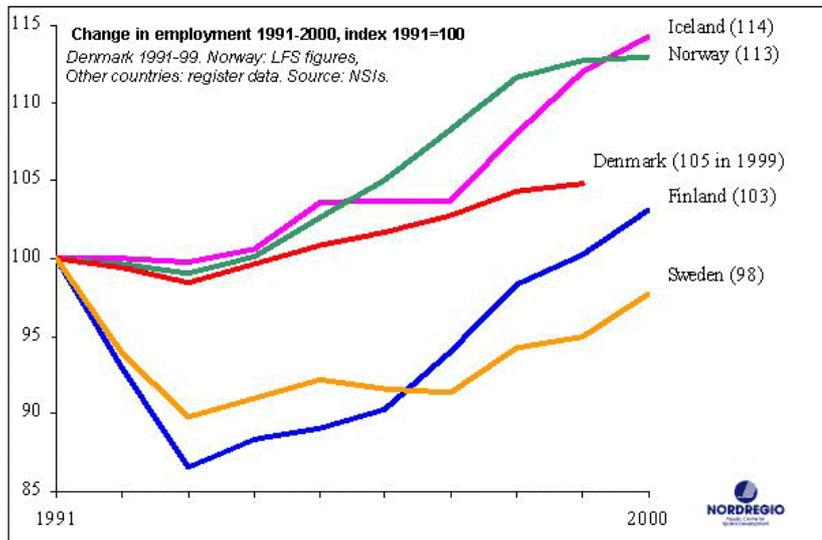


Figure 5: Changes in employment in the Nordic countries 1991-1999/2000. (Source: Nordregio)

During the latter half of the 1990s, the level of development on the Swedish labour market was, in a Nordic comparison, the most negative. On a local level however such developments tend to be spread more evenly across the Nordic territory, varying considerably within regions. The situation in Finland was most negative in the inland areas, and particularly in the areas bordering with Russia. In this sense, Finland is a divided country, with increased employment in the southwest, while decreases continue to occur mainly in the east. The obvious background to this development is the fall of the Soviet Union, which was hitherto an important export market for Finland on the one hand, coupled with the development of the Finnish IT sector, with its activities mainly located along the coast, on the other.

Regional spread of unemployment rate  
in Nordic regions 2001

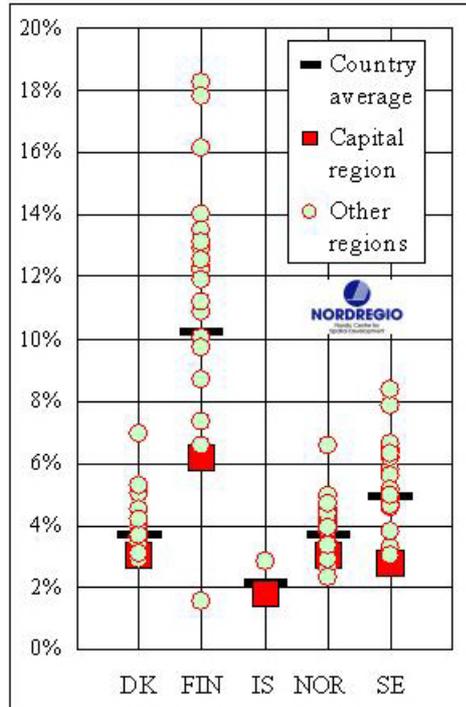


Figure 6: The regional spread of the unemployment rate in the Nordic regions 2001

(Source: Nordregio )

In Sweden, employment decreased in around half of the country's municipalities. The positive 'spots' on the Swedish map are in general the urban areas and the medium sized towns with higher education institutions. In Norway, employment decreased during the 1994-1999 period in about ¼ of all municipalities. In Denmark, the employment change during the late 1990s was in general positive, with the exception of some outlying islands and the more peripheral parts of Jutland. It is however decisive that the regional labour markets are so much smaller in Denmark. Iceland is a special case since the main segment of the population lives in the capital region, while labour market statistics are only registered on this rough level. The labour markets in the rest of the country are very small. Very generally, the map gives the impression that capital re-

gions, coastal regions and university regions were the ‘winners’ between 1994-2001 regarding employment.

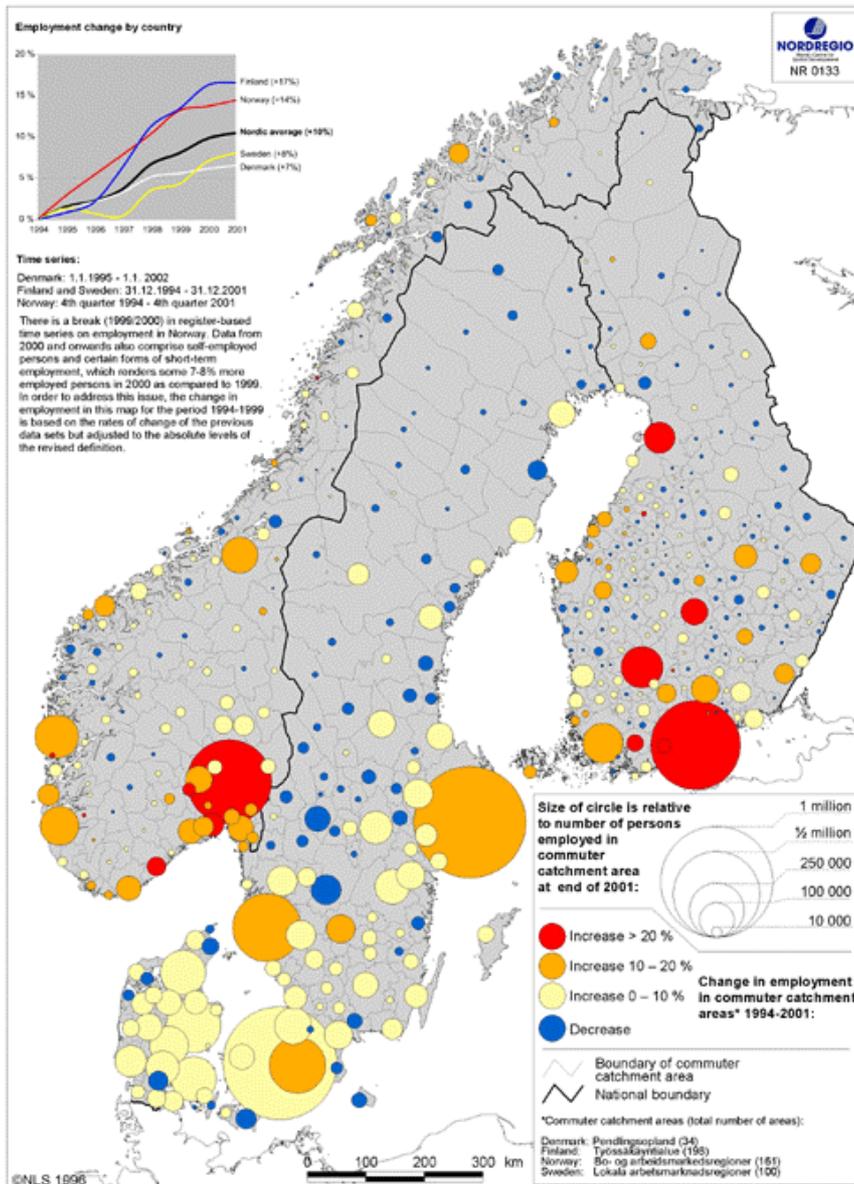


Figure 7: Change in employment 1994-2001. Commuter catchment areas. (Source: Nordregio)

A numerical representation of the range of variation *within* countries appears in Table 3.

*Table 3: LLMs with the highest and lowest employment and unemployment rates in Nordic LLMs (Age groups 16-64 years)*

	<i>Finland</i>	<i>Denmark</i>	<i>Iceland</i>	<i>Norway</i>	<i>Sweden</i>
<i>Highest employment rate</i>	77,6	79,9	86,4	81,9	81,1
Unemployment low	1,9	2,4	1,2	1,3	1,3
<i>Lowest employment rate</i>	49,2	59,8	86,1	69,3	51,1
Unemployment high	18,9	6,2	1,4	6,4	6,6

From Table 3 we can see that the employment rate varies significantly between the best and worst performing LLMs in the Nordic countries, except in Iceland, where employment and unemployment are both independent of location.<sup>7</sup> In Finland the difference between the highest and lowest employment rates is 28.4 percentage points, 20.1 percentage points in Denmark, 18 percentage points in Norway, and as much as 30 percentage points in Sweden. This is despite the fact that all of these countries are committed to advanced employment policies. Unemployment rates vary greatly between LLMs within Finland, moderately within Norway and Sweden, but very little in Denmark and Iceland.

### ***Employment and population ageing***

Although the population of the Nordic countries is ageing, the number of people belonging to the working age group is still high compared to the aggregated age groups of children and people of 65 years and over. The share of the working age group is over two thirds of the whole population. Thus, the age structure of the population is still good from the demographic dependency ratio point of view. When comparing the age distribution in different Nordic countries, it can be pointed out that the share of working-age population (15-64-years olds) is almost the same in every Nordic country (Figure 8). However, some notable differences between the countries exist when we take a closer look at the shares of chil-

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<sup>7</sup> One reason for the low variance in Iceland may be due to the fact that their labour market statistics only permit analysis between the capital area and other areas.

dren and elderly people. In Iceland the share of children (under 15-years-olds) is well over 20 percent and is therefore the highest among the Nordic countries. In addition, the share of elderly people (65-years-olds and over) is lowest in Iceland, which has only 11.6 percent, while in Sweden the share of elderly people is greatest with 17.2 percent.

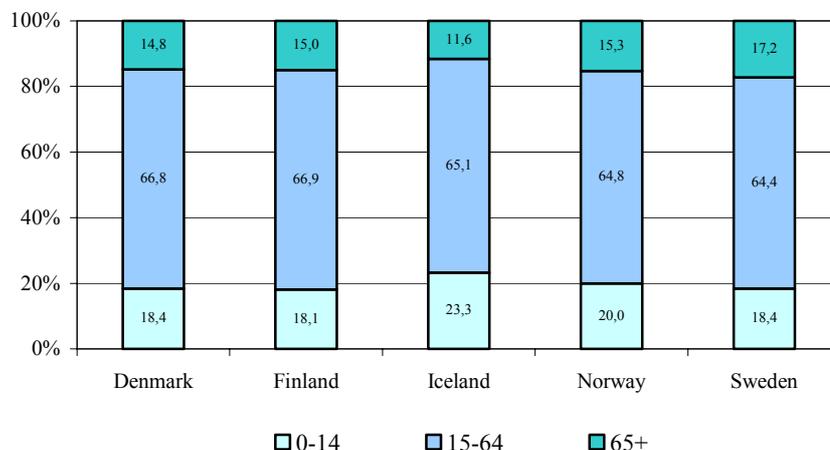


Figure 8: Population by age groups as a percentage of the total population in the Nordic countries in 2000  
(Data source: Nordic statistical offices 2003)

The ageing of the population structure is essentially affected by the significant decrease in fertility. Immediately after World War II, fertility for example in Finland rose to an exceptional peak, producing the post-war ‘baby-boom generation’. Since then, fertility has decreased, and as a consequence the elderly population has more than doubled in number over the past 40 years. Nowadays, Finland is one of the ‘leaders’ in terms of population ageing in Europe (Karjalainen 1993; Parkkinen 2001).

As with many other countries, Finland faces tremendous challenges in the fields of population and social policy. The diminishing age groups will not, especially in the future, be able to meet the increasing demands for labour. Deep-seated changes will thus be required in the operation of both the public and private sectors when the baby-boom generations retire. The questions associated with their sustenance, health care and housing will thus pose a significant challenge. As fertility decreases, the diminishing working population will have to provide the services required for the growing population, as such, it has been estimated

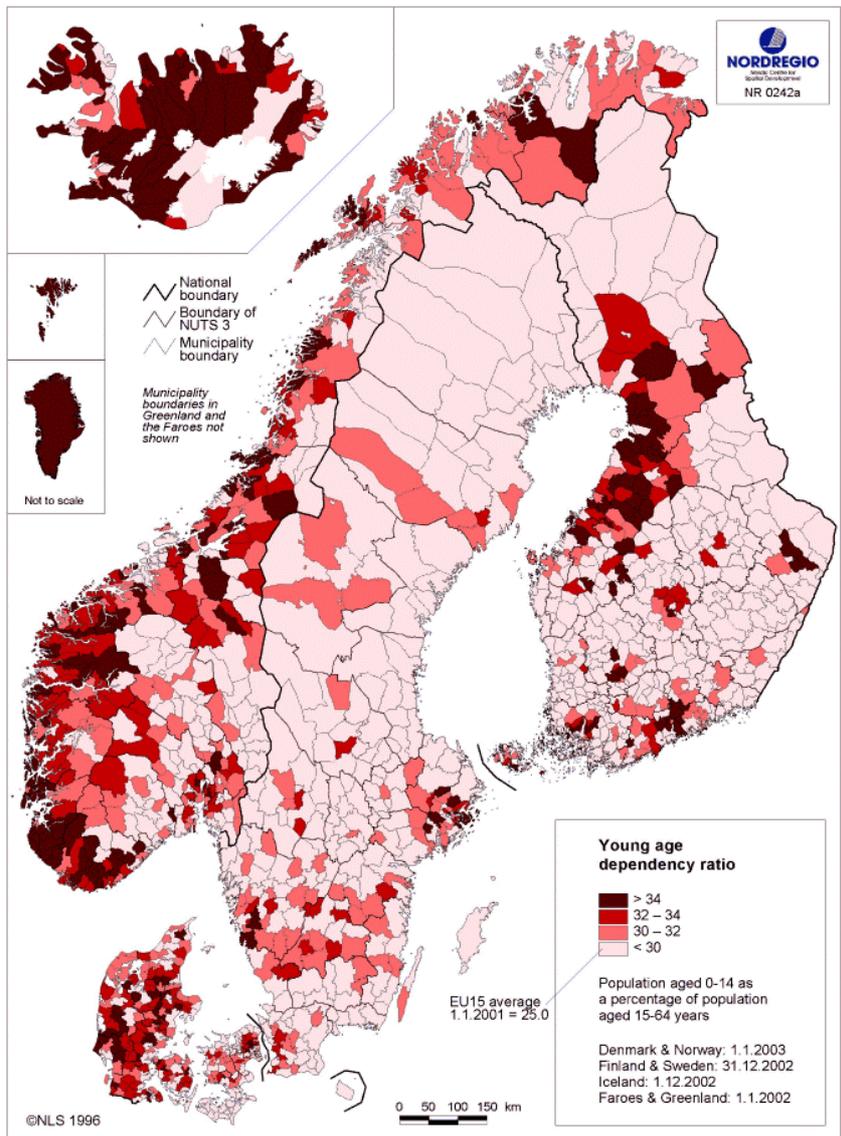
that the labour force required to take care of the elderly population will increase considerably (Sneck et al. 1989; Työvoima 2000 -työryhmä 1991).

### ***Working population related to the non-working***

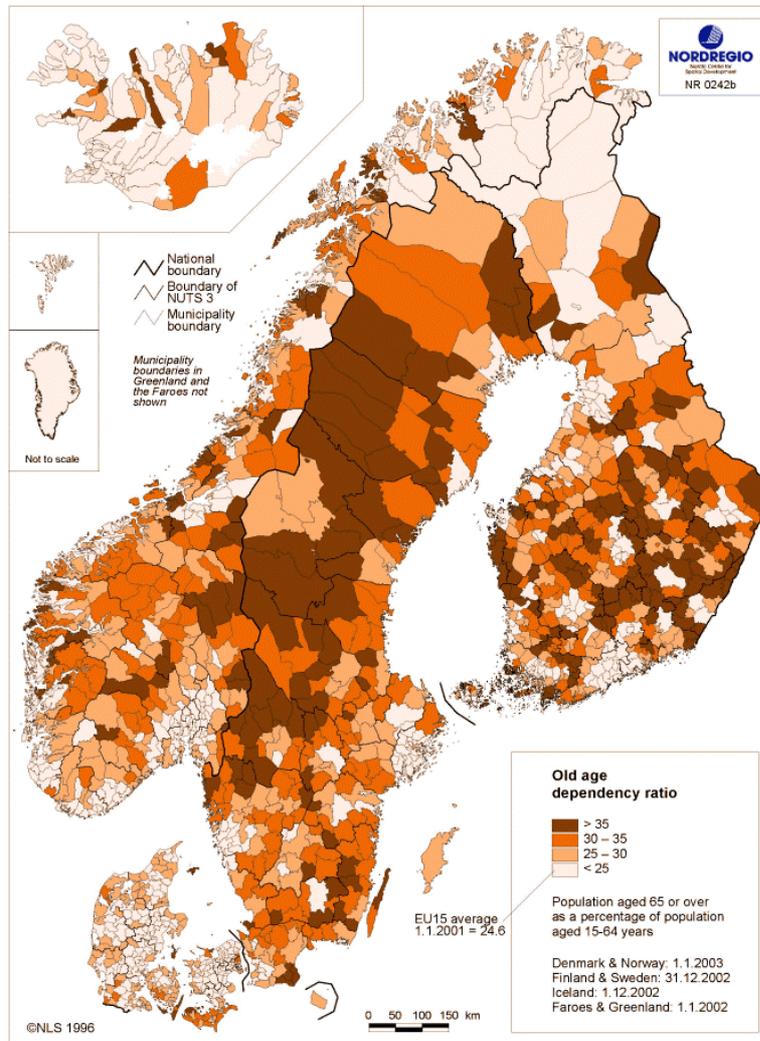
The following three maps show the dependency ratio in municipalities across the Nordic countries. The young age dependency ratio indicates the number of children in relation to the population of working age. The old age dependency ratio indicates the number of elderly (+65) in relation to the population of working age. The total age dependency ratio shows both children and elderly persons in relation to the working population. To conclude, this is a picture of the relation between providers and those who are provided for.

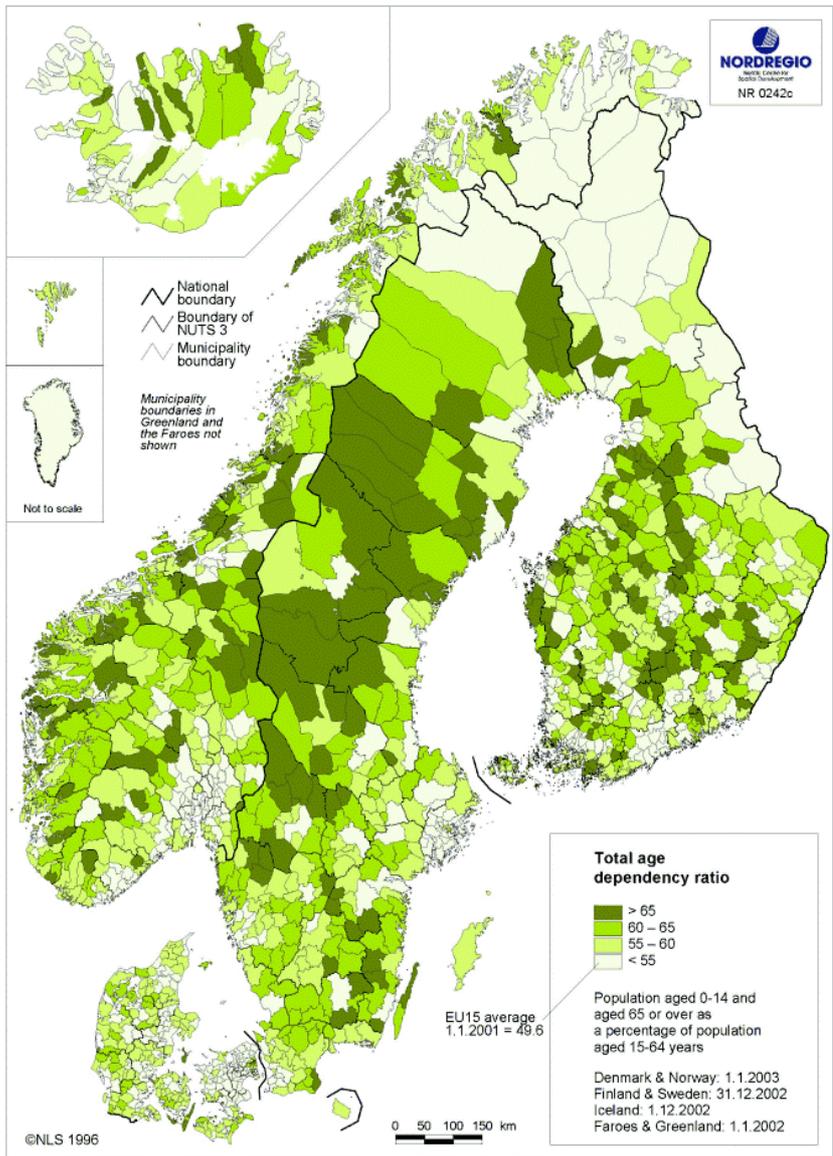
When looking at the first two maps, where young and old are separated, the impression gained is that the general situation is rather different across countries. In Sweden the young age dependency ratio is not as high as in parts of Finland, Norway and almost all of Iceland and Denmark. In Finland this is a highly regional phenomenon located in the 'mid-west'. One explanation is the laestadian religious movement. Sweden has a high young age dependency ratio in (1) municipalities with a concentration of immigrants and (2) in the so-called 'Bible belt' in Småland, in the south.

The old age dependency ratio in Norden is not however as clearly regional as its young age dependency equivalent. Indeed to some extent it shows the opposite characteristics, with Iceland, the mid-western parts of Finland and parts of the capital regions having a low old age dependency ratio, whereas for example most of Sweden and a large part of Finland have a high old age dependency ratio. This gives a similar impression as the projected share of elderly people in the Nordic regions (see above) and as the discussion regarding the ageing of the population, on the demographic challenge facing the sparsely populated and peripheral regions in Norden.



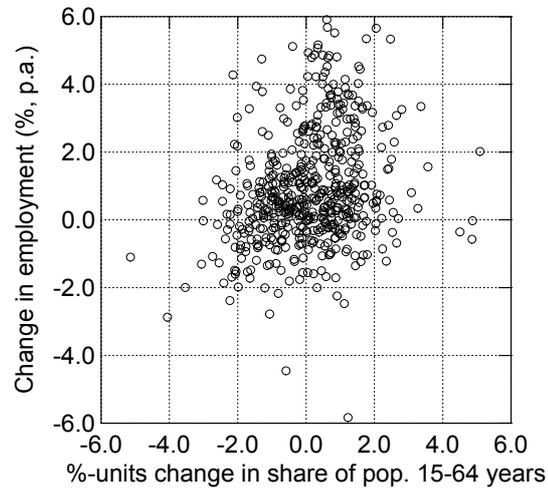
Figures 9a-c: Young, old and total age dependency ratio.  
(Source: Nordregio)





### ***Matching economic and demographic change across the common Nordic market***

Matching places, certainly, take place within the limits of functional labour markets, and not often within the limits of administrative units such as municipalities. Looking at all LLMs in Norden (excluding Iceland) we can observe all sorts of matching problems and options.



*Figure 10: All Nordic labour market regions, population change and employment change. Period: second half of the 1990s*

There are regions in the Nordic countries that, when it comes to demographic development and labour market development throughout the 1990s and up to the present, have witnessed a negative development. The economic renewal process in these regions is undoubtedly faltering, while the policy work for example relating to the encouragement of people to remain in place and to start new businesses etc has clearly been insufficient. In the graph above, these regions are located in the lower left quadrant. There are also regions that have witnessed a contrary development, i.e. with a growing workforce and a net gain of jobs: upper right quadrant. In both types of regions there is, more or less, a balance in matching supplies with demand. However in other regions, such as in the lower right quadrant, where the growing workforce is faced with a shrinking labour market, or – as in the top left quadrant – increasing demand meets a decreasing stock of local labour.

The graphs depicted in figures 10 and 11, show population change in the period 1995-2000 in relation to employment change in the Nordic labour market regions as a total, and are divided by country. If one defines economic renewal as the increasing supply of labour and labour market expansion, the regions experiencing the most renewal would be those in the upper right corner of each graph. It should however be noted that the graphs say nothing about the 'starting point' in the regions as regards unemployment and population structure. In those regions there has been a positive development of the population of working age, through the inflow of migrants and high fertility rates in the past, while during the same period, these areas have seen an expanding labour market with more people in employment. In addition, these graphs would, if the regional differences were small, consist of a concentrated 'blur' of dots, as in Denmark.

Overheated expanding	Balanced expanding
Balanced shrinking	Shrinking with labour surplus

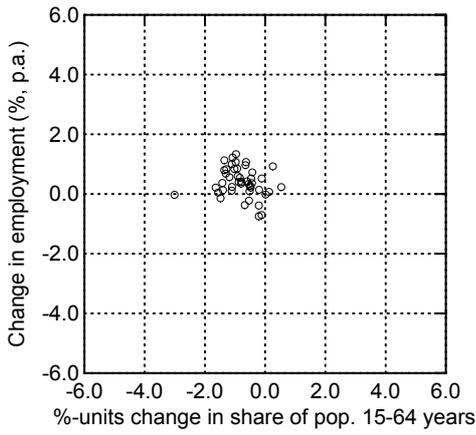
Figure 11: An interpretation of figure 10.

Figure 11, which is an interpretation of the previous figure, illustrates the different 'zones' of demographic and economic position that the Nordic labour market regions can be in. In the 'south-eastern' zone in the diagram, we find the Local labour markets under the *pressure of deactivating* local labour (positive supply and negative demand). In the very 'north-west' of the diagram a few Nordic labour market regions run the risk of *overheating* (positive demand and negative supply). In the central zone from south-west to north-east we find labour markets with *matching* demand and supply. The pattern differs strikingly between the four Nor-

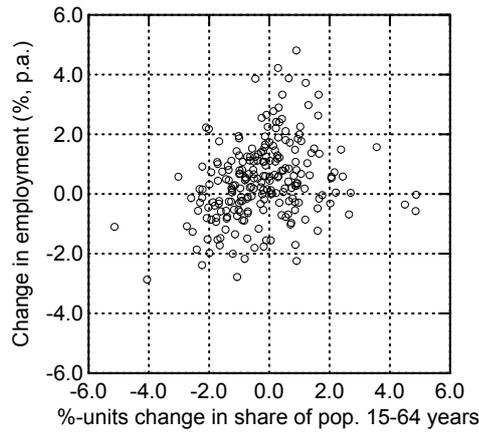
dic countries, visible in the graphs in figure 12. Using the schematic interpretation Denmark has a strong geographical concentration to the north-west zone, i.e. with activation pressure, Finland has a dispersed pattern but largely in the north-west zone, i.e. activation plus a number of labour markets with quite strong deactivation pressure in the south-east of the graph, Norway a dispersed pattern strongly oriented to the north-west labour activating zone while Sweden is concentrated within the central matching zone but with a bias to the south-east zone with deactivation pressure.

Consequently, the Nordic regions differ to a substantial degree with Norway as the country with the most diverse regional development. Denmark has undergone a rather similar development on all of its labour markets, a combination of moderately expanding labour market and moderate reduction in the labour force. The graph for Sweden shows a somewhat divided country with positive population development in a majority of the regions, but with differing performance levels for its labour markets. Finland and Norway are the countries with the clearest extreme examples of performance (outliers). If looking only at the development of employment in the Nordic regions, Norway stands out as the country with the largest regional differences. Finland is in a similar situation, but has obviously not so many outlying LLMs as Norway.

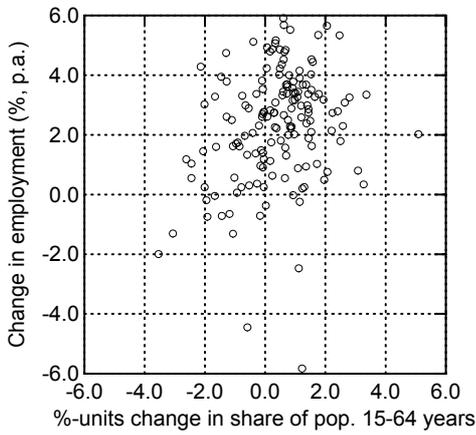
Denmark



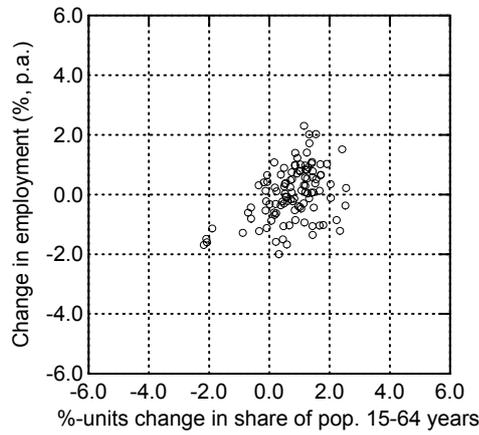
Finland



Norway



Sweden



*Figure 12: All Nordic labour market regions by country; population change and employment change. Period: second half of the 1990s*  
 (Source: Nordregio)

To conclude on this point, we argue that in comparison to Finland and Norway, Sweden and Denmark display the most cohesive pattern in terms of demographic and employment change. This is partly explained by the more diverse structure of local labour markets in both Norway and

Finland, including numerous very small areas defined as labour markets in both Norway and Finland, though more cohesion in Sweden could also lead to the hypotheses that ‘broad regional policy’, or what we *ex post* can label ‘Nordic cohesion policy’, – over a long period of time – has been more efficient in Sweden than in the two neighbouring countries. These hypotheses will be further elaborated upon below.

### ***Northern landscapes of demographic change***

To what extent do Nordic countries share the same types of demographic change at the regional level? In drawing the Nordic demographic landscape it is logical to start with population change and characterize it with regard to natural population development and net migration. Figure 13 shows the areas of demographic growth and decline. The growth zones around the metropolitan areas as well as areas of declining population, especially in the peripheral areas, are well documented. This pattern is the consequence of low and decreasing fertility rates and migratory movements. From a Nordic point of view there seem to be indications of population concentration and monocentric development rather than polycentric development. Other studies have shown that there appear to be signs of polycentric development in central Europe, though beyond that there are only indications of monocentric development with regard to demographic development (ESPON 1.1.1, TIR; ESPON 1.1.2, TIR; ESPON 1.1.4, SIR, TIR). This phenomenon is particularly strong in the Northern countries. From a functional urban areas point of view there are, however, some signs of peri-urbanisation as well as signs of a more polycentric urban structure. This peri-urbanisation process can, however, also be seen as a monocentric development as it is dependent on economic and social development in the centre.

The Nordic growth zones – as well as the European ones – are affected by a surplus of migration. Population growth can in most cases only be explained by migration surplus, as the balance of births and deaths is often negative. In these areas population dynamics tend to be increasingly driven by migration and less by a surplus of births (see Figure 13). The opposite is in general also valid – population decline is more dependent on out-migration than on natural population decline even if they often reinforce each other. As such, these peripheral LLMs are not attractive enough for migrants and the age structure is lopsided with many elderly people being resident here. One result of the skewed age structure is a natural population decrease, with the total population decline often being dramatic in these parts. It is, therefore not only the total fertility rate (TFR) that is of importance in respect of natural population development. Even age and gender structure influence this development.

A lopsided age structure and a skewed gender structure with a small share of women of fertile age may result in a natural population decrease even if the TFR is high. The same is of course valid in the opposite direction – even if the TFR is low, the age and gender structure can have a positive impact on natural population development and consequently on total population change. This phenomenon is often a factor in metropolitan areas and university towns (for a more thorough discussion, see e.g. ESPON 1.1.4 TIR; for Sweden, Johansson, 2000)

The response to economic fluctuations in the Nordic labour markets is not straightforward with respect to migratory movements and natural population development. Concerning long-distance migration, there are signs that the labour market conditions have lost a lot in explanatory power. At least for Sweden the connection to labour market conditions is today practically absent for some labour force categories – especially poorly educated ones. Instead, most of the migrants are youngsters, moving primarily as a consequence of studies and/or metropolitan lifestyle (for Sweden, see Johansson & Persson, 1999).

### ***A typology with regard to natural population change and migration***

In order to classify the Nordic LLMs with respect to total population change, natural population change and migration, six different combinations have been formed. In one of the columns an attempt to characterise the different cases has also been carried out. The purpose here is to describe the geographical pattern of demographic change. The six cases are illustrated in Table 4 and Figure 14.

Table 4: A typology, including six types, with regard to total population change, natural population and net migration 1992-2002

(Source: Typology developed in ESPON 1.1.4, estimates based on data from Nordregio)

1	PT>0	PM>0	PN>0	In-migration and young population /'high' TFR	12.8%
2	PT>0	PM<0	PN>0	Out-migration but young population /'high' TFR	5.9%
3	PT>0	PM>0	PN<0	In-migration but low fertility rate	5.5%
4	PT<0	PM>0	PN<0	In-migration and old population/'low' TFR	5.7%
5	PT<0	PM<0	PN>0	Out-migration but still young population /'high' TFR	17.4%
6	PT<0	PM<0	PN<0	Out-migration and old population/'low' TFR, depopulation?	52.7%
PT=Total population development PM=Net migration PN=Natural population development					100.0%

The first three categories have experienced a positive population development in the sense that the population has increased between 1992 and 2002. The most favourable case is the first one where both the natural population change and the net-migration were positive and reinforced each other with the result that the population increased. This does not, however, automatically lead to the conclusion that the regions in type 1 have the sharpest population increase – instead this is naturally a function of the relation between natural population change and net-migration. In the second type the positive effect of natural population change neutralised the negative in-migration effect and in the third type the opposite was true. In all three cases there has thus been population growth, even if the combinations of the ‘driving forces’ differ.

The same reasoning is valid with respect to the next three types – any conclusions about the strongest population decline cannot be drawn. Instead, only the preconditions about population development differ. The least favourable case with regard to development and dynamics is type 6 where the natural population decrease is reinforced by out-migration, which can result in a vicious circle and a negative spiral process. The regions in type 6 can be characterised as depopulation areas as both natural population change and net-migration are negative. Even types 4 and 5 can perhaps be seen as depopulation areas, but here the preconditions are different to some degree, as type 4 is an in-migration area despite the fact that the natural population change is negative, and type 5 has a positive

natural population change that is neutralised by a negative net migration. In the latter case there is, however, an obvious risk that this phenomenon will change in the future as a consequence of the out-migration of young people and the preconditions for a future natural population increase will then be eroded.

The majority – 75 percent – of the Nordic LLMs experienced a population decrease between 1992 and 2002. Most of these regions can be placed in type 6, where both the natural population change and net-migration were negative (53 percent). This is the most unfavourable case and can be characterised as a depopulation case. Type 5 involves 17 percent of the regions, while 6 percent can be allocated type 4 status.

Among the growing regions, most are classified as type 1, where both the natural population change and net-migration were positive. These LLMs are in a favourable position and are often localised in or around the metropolitan or big city areas – 13 percent of the labour markets are classified in this category. Almost 6 percent are in type 2 and the rest – also approximately 6 percent – in type 3.

Almost two thirds of the LLMs – 64 percent – had a natural population decrease during the period 1992-2002. Only 9 percent of these LLMs were expansive in the sense that they experienced a population increase as a consequence of net in-migration. This means that more than 90 percent of the Nordic LLMs with a natural population decrease also experienced net out-migration that accentuated the population decrease. These areas face a difficult situation and can in many cases also be characterised as depopulation areas.

### ***Country differences***

When discussing country differences in respect of the development of LLMs, once again it should be kept in mind that the numbers and size – both with respect to inhabitants and area – of the commuter catchment's areas in the Nordic countries vary considerably. Densely populated – but small – Denmark has only 34 LLMs while sparsely populated Finland has 198. Norway has 161 and Sweden 100<sup>8</sup>. This has a number of significant consequences for preconditions with respect to commuting and migration – in the northern parts of the Nordic countries many sparsely populated municipalities consist of one LLM as a consequence of the delimitation. Instead, a municipality should in many cases be divided into several LLMs as commuting between the different built-up areas is almost absent. The opposite is however applicable in Denmark or in the southern

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<sup>8</sup> LLM definitions used in this section differ from those used in other sections of the report.

part Sweden, where an LLM consists of many municipalities as an effect of accessibility and population density. The same phenomenon is apparent in the metropolitan areas where population density, peri-urbanisation and good infrastructure are preconditions for the continuing regional enlargement process.

This then necessitates that the comparisons between various LLMs in different parts of a country must be interpreted with some care. Despite these hesitations the demographic development on the LLM-level in the various Nordic countries has been estimated with respect to total population change, natural population change, and net migration in accordance with the typology outlined above. When considering the country distribution of these types, it is apparent that:

- Type 6 – both natural population decrease and net out-migration – is overrepresented in Sweden and Finland as compared to Denmark and Norway. It should be noted moreover that in Finland as well as in Sweden, two thirds of the LLMs are found in type 6.
- Another difference is the more positive population development in Denmark and Norway – in Denmark 56 percent of the LLMs had a positive population development and in Norway the corresponding figure was 35 percent. In particular type 2 – that has a natural population increase but net out-migration – was much more frequent in Norway and especially in Denmark.
- In Finland – on the other hand – population development was much more polarised from a regional point of view during the period 1992-2002 – only 10 percent had a positive population development and these were all concentrated to metropolitan and big city areas and university towns and their surroundings.

These findings are also obvious from the calculations in Table 5.

Table 5: A typology, including six types, with regard to total population change, natural population and net migration 1992-2002 in the Nordic countries.

Source: Typology developed in ESPON 1.1.4, estimates based on data from Nordregio

				DK (N=34)	FI (N=198)	NO (N=161)	SE (N=100)
1	PT>0	PM>0	PN>0	17.6	7.0	10.6	11.0
2	PT>0	PM<0	PN>0	29.4	2.5	16.8	1.0
3	PT>0	PM>0	PN<0	8.8	1.0	7.5	10.0
4	PT<0	PM>0	PN<0	23.5	3.0	3.1	9.0
5	PT<0	PM<0	PN>0	2.9	18.7	28.6	2.0
6	PT<0	PM<0	PN<0	14.7	67.7	36.6	66.0
PT=Total population development							
PM=Net migration							
PN=Natural population development							

### ***Migration explains 2/3 of the variation in population change***

In order to get an idea of the explanatory power of migration and natural population development, some straightforward regressions have been made including only two factors and based on cross-section data at the LLM-level. These correlations are presented in Figures 13a-b between total population change, migratory movements and natural population development. As can be seen, the strongest correlation is between net migration and total population change. This is not particularly surprising as in-migration areas are supposed to be dynamic and expansive while out-migration areas are stagnating. It must, however, be kept in mind that these estimations are no indications of the income level or standard of living in the different regions, as most of the migratory movements are domestic and not international. Instead the correlation between net migration and total population change is rather an illustration of differences in living conditions – including e.g. employment opportunities, study possibilities, lifestyle factors, quality of life and amenities – within the countries than between them. In any case it is obvious that regions that have experienced a population increase are also in-migration areas and *vice versa*, even if there are differences in income and standard of living. Migratory movements seem, thus, to be of greater importance as an explanatory factor concerning total population change than natural population change. According to our numerical analysis, more than 2/3 of the variation in population change between LLMs can be explained by net migration. This seems to be the case with regard to the development of the Nordic LLMs generally, as well as for the Nordic countries separately.

The exception here being Denmark, where the opposite seems to be true and where natural population change has a significant influence on total population change<sup>9</sup>. This may be taken to indicate that spatial density across the different types of LLMs matters for the importance of the different demographic factors.

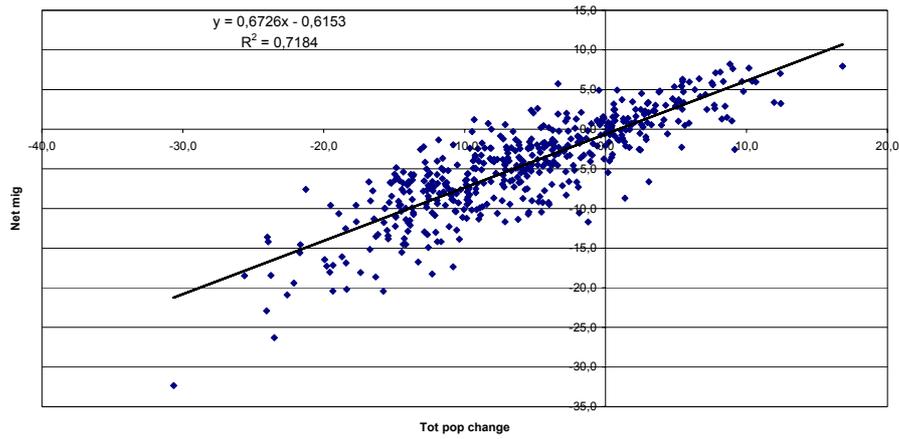
Even the correlation between total population and natural population development must, however, be handled with the utmost care. As noted previously it is not only the TFR that is of importance for natural population development. Instead, age and gender structure seem to influence natural population development more and more as a consequence of the decreasing fertility gap between different regions. With the exception of Denmark, where the correlation between natural population development and total population development is relatively strong the  $R^2$ -values for the other Nordic countries are much lower.

The correlation between natural population change and migration seems to be negligible. It is only in the Swedish case that there seems to be any positive connection at all ( $R^2=0.311$ ) – Denmark's coefficient estimate  $R^2$  is in fact negative even if it is not significant. The absence of connections between migratory movements and natural population change is, however, not as surprising as in-migration areas consisting both of ageing areas and more dynamic and expansive ones with a low TFR, but with a positive age structure from a reproduction point of view. From other studies it can be shown that many expansive in-migration areas in Europe are also characterised by very low reproduction potential (ESPON 1.1.4, SIR, TIR). This is one of the consequences of earlier in-migration as many of the in-movers had very small families and the regions then became more and more characterised as regions with low TFRs.

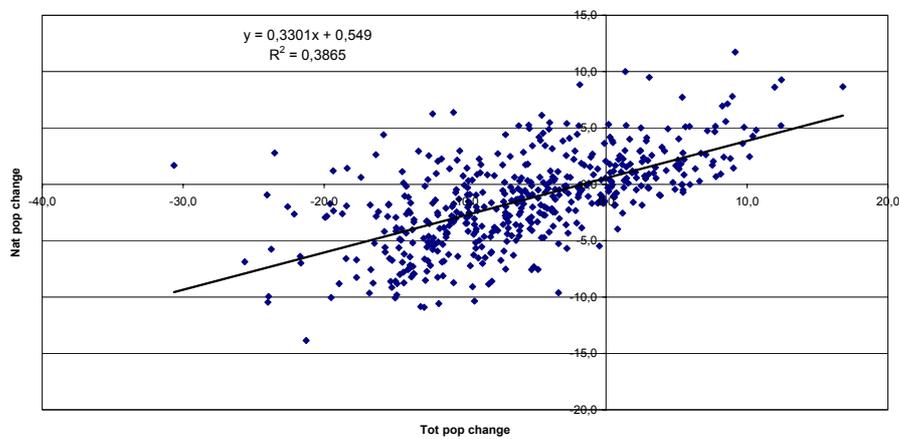
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<sup>9</sup> Plotter graphs for individual countries are not displayed in this report.

Correlation between total population change and net-migration in the Nordic countries 1992-2002. 493 LLMs



Correlation between total population change and natural population change in the Nordic countries 1992-2002. 493 LLMs



Figures 13 a-b: Correlations between total population change, natural population change and net migration in the Nordic countries 1992-2002 per mille.

Source: Estimates based on data from Nordregio.

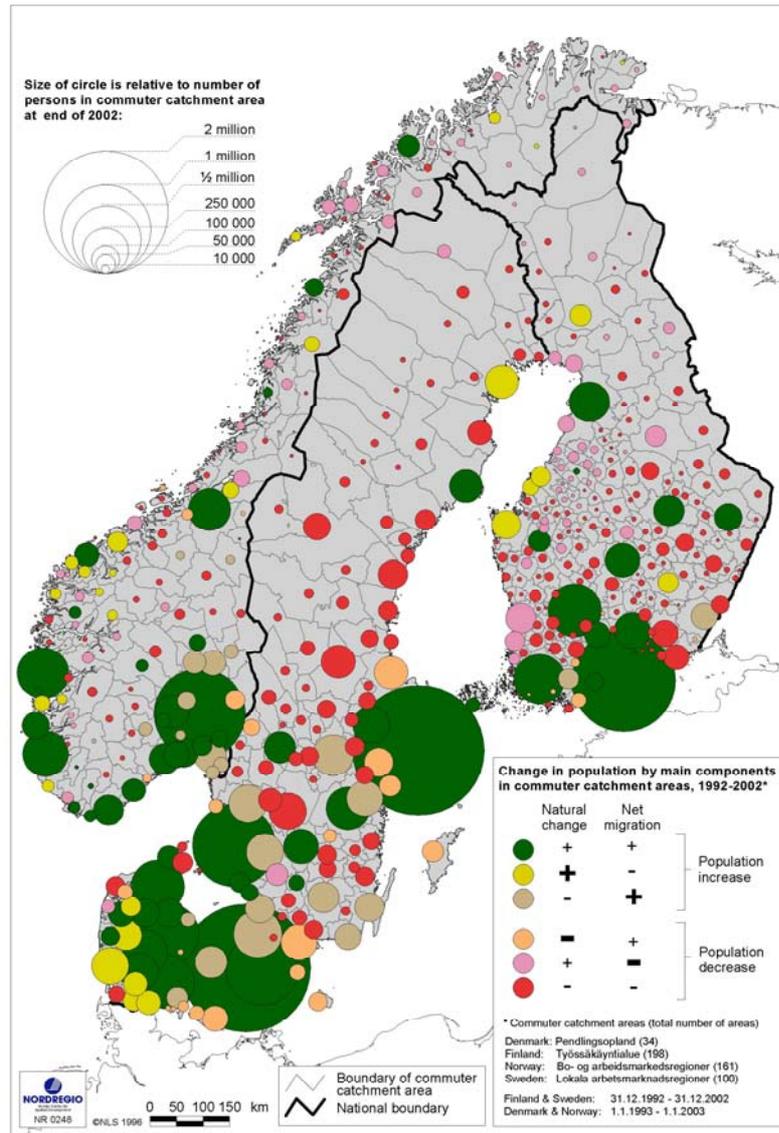


Figure 14: A demographic typology, including six types, with regard to total population change, natural population and net migration 1992-2002.

Source: Nordregio

What does this typology of regions exposed to different demographic processes tell us? They suggest a set of differentiated policy orientation.

- Almost all LLMs in Nordic countries suffering from depopulation trends are small in size and geographically dispersed within vast sparsely populated regions. The prospects for the ‘turn around’ of these demographic trends are gloomy at best, as policy intervention has to prioritize the support of basic welfare to the ageing population. Fortunately, the total population in areas of this type is quite small, thus implying less of a strain on national welfare budgets.
- There are, however, regions that in spite of natural population decline display a positive migration. These regions prove that they remain attractive as places of residence, and local and regional policy should focus on further improvement of the built and natural environment in these areas.
- Net migration is shown to be the most important factor behind total population change. Since we know that net numbers are only a small fraction of the gross migration, and that gross migration is quite similar in frequency in different regions, more effort should be put into searching for policy instruments that will stimulate in-migration, e.g. a decentralized higher education system has been shown to be an important attraction for in migrants in such areas.

## 4. Performance across the common Nordic market

### *LLM structural context – A typology of Nordic local labour markets*

Hanell & Persson (2003) developed a common Nordic typology of local labour markets by using combinations of structural factors describing each LLM in Finland, Norway, Denmark and Sweden.

- The size of the LLM in population terms reflecting the range of variation found in the four Nordic countries leads to a classification of *Metropolises, Regional centres, Medium sized towns, Small and Micro labour areas*.
- The location of universities as sources of knowledge production and as means to enhancing human resources and the primary characteristic function of the region in terms of the range of services provided. This leads to the categories *Nordic regional centres with a university, Nordic capitals and Other Nordic regional centres*.
- The dynamics of its trade and industry, leading to subdivisions of *Production-based and Service-based areas*.
- Various aspects of accessibility and communications, as well as cooperation options within polycentric surroundings are reflected in the subdivision of labour markets according to location in *Polycentric* and in *Non-polycentric surroundings*.

### *Basic indicators used*

In order for any international typology to be purposeful, it should be able to capture the essential characteristics of the countries taken as a group, without at the same time losing too much of its applicability in any individual country, or part thereof. This inevitably involves making compromises in each country in order to identify the smallest common denominator that they share across borders. The result is more often than not similar to what would be acquired had the typology been constructed purely on a national basis.

In an ideal case, the choice of ‘hard’ indicators to be used in classification would be restricted to those that are comparable across country borders. However, many aspects – especially with regard to spatial systems – are inherently incomparable across nations in statistical terms, and thus we have been forced to make certain exceptions. Thus the hard data is supplemented with data based on our own subjective judgements, harmonisation of official data, or combinations thereof.

We have chosen four dimensions to steer the categorisation. Firstly, the settlement structure of and within the LLM, measured in terms of the population of the LLM, its population density and the number and density of localities<sup>10</sup> within it. Secondly, certain aspects of the functionality of an LLM are considered, namely its administrative status and the existence of a university or a regional university in the LLM. Thirdly, the coarse economic base of the LLM measured in terms of the share of persons employed in primary production, the share of persons employed in manufacturing (including extraction of minerals and construction) and share of persons employed in services (public and private jointly) is taken into account. Fourthly, we have considered the location of each LLM with respect to its surrounding urban pattern, measured as the number and density of localities in the NUTS 3 region surrounding the LLM, providing us with an indication of whether the LLM is, or is not, situated in a polycentric environment.

The underlying assumption in the last dimension is that regions located within a polycentric urban structure do at least have the *possibility* to physically-functionally connect with neighbouring regions, whereas regions located far from other centres are highly unlikely to do so. This does not mean that the regions that we have classified as ‘lying within a polycentric environment’ will necessarily become involved in such a regional enlargement process, nor does it mean that those regions that are currently classified, as not lying within a polycentric environment, will not do so in future.

Two of the indicators are however particularly vulnerable to subjective judgements on our part, such as for instance the one on the above-mentioned concept of polycentricity. The usage of NUTS 3 regions means that the boundaries of each region ‘surrounding’ the LLM are based on administrative divisions alone with no regard to functional reality. Thus, for instance, Norway’s third largest town Trondheim is classified by us as lying in a monocentric environment simply because the administrative County (NUTS 3) boundary happens only to include a few localities, whereas the somewhat less urbanised region just to the south of it will for the opposite reasons here be classified as having a polycentric

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<sup>10</sup> Localities (*tätort, tettsted, taajama*) are in the Nordic countries defined as a group of buildings located less than 200 metres apart (Norway: 50 metres) and having a population of at least 200 inhabitants. This therefore provides a fairly coherent and comparable picture of where the physical urban fabric of each country is located and where its inhabitants live regardless of administrative boundaries. (For our purposes we have chosen to omit all localities that have less than 5 000 inhabitants.)

urban structure. Similarly, the LLM in the western parts of the Swedish County of Värmland are categorised here as lying in a polycentric environment simply because of the shape of the county, although in reality there are only a few sparsely located urban centres there. However, looking at the Nordic countries on the whole, this method provides us with at least a rough indicator of the urban pattern surrounding each LLM.

In addition, the choice of what constitutes a 'university' or a 'regional university' is subjective. There are no established international criteria for what constitutes a university, rather the opposite is the case, and each country labels their educational units rather arbitrarily. Well aware of the potential problems this could cause we have considered as universities here all those educational institutions that do offer graduate courses and conduct research on a broad scale, i.e. not only within a few narrowly defined subjects. We have also included all polytechnic universities in the same category. Those educational institutions that have e.g. Master's programmes but do not offer PhD courses, or only offer them on a narrow basis, have been characterised as regional universities.

The population figures of the LLM refer to those at the end of the year 2000 (31.12.2000 or 1.1.2001). Data on the employment structure refers to the end of 1999. The localities used in classification are from 1995 (Finland and Sweden), 1997 (Norway) and 1998 (Denmark). All data is obtained from the databases of the respective countries National Statistical Institutes.

### ***Criteria for 'typologisation'***

Based on the indicators depicted in the previous chapter, we have identified seven major groups of LLM's in the four countries involved, namely: 1) Nordic capital regions; 2) other Nordic metropolises; 3) Nordic regional centres with a university; 4) other Nordic regional centres; 5) Nordic medium-sized towns; 6) small Nordic labour areas; and finally 7) Nordic micro labour areas. They are all divided with regard to their surroundings, while the last two categories can be further sub-divided into production-based or service based areas. The criteria and thresholds of each category are summarised in table 6. It should be stressed however that the labelling of the areas reflects the specific Nordic settlement pattern and is most likely not to be applicable in the more densely populated parts of the world.

Table 6: Criteria and thresholds for ‘typologisation’

Code	Category	Sub-category	Location	Criterion/a
1	Nordic capitals			National capital and > 1 million inhabitants within Local Labour Market (LLM)
2	Nordic metropolises			200 000 – 1 million inhabitants within LLM
2.1			in polycentric surrounding	LLM situated in NUTS3 region <sup>11</sup> having at least 2 localities (tätort, tettsted, taajama) with more than 5 000 inhabitants and a density of more than 3 such localities per 10 000 km <sup>2</sup> land area.
2.2			non-polycentric surrounding	LLM situated in NUTS3 region not fulfilling criteria of 2.1
3	Nordic regional centres with university			LLM with university or technical university
3.1			in polycentric surrounding	See 2.1
3.2			non-polycentric surrounding	See 2.2
4	Other Nordic regional centres			Regional administrative centre (Amt in Denmark; Maakunta/Landskap in Finland; Fylke in Norway; Län in Sweden) or >75 000 inhabitants in LLM
4.1			in polycentric surrounding	See 2.1
4.2			non-polycentric surrounding	See 2.2

<sup>11</sup> In order to create comparable capital ‘NUTS3’ regions the Danish municipalities of København and Frederiksberg and the counties of København, Frederiksborg and Roskilde (all separate NUTS3 units) have here been merged into a single region ‘Greater Copenhagen’ (Hovedstadsregionen). Similarly, the Norwegian counties (and NUTS3 equivalents) of Oslo and Akershus are treated as a single region.

5	Nordic medium-sized towns			30 000 – 75 000 inhabitants within LLM
5.1			in polycentric surrounding	See 2.1
5.2			non-polycentric surrounding	See 2.2
6	Small Nordic labour areas			10 000 – 30 000 inhabitants within LLM and having a locality (tätort, tettsted, taajama) with at least 5 000 inhabitants and a population density $\geq 10$ inhabitants/km <sup>2</sup>
6a		production-based		LLM with share of employment in primary production $>20\%$ or share of employment in manufacturing $>30\%$ or share of employment in services $<65\%$ and not having a regional university or affiliate
6a.1			in polycentric surrounding	See 2.1
6a.2			non-polycentric surrounding	See 2.2
6b		service-based		LLM fulfilling criteria of 6 but not of 6a
6b.1			in polycentric surrounding	See 2.1
6b.2			non-polycentric surrounding	See 2.2
7	Nordic micro labour areas			$< 10\,000$ inhabitants within LLM or $10\,000 - 30\,000$ inhabitants and not having a locality (tätort, tettsted, taajama) with at least 5 000 inhabitants or not having a population density $\geq 10$ inhabitants/km <sup>2</sup>

7a		production-based		LLM with share of employment in primary production >20% or share of employment in manufacturing >30% or share of employment in services <60% and not having a regional university or affiliate
7a.1			in polycentric surrounding	See 2.1
7a.2			non-polycentric surrounding	See 2.2
7b		service-based		LLM fulfilling criteria of 7 but not of 7a
7b.1			in polycentric surrounding	See 2.1
7b.2			non-polycentric surrounding	See 2.2

Finland and Norway have some 20 percent of their population within categories six and seven, whereas in Denmark and Sweden such categories only constitute around 5 percent (Figure 14).

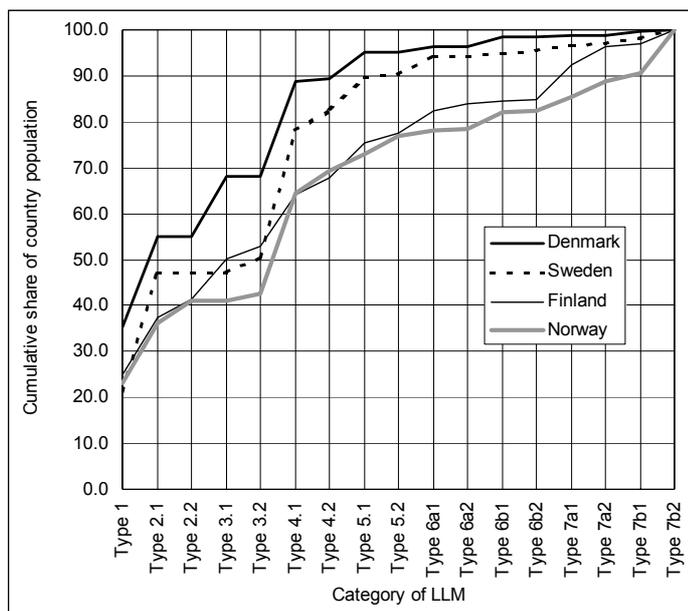


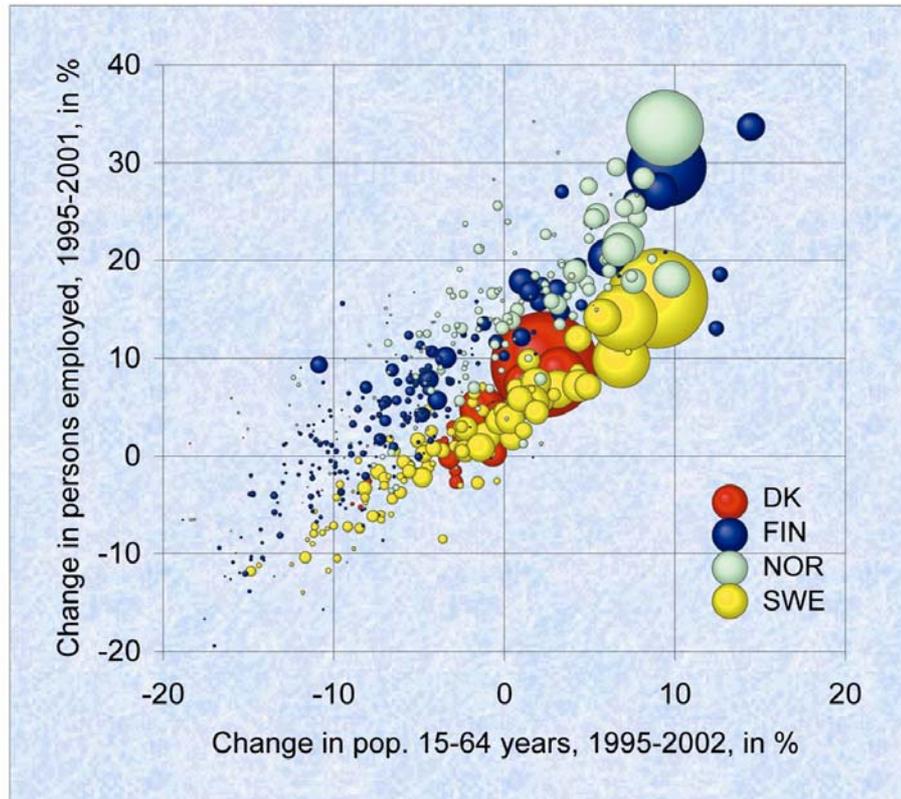
Figure 15: Cumulative share of country population across typologies for coding of regions, see Table 6. (Data source: National Statistical Institute)

Population density across the typology decreases with rank. Similarly, as the share of persons employed in primary production increases the lower it ranks in the typology. The same applies to the share of employment within manufacturing, with the exception of the smallest class, i.e. ‘Nordic micro labour areas’. The opposite holds true for employment within services, where e.g. the capital regions as a whole have over four fifths employed in service production. Details of the characteristics and structure of each typology taken as a group and broken down per country and group are provided in Appendix 1.

**Local matching of employment and demographic change across the Nordic labour market**

A graphic representation of performance across the whole Nordic labour market (except Iceland) appears in Figure 16.

- There is a strong positive correlation between the very size of the labour market and the work force change as well as employment change in all countries. Population change ranges between minus 15 and plus 15 percent from 1995 to 2002. Finland displays the largest variation and Denmark the smallest. Employment change ranges between minus 15 and plus 35 with the largest variation being within Norway.
- The bulk of Nordic regions were clustered in a block of employment change from plus 2 to plus 20 percent and work force change from zero to 10 percent. Together the two capitals, Oslo and Helsinki, formed strong growth centres with a work force growth of about 10 percent and work place growth rate of 30 percent.
- The next set of LLMs are located in the segment showing decreasing work force down to minus 10 percent but with job growth up to 15 percent.
- The third set of Nordic LLMs is characterized by an employment decrease between zero and minus 10 and with net population decrease between minus 5 and minus 15.
- The general national profiles show that Swedish and Danish LLMs are closest to numerical balance between work force and employment, i.e. the trends in figure 11 is robust over the period 1995-2003 even in the cohesion cases. The size of the LLM does though matter for labour market performance. Employment growth roughly exceeds population growth by 5 percentage units. In Norway the gap is much larger, being between 10 and 15 percentage units, while in Finland it is even larger than that in many places.
- The most striking differences in the development of supply and demand are found between the capitals, where – as mentioned previously – Oslo and Helsinki display a similar behaviour of ‘heated growth’, while Copenhagen and Stockholm both had moderate employment growth, accompanied in Stockholm also by a moderate supply growth for labour but in Copenhagen by only a small population growth.



*Figure 16: Change in population 15-64 years and change in employment, in percent for all LLMs in Sweden, Norway, Finland and Denmark. A graphic representation of the common Nordic labour market.*

(Source: Nordregio)

## 5. Local vs. national labour market performance – the case of Norway<sup>12</sup>

### *Several renewal modes*

Behind aggregate indicators such as the ‘net employment growth rate’, which describes labour market performance, there are complex matching processes and transitions that have to be analysed in order to evaluate how well the labour market actually functions. There are several ways to describe the modernization of local economies and labour markets. In this empirical analysis we concentrate on the following, all based on gross-stream data:

- The changing relation between exits and entries behind the *age structure* of the labour force.
- The annual rate of inflow of labour with *modern education* at any level, and particularly.
- The annual inflow of labour with *higher education* contributing to the modernization of all sectors of the economy.
- The spread of new *knowledge based industries*.
- Finally, we analyse how the *whole set of mobility modes* contributes to the reshaping of labour markets, i.e.:
  - From education to job.
  - From unemployed to job.
  - From other non-employment (e.g. time-out) to job.
  - In-migration to job.
  - Immigration to job.

In this chapter, we evaluate in detail the spatial variation in LLM performance within *one* Nordic country. Here, Norway, currently along with Iceland, the best performing national labour market will be used as the bench-mark. The numerical analysis concerns the seven major types of Nordic labour regions. We focus on the range of variation in flows of labour to and from employment of different age groups and with different levels of formal education.

### *Modernization by changing age structure*

The three most centrally located types of regions clearly show a higher percentage of employment in the youngest age group (see figure 17). The

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<sup>12</sup> Based on mobility results from the Norwegian analysis in the project ‘Economic Renewal and Demographic Change’ Lasse Sigbjørn Stambøl 2004-03-18.

percentage of those employed in the oldest age group varies only slightly across regional types, though an excess amount is noticeable in the capital region and in micro labour areas. The less central regions have, however, a somewhat higher potential for turnover from employment in the near future, due to the higher percentage of employed in the age group 55-64 years.

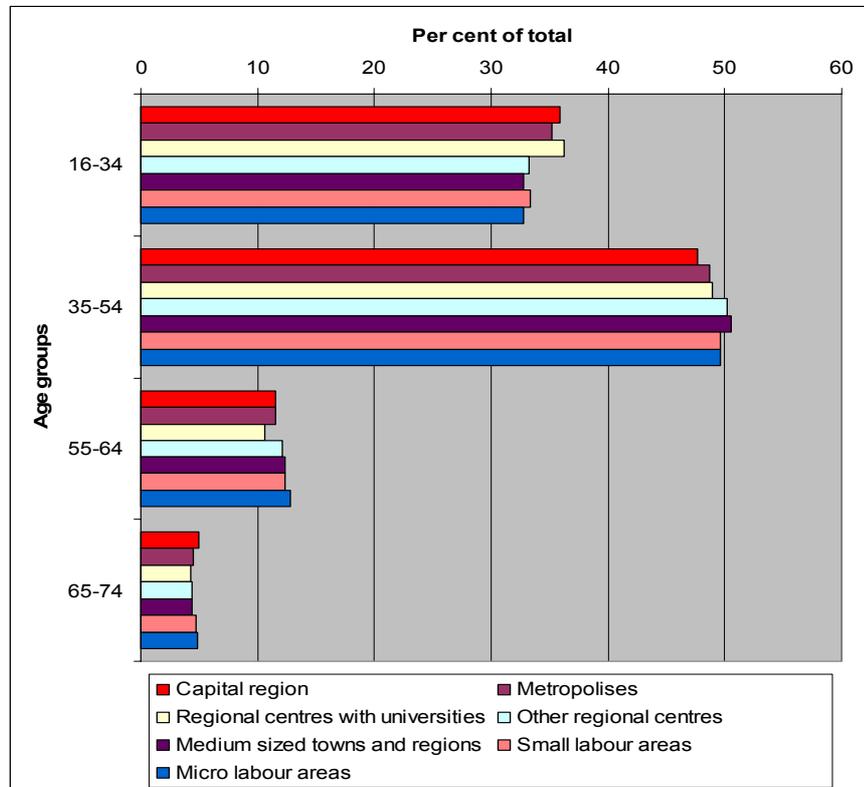


Figure 17: Age structure of employment 1997 by seven typologies of regions in Norway

The most obvious effect of ageing is the retirement of elderly labour, indirectly leaving room for new entries. The capital region shows a somewhat higher turnover rate from employment than the national average in both the age group 55-64 years and 65-74 years (see figure 18). As noticed previously, the capital region has a somewhat higher percentage of employment in the oldest age group than do most other types of regions. The lowest turnover rates from employment are to be found in re-

gional metropolises and in regional centres with a university. In practice, this means that it is somewhat more attractive to stay employed after retirement age in these regions.

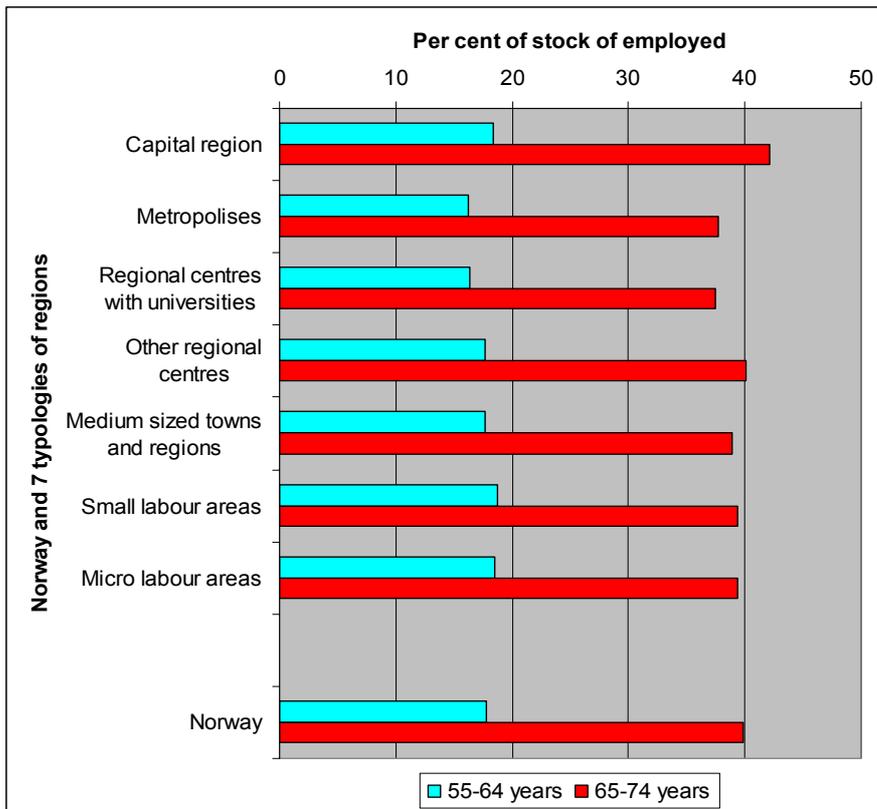


Figure 18: Gross exits from employment in the oldest age groups 1997-1998 in Norway and broken down by 7 typologies of regions

Looking at the rates of *demographic renewal* of the labour markets across Norway, we find that the capital region shows the strongest positive effect with an almost +11 per cent net flow into the labour market in the youngest age group, while the micro labour areas show the lowest positive net growth at +6 per cent (see figure 19). For the capital, in addition to the growing labour demand, it seems that frequent exits by the oldest age groups give additional room for the more frequent recruitment of a younger labour force. The net figures for the age group 35-54 years are rather small but positive, except from regional centres with a univer-

sity. The net figures for the two oldest age groups are most negative in medium sized towns and regions for the age group 55-64 years, and in the capital region for the oldest age group.

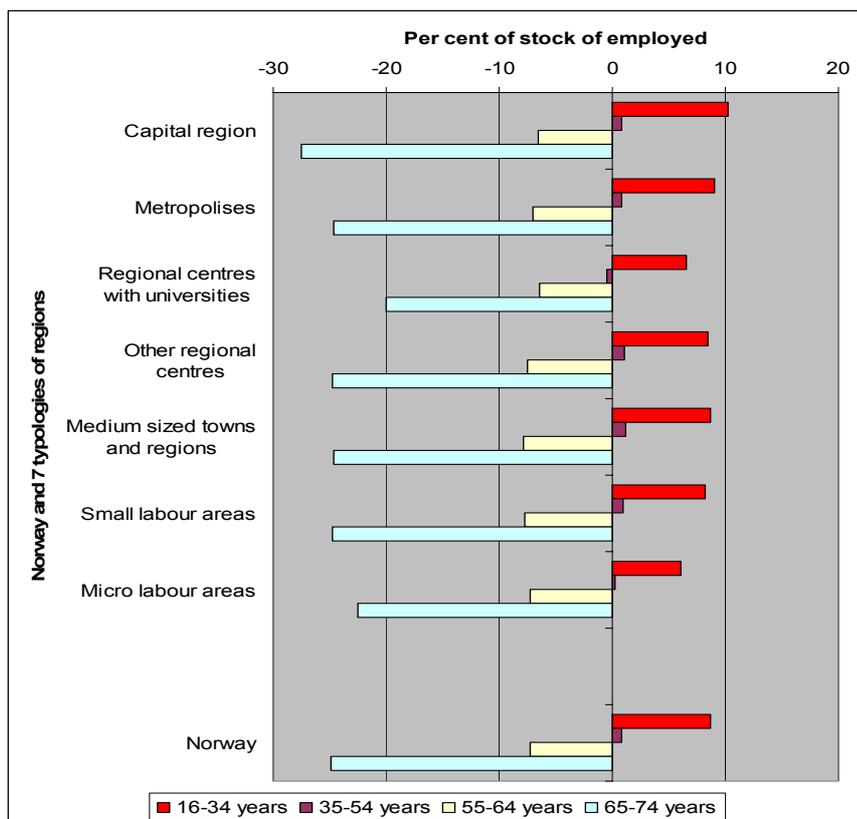


Figure 19: Net flows of labour by age groups 1997-1998 in Norway and 7 typologies of regions

### ***Modernization by inflow of labour with 'fresh' education***

The positive effects of annual net flows of employed with higher education is definitely strongest in the capital region followed by regional metropolises and other regional centres, while micro labour areas show negative net effects in respect of labour flows of higher educated employed (see figure 20). The net flows of lower educated labour are mostly negative except from the capital region. The net flows of middle educated labour are generally positive, and are strongest in regional metropolises and medium-sized towns and regions.

Hence, the *capital region is unique* in relation to all other region types in Norway in the sense that it shows a dual – or tripolar – growth pattern, with a rapid net renewal of the labour force taking place in all three educational segments.

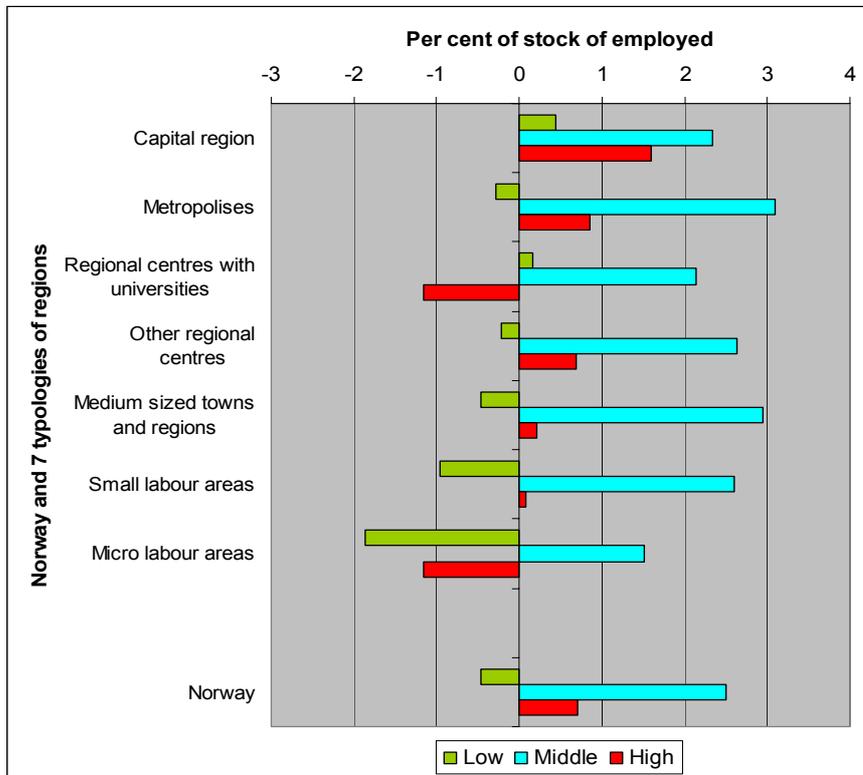


Figure 20: Net flows of labour by education levels 1997-1998 in Norway, and 7 typologies of regions. Based on the differences between gross entries and gross exits of labour. All educational levels are measured in 1997.

### ***The spatial pattern of economic renewal by sector***

By the end of the 1990s, particularly strong growth in sectors representing the so-called ‘new economy’, such as knowledge intensive business services (KIBS) and for some regions, ICT-manufacturing and ICT-Wholesale, was taking place (see figure 21). The KIBS-sectors showed the strongest growth in the capital region and in medium sized towns and regions. The ICT-manufacturing showed very strong growth in Regional centres with a university and in small labour areas. The finance sector also shows strong growth in most types of regions, though this was

strongest in the more central regions. On the other hand there are generally small changes in public sectors like Health and social works and public administration.

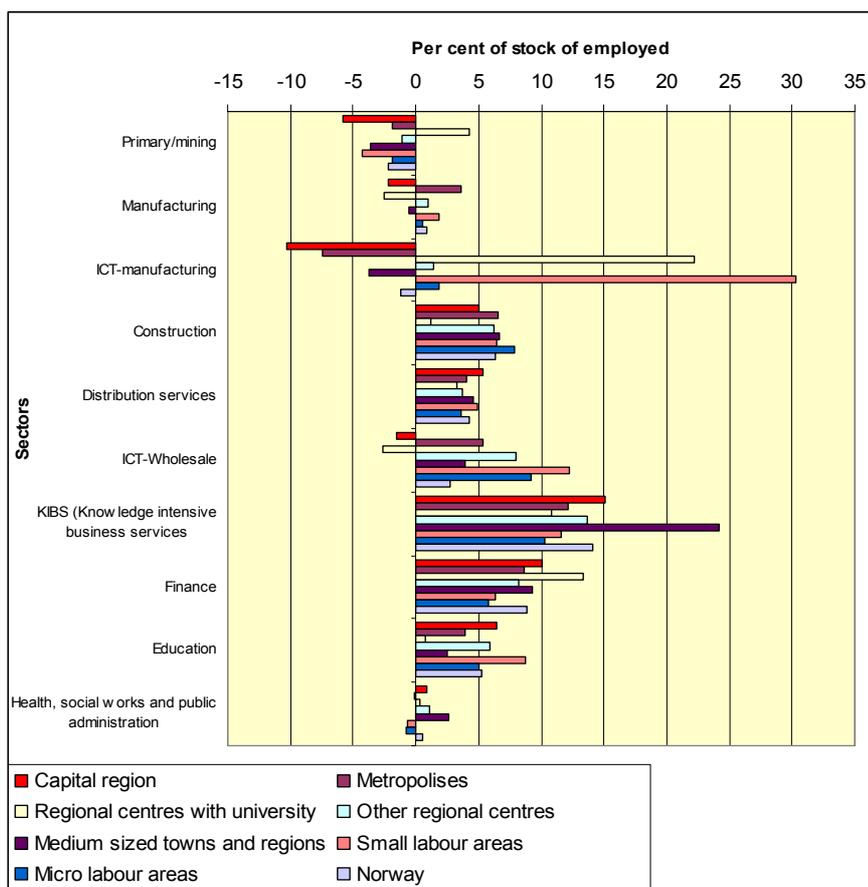


Figure 21: Net flows of labour by economic sectors 1997-1998 in Norway, and 7 typologies of regions.

### **Modernization of old and new sectors by entries of higher educated labour**

At the sectoral level, 'old' labour leaves their jobs for several reasons: Changing to a new job in another sector, for further education, unemployment, retirement, migration etc. The turnover is surprisingly high, on average over 20 per cent of the stock of employment *per annum*. About half of the mobility concerns local cross industry job changes. The subsequent gross entries are extremely important in analysing the anatomy of

economic renewal. Here, we will concentrate on the mobility of higher educated labour to both mature industrial sectors and to modern knowledge-intensive sectors. We assume that labour with qualified education contributes to the improvement of the economic performance of any sector. On average, new entries and inter-industry mobility correspond to as much as 23 per cent of the stock of labour with higher education in the Norwegian economy. The range of variation is from only 17 per cent (in the education sector) to as much as 36 per cent (in finance).

Hence, there is a deviation in the gross entry rates of higher qualified persons to job especially across sectors, but also across regional typologies. This is important for our analysis of labour market renewal. Table 7 shows that the capital region clearly has the highest gross entry rates of high-educated labour, while the medium-sized towns and regions showed the lowest entry rates. Among the various sectors it is the financial sector and the 'new economy' sectors of ICT-Wholesale and Knowledge intensive business services (KIBS) that show the highest gross entry rates of well qualified employed.

The lowest rates are to be found in the sectors of education and ICT-Manufacturing. Somewhat surprisingly, the gross stream of highly educated labour is also high in the primary/mining industry sector.

The latter result can be explained in relation to the previous very low numbers of those employed in this sector with higher education. The education and ICT-manufacturing sectors suffered from reduced rates due to the opposite phenomenon, that is to say, historically they have seen a relatively high percentage of highly educated persons. Moreover, the gross mobility to job is particularly high in primary/mining in the capital region and in regional centres with a university, in ICT-Manufacturing in regional centres with a university and in medium-sized towns and regions, in ICT-Wholesale in micro labour areas, regional centres with a university, and regional metropolises and in finance in medium-sized towns and regions, as well as small labour areas and micro labour areas.

Table 7: Gross entries of higher educated labour by sectors 1997-1998 in Norway and in each of 7 typologies of regions

Sectors:	Capital Region	Metropolises	Regional centres with university	Other regional centres	Medium sized towns and regions	Small labour areas	Micro labour areas	Norway
1. Primary/mining	37.7	27.9	41.2	29.2	24.8	23.8	29.1	29.0
2. Manufacturing	20.9	23.1	28.3	20.2	19.6	21.8	22.5	21.4
3. ICT-Manufacturing	18.5	19.5	40.0	15.4	42.6	29.3	17.6	19.1
4. Construction	21.3	20.9	19.7	21.4	22.4	28.6	27.1	22.2
5. Distribution services	27.8	28.7	33.0	28.6	28.0	32.0	30.9	28.7
6. ICT-Wholesale	25.0	46.8	54.3	39.2	31.1	32.6	62.3	32.4
7. KIBS (Knowledge intensive business services)	33.1	30.1	28.8	32.2	35.5	31.4	33.8	32.3
8. Finance	34.3	35.1	37.3	37.0	43.9	42.1	41.0	36.0
9. Education	19.7	15.6	17.2	16.3	13.3	20.7	16.7	17.0
10/11. Health, social work and public administration	23.3	16.7	16.0	17.6	18.1	17.7	19.2	19.3
Total	26.2	21.7	21.5	21.3	20.6	22.7	21.8	23.0

Table 8: Net entries of higher educated labour by sectors 1997-1998 in Norway and in each of 7 typologies of regions. Based on the differences between gross entries and gross exits of high-educated labour. Educational level 1997

Sectors:	Capital region	Metro-polises	Regional centres with university	Other regional centres	Medium sized towns and regions	Small labour areas	Micro labour areas	Norway
1. Primary/mining	-12.6	-8.0	1.5	-4.3	-8.3	-9.3	-6.7	-7.3
2. Manufacturing	-4.9	4.0	-5.5	0.3	-2.1	0.6	-0.4	-0.4
3. ICT-Manufacturing	-15.8	-27.4	0.0	-3.3	4.6	4.6	-13.7	-11.7
4. Construction	0.8	1.9	-2.9	3.4	2.2	8.2	6.1	2.7
5. Distribution services	0.1	-2.7	-1.6	-3.7	-5.7	-3.0	-5.5	-2.2
6. ICT-Wholesale	-6.4	6.8	0.0	6.4	-4.8	0.0	17.7	-1.3
7. KIBS (Knowledge intensive business services)	11.0	7.7	7.7	9.5	11.7	8.0	6.1	9.6
8. Finance	13.3	13.4	19.5	14.6	20.6	17.8	14.7	14.2
9. Education	3.5	1.9	-1.1	3.5	0.6	6.8	2.5	2.9
10/11 Health, social work and public administration	-1.4	-2.2	-3.8	-1.9	-0.1	-5.7	-3.7	-2.2
Total	1.6	0.8	-1.2	0.7	0.2	0.1	-1.2	0.7

Table 8 shows the net results of gross labour market mobility for persons with higher education. At the regional level the strongest positive net effect is to be found in the capital region, in regional metropolises and in other regional centres, while the strongest negative net effects were observed in regional centres with a university, and in the micro labour areas. At the sector level the strongest positive net effects are found in the finance sectors and in knowledge intensive business services (KIBS-sectors), while the strongest negative net effects were to be found in ICT-Manufacturing and in primary/mining. The capital regions show higher positive net effects in the KIBS-sectors than the national average, while the net effect in the finance sectors were slightly below the national average. Moreover, there were strong positive net effects in ICT-Wholesale in the micro labour areas, in the KIBS-sectors in medium-sized towns and regions, in finance especially in medium-sized towns and regions, regional centres with a university and in small labour areas. Especially strong negative net effects were to be found in primary/mining in the capital region and in ICT-Manufacturing in regional metropolises, the capital region and in micro labour areas. It is worth noticing the general negative net effect in the large public sector of Health and social work and public administration.

To *conclude* this last section on Employment renewal, we have found that the Capital region of Norway is clearly in the lead, nationally speaking, as regards introducing well-educated labour into the regional economy. There, on average, new entries (including inter-industry changes) correspond to more than 25 per cent of the stock of qualified people in the whole industrial structure. All other types of LLMs are at more or less the same lower level in the rate of entrance into the old and new economy (21 – 22 per cent of stock is replaced by new entries)

The rapidly growing sectors in Oslo/Akershus in this particular year – finance and knowledge-intensive business services both ‘required’ that recruitment correspond to *as much as one third* of the stock of the previous year. On the whole, however, we have a surprisingly dispersed spatial pattern in terms of the net input of highly educated labour within industries such as manufacturing, construction, ICT-wholesale, and KIBS. The, in some cases, very high gross entries – requiring that over 40 per cent of the stock of the employed in one year has to be recruited – mainly locally – before the end of the next year must have been a challenge to the companies for instance in ICT-Manufacturing in medium sized towns, in finance in small labour areas and ICT-Wholesale in micro areas (Table 7)! Fortunately, the absolute numbers of new recruitments

are quite small in these regions. It will be fruitful to, in the coming chapters, to compare these findings for Norway with neighbouring countries.

***Regional patterns of multidimensional mobility***

In order to analyse which idle local and external labour pools are activated to fill the vacancies, we need to analyse the gross flows a bit further. By so doing we will be able to discuss the impact of policy in different regional contexts: the rate of entries from unemployment reflects certain sets of policy interventions, migration directions of higher educated persons tells us about the importance of the location of universities, etc.

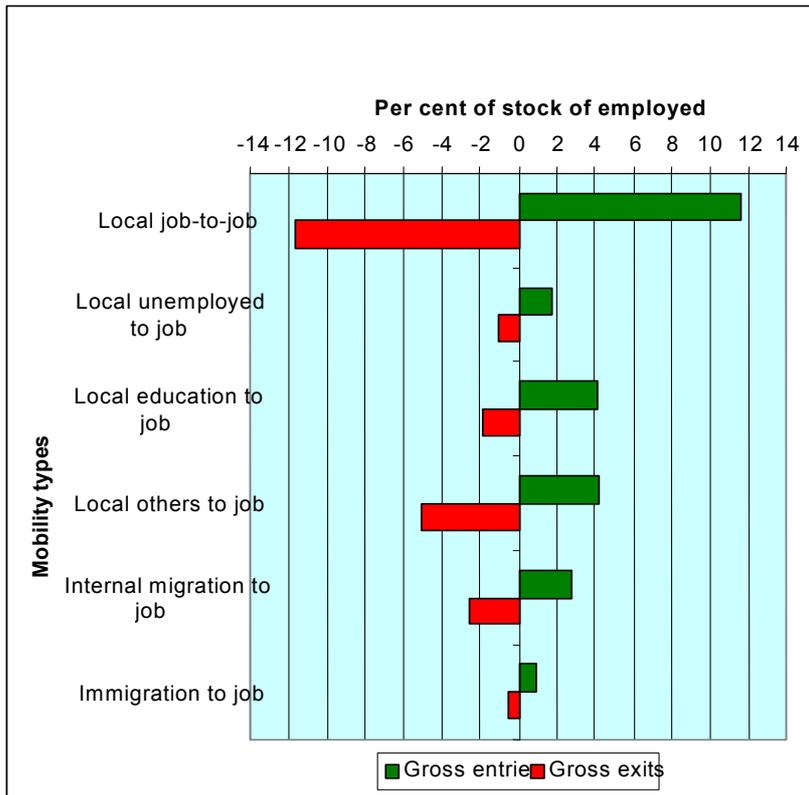


Figure 22: Gross entries to job and gross exits from job 1997-1998 decomposed by mobility segments. Norway

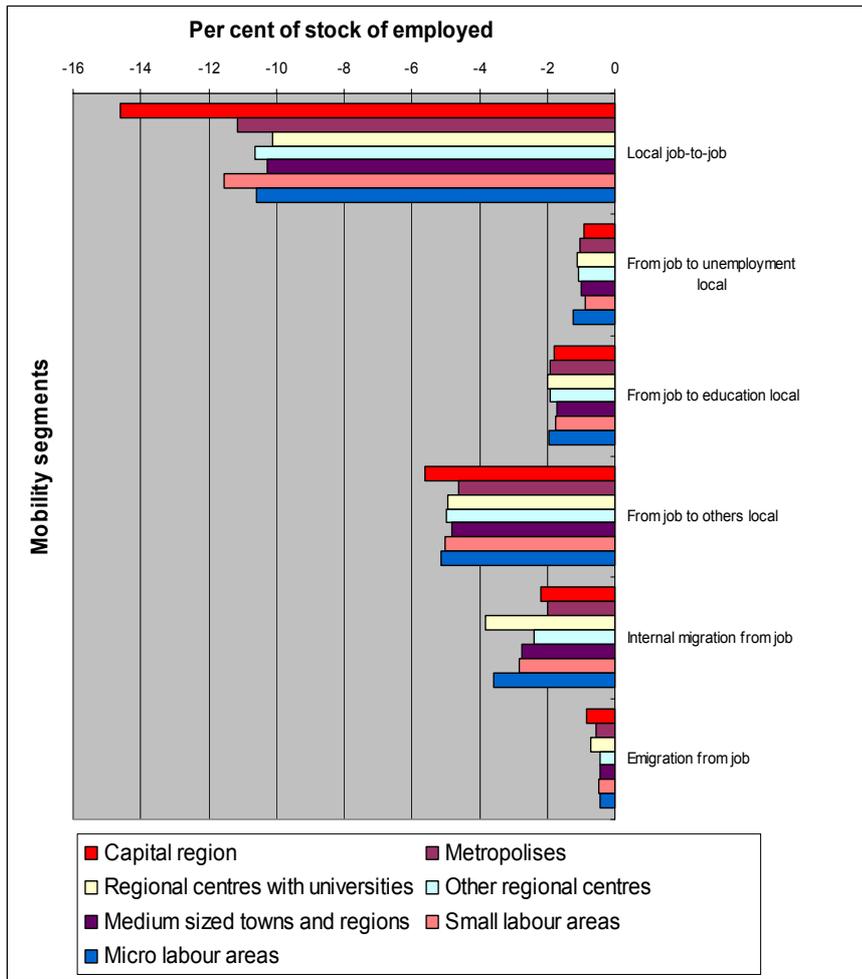


Figure 23: Gross exits from job 1997-1998 broken down by mobility segments. Seven typologies of regions in Norway

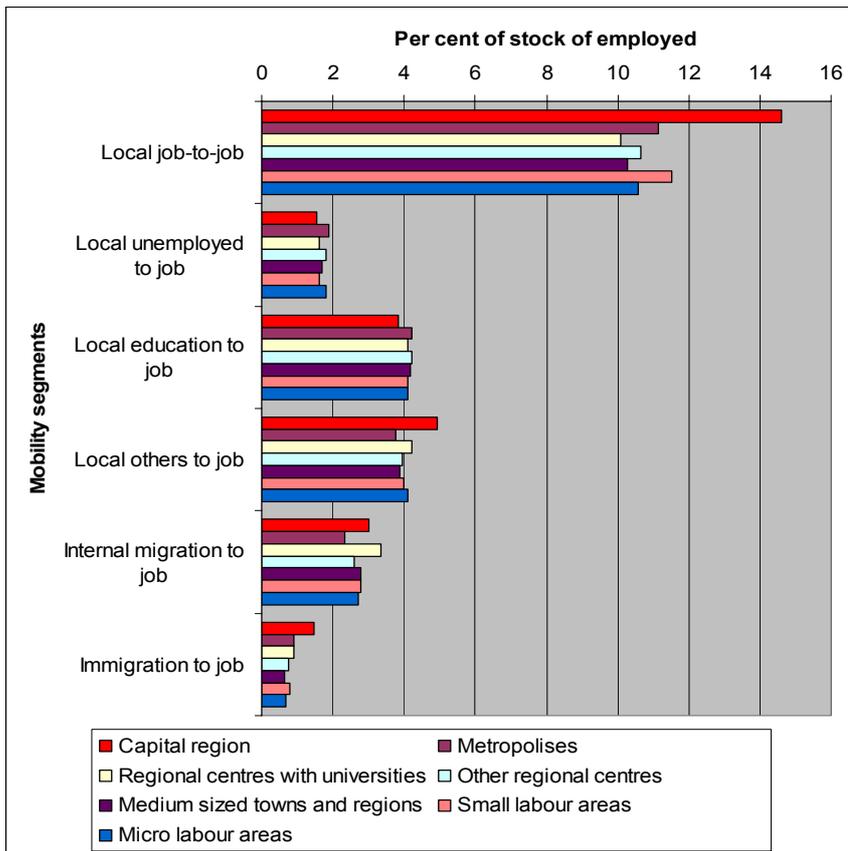


Figure 24: Gross entries to job 1997-1998 broken down by mobility segments. Seven typologies of regions in Norway

Figures 22-24 show gross mobility rates by mobility types for Norway as a whole, and for each typology of regions. Figure 25 shows the net results of these gross streams. All mobility rates are measured in *per cent* of the stock of employed in the first year of the period, which here means 1997. By standardizing the rates is it possible to measure how much each type of mobility contributes to the total gross and net mobility in the nation as a whole and in each typology of regions.

#### Gross job-to-job mobility

Figure 22 clearly shows that the most important type of mobility is the change of jobs within local labour markets. In the local job-to-job mobility each individual transition necessarily contributes to one exit and one entry within each local labour market, thus making a balance between the

exits and entries. In Norway as a whole, the *gross job-to-job mobility* in 1997-1998 were almost 12 per cent of the stock of employed and contributed to almost half of all gross mobility in the regional labour markets. Due to very strong economic growth in this period, an important part of the gross entries can also be derived from persons outside the labour force. However, the mobility from job to out of the labour force is even higher, mostly due to the age structure of employment.

The mobility from local education to job is also important, albeit of minor importance as compared to the effect of local job shifts. When experiencing low unemployment rates in most of the regions, the entries from unemployed to job represents a rather small part of the total gross entries to job, but as expected in an upswing period the entries from unemployment are significantly higher than the exits from job to unemployment. The gross effects of immigration to, and emigration from, job are also relatively small, though clearly positive in this upswing period.

Figures 23 and 24 show the same gross streams at the local level, distributed by typology of regions. The job-to-job mobility is significantly higher in the capital region than in any other type of regions. This is due to the fact that this is the largest labour market in the country, with the highest branch-mix of production and a structure of production including relatively mobile sectors, e.g. the modern ICT-sectors. The lowest job-to job mobility was observed in regional centres with a university (Tromsø) and in medium-sized towns and regions.

#### *Local unemployed to employment*

The rate of *local unemployed to employment* is highest in regional metropolises and in the micro labour areas, and lowest in the capital region. This structure is also clearly visible in the exits from job to unemployment, but with smaller figures for the capital region and in small labour areas.

#### *Education to job*

The gross streams from *education to employment* are of immense importance for the renewal of the labour market and, as expected, are much more comprehensive than gross streams in the opposite direction. Somewhat surprisingly however, it is the capital region that shows the lowest rates. Notwithstanding this, the region had the most success in activating the newly educated the turnover rates measured by the total stock of employment show the opposite effect. This is due to the fact that the ratio of the number of employed in relation to the number of persons under education is higher in the capital region than in any other regions.

### *Others – non-employed to job*

Looking at the rates from *others outside the labour force to employment* the capital region shows the highest rates in both directions. As noted previously, this is a reflection of the availability of voluntary reproductive activities in the capital region. Somewhat surprisingly however the lowest rates were to be found in regional metropolises, while the rates in the micro labour areas were higher than in many of the other types of regions.

### *Gross in-migration to job*

Gross mobility by *in-migration to job* is highest in regional centres with a university, and in the capital region. The corresponding out-migration exit-rates are clearly lowest for the capital region and regional metropolises, and highest in micro labour areas and regional centres with a university. The immigration entries and emigration exits are also highest in the capital region.

### *Net effects of multidimensional mobility*

Figure 25 shows the *net effect of this gross mobility*. When excluding the sector dimension the net effect of job-to-job mobility within each region becomes zero. The net effect of unemployed to job is strongest in regional metropolises and in small labour areas. The net effect of education to job mobility is again somewhat surprisingly lowest in the capital region and highest in medium-sized towns and regions. The exits from job to out of the labour force exceeded entries in the opposite direction in all types of regions. The strongest negative effects were to be found in medium-sized towns and regions, small labour areas and in micro labour areas. The net effect of the *internal migration to job* mobility is clearly most positive in the capital region and in regional metropolises and most negative in micro labour areas. The effect of net immigration to job is positive for all types of regions, but strongest for the capital region.

To *summarize* the findings thus far, we have found a pattern of cumulative causation. In more central labour markets, the variety of industrial branches, the size of the labour market and the growth of total demand, combine to see transitions pay better off than in other places. The freedom of choice is greater here than in other places for both the employers and the employees. The in-migration of ‘young’ labour creates a large local pool of labour with a modern education. At the same time, less central regions with slower growth, and less local career opportunities, limits local job-to-job mobility and hampers in-migration to job.

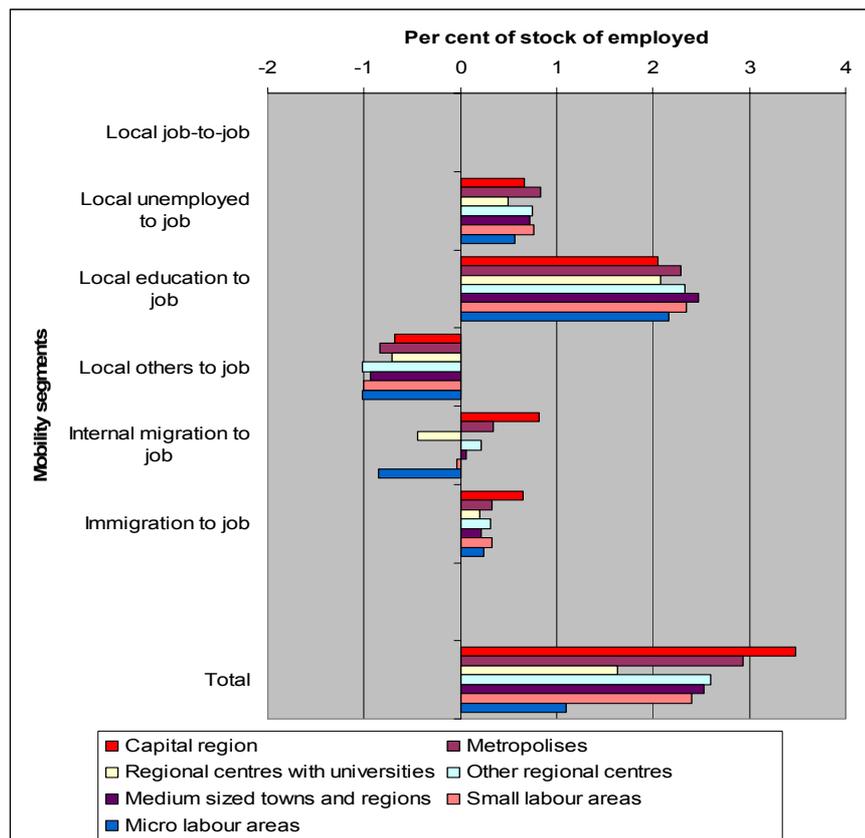


Figure 25: Net entries to job 1997-1998 broken down by mobility segments. Seven typologies of regions in Norway

***Spatial dimensions of the complex transitional labour market in Norway – a summary***

Finally and by way of a summary, we will see how the *whole set of mobility modes* contributes to the reshaping of labour markets across Norway, i.e. from education to job, from unemployed to job, from others to job, in-migration to job and immigration to job. We start by comparing each mobility mode in each typology with the national average, set at 0. This can be interpreted as *cohesion indicators* in the functioning of the Norwegian labour market.

Table 9 shows the relative mobility rates for not less than 24 groups of transitions in the regional labour markets of Norway. The transition rates are mainly defined in relation to the stock of employed by

education the first year, but the transition rates from education to job, from unemployed to job and from others to job, are measured in relation to the stock of persons under education, the stock of unemployed and the stock of persons outside the labour force respectively. There are in many transitions strong variation across the regional typologies. The best total mobility performance is to be found in the capital region for all educational levels, while the weakest total mobility performance was observed in the micro labour areas. It is also worth noticing here that other regional centres, which in total include 27 per cent of total national employment, show a total mobility performance below the national average for all educational levels. The good mobility performance of the capital region thus shows a strong contribution from education to job mobility, which means that this region has the ability to employ newly educated persons. It is also a reflection of the concentration of schools at all levels and specializations to the Oslo area. The opposite trend is to be found in the micro labour areas, where transition rates from education to job are far below the national average for all educational levels.

Figure 26 shows the clear hierarchy in aggregate relative transition rates for three education groups across the regional typology. For immigration, the pattern is less clear (Figure 27). Only the capital stands out as being a more attractive labour market for immigrants. Moreover, immigrants with a low level of education have only a low preference for University and/or Medium sized towns.

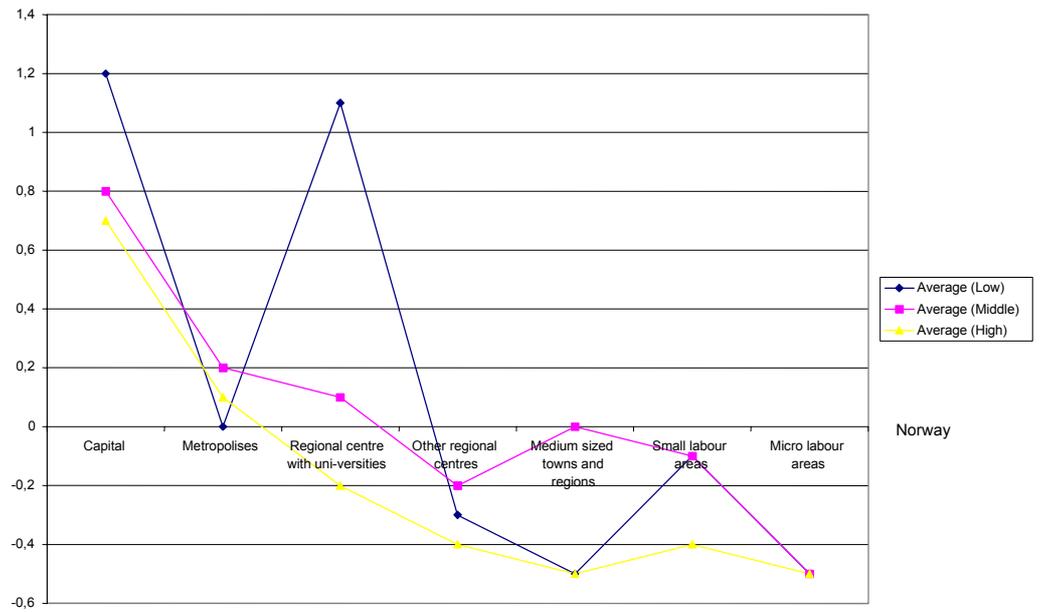


Figure 26: Aggregated relative transition rates in three education classes in each typology of region in 1997-1998: The Norwegian national average in each mobility group is set at 0.

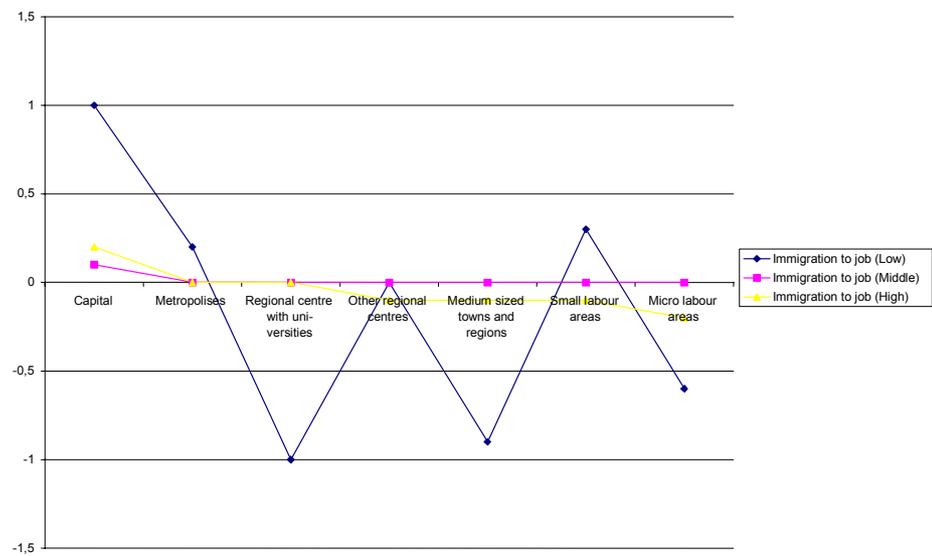


Figure 27: Relative transition rates by immigration to job in three education classes in each typology of region in 1997-1998. The Norwegian national average in each mobility group is set at 0.

### *Unique patterns in the capital region*

Measured by number of persons, the cells showing the *still in job rates* is of importance for the total mobility score. Here the capital region however shows a weaker performance than the national average, with a high level of exit from jobs in the local labour market for all educational groups. Regional metropolises, medium sized towns and regions and small labour areas all show a lower than average transition from jobs in the local labour markets for all levels of education.

The capital region also shows lower than average transitions with respect to *unemployment to job mobility*. Here regional metropolises, small labour areas and micro labour areas all show higher than average transition rates. One important reason for this regional difference is to be found in the fact that the capital region had a much lower unemployment rate, making it more difficult to employ the small remaining group of those still unemployed into ordinary jobs. On the other hand, the capital region shows a basic ability to continue to 'activate' people from outside the labour force no matter whether they had had a low, middle or high-level education.

Table 9: Transition rates by 24 mobility groups in each typology of region in 1997-1998: The Norwegian national average in each mobility group is set at 0.

Mobility group and level of education:	Capital region	Metropolises	Regional centre with universities	Other regional centres	Medium sized towns and regions	Small labour areas	Micro labour areas
Still in job local (Low)	-0,4	0,3	0,6	0,0	0,4	0,4	-0,4
Still in job local (Middle)	-0,5	0,3	-0,3	0,0	0,7	0,5	-0,3
Still in job local (High)	-0,5	0,3	-0,2	0,2	0,6	0,2	0,2
From education to job (Low)	8,0	-0,7	0,9	-1,1	-2,3	-1,6	-3,4
From education to job (Middle)	6,6	0,2	-0,6	-0,5	-0,5	-2,3	-3,7
From education to job (High)	4,0	-0,5	-2,8	-0,8	-0,6	-2,4	-3,2
From unemployed to job (Low)	-0,1	0,0	0,9	-0,8	-1,0	0,5	1,2
From unemployed to job (Middle)	-1,1	1,1	-0,6	-0,2	-0,2	0,7	0,1
From unemployed to job (High)	-0,3	0,7	-2,8	-0,7	-0,9	0,8	0,6
From others to job (Low)	1,6	0,0	1,5	-0,4	-0,6	-0,7	-0,2
From others to job (Middle)	1,2	-0,1	3,1	-1,2	-0,2	0,5	0,6
From others to job (High)	1,8	0,1	-0,2	-1,8	-2,3	-1,0	0,1
In-migration to job (Low)	0,1	-0,4	0,1	0,0	0,4	0,3	-0,1
In-migration to job (Middle)	0,3	-0,4	0,6	-0,1	0,1	0,1	0,1
In-migration to job (High)	-0,3	-0,4	1,1	0,0	0,4	0,3	0,8

Immigration to job (Low)	1,0	0,2	-1,0	0,0	-0,9	0,3	-0,6
Immigration to job (Middle)	0,1	0,0	0,0	0,0	0,0	0,00	0,0
Immigration to job (High)	0,2	0,0	0,0	-0,1	-0,1	-0,1	-0,2
Out-migration from job (Low)	0,4	-0,4	0,0	-0,1	0,0	0,0	0,1
Out-migration from job (Middle)	-0,1	-0,7	0,8	-0,2	0,2	0,3	0,9
Out-migration from job (High)	-1,4	-0,5	2,6	0,2	1,0	1,1	3,0
Emigration from job (Low)	0,1	-0,1	0,0	-0,1	-0,1	0,0	0,1
Emigration from job (Middle)	0,1	0,0	0,0	0,0	0,0	0,0	-0,1
Emigration from job (High)	0,2	0,1	0,0	-0,1	-0,2	-0,2	-0,3
Average (Low)	1,2	0,0	1,1	-0,3	-0,5	-0,1	-0,5
Average (Middle)	0,8	0,2	0,1	-0,2	0,0	-0,1	-0,5
Average (High)	0,7	0,1	-0,2	-0,4	-0,5	-0,4	-0,5

As regards *geographical mobility*, the capital region displays higher than average in-migration rates to job for low and middle educated persons, but lower than average in-migration rates for persons with a higher education, while the regional metropolises show lower than average in-migration rates to job for all educational levels. On the other hand regional centres with universities, medium sized towns and regions, small labour areas and micro labour areas all show higher than average in-migration rates to job, especially for persons with a higher education. One important reason for this regional difference is to be found in the fact that more central regions have a much higher percentage of those employed with a higher education background. This regional difference is even more pronounced in the internal out-migration rates, where those employed in the most central regions show a much lower ability to out-migrate from jobs compared to other types of regions, and especially in relation to regional centres with universities and micro labour areas. Con-

sidering *international migrations* to and from jobs there are rather small differences across the regional typologies.

To *conclude* this multidimensional analysis of differing labour market performance in Norway, we find a clear geographical hierarchy, where the rate of renewal, measured as the input of new labour from education and with higher education, is generally higher in the three most central types of labour markets. In particular, the capital stands out as the best performing monocentric region. The high rate of – voluntary – exits from employment in the capital region should probably be interpreted as a response to the diverse options for reproductive activities in the region, while at this point it would be appropriate to remind ourselves of our tentative definition of a well functioning transitional labour market:

‘A region where most transitions to and from gainful economic activity and reproductive activities are voluntary, involve low risks and offers a decent set of choices for the individual’.

### ***A diagnosis of the best and worst performing regions within one typology***

In figure 28 we show in visual terms just how the best and worst performing regions within one typology perform with respect to each specific type of mobility. As such we seek to illustrate the major mobility segments that make successful or less successful total mobility performance.

The capital region generally performs better than the national average, and is particularly successful in recruiting the newly educated into job, particularly in respect of low and middle educated persons. The attempt to move those unemployed into job is however less successful in the capital region, though they are very successful in avoiding outmigration among their highly educated employed.

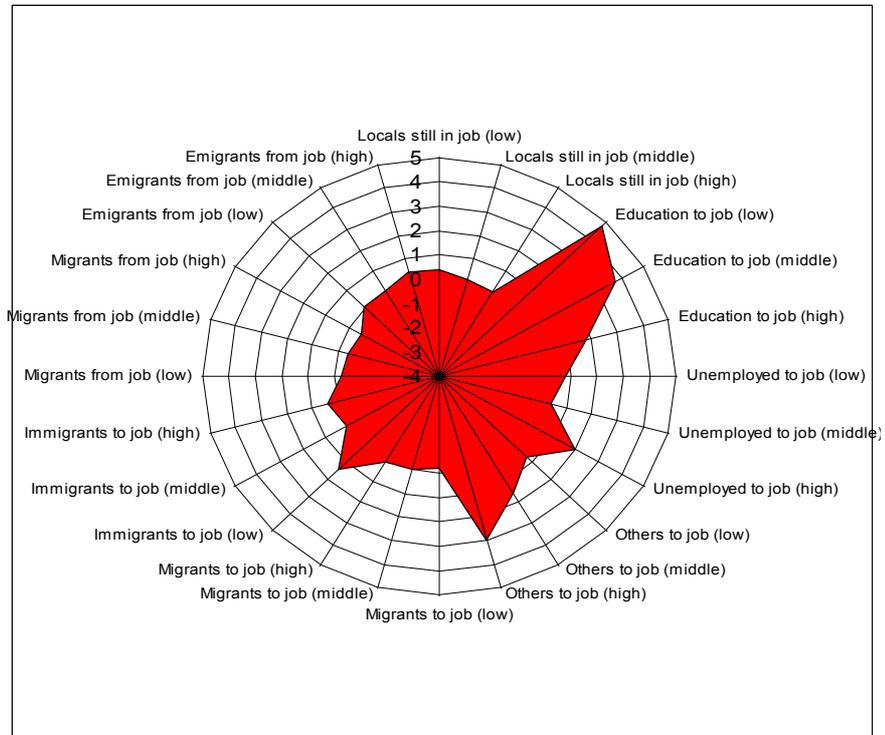
In the regional metropolises (typology 2) there are significant differences between the best performing region of Stavanger/Sandnes and the worst performing region of Trondheim. Stavanger/Sandnes as with the capital region, generally performs better than the national figures suggest, with particular success in employing those coming directly from education, and also in employing the local unemployed and other persons currently outside the labour force. The rate for immigration to job among middle educated persons is also higher than the national average figures. The less successful mobility performance in Trondheim is, first and foremost, based on its poor ability to employ the newly educated, and particularly those with a low or middle educational background.

In *summary*, the main trend separating the best performing regions from the worst performing regions within each regional typology seems to be *connected to the ability to employ persons from the educational sys-*

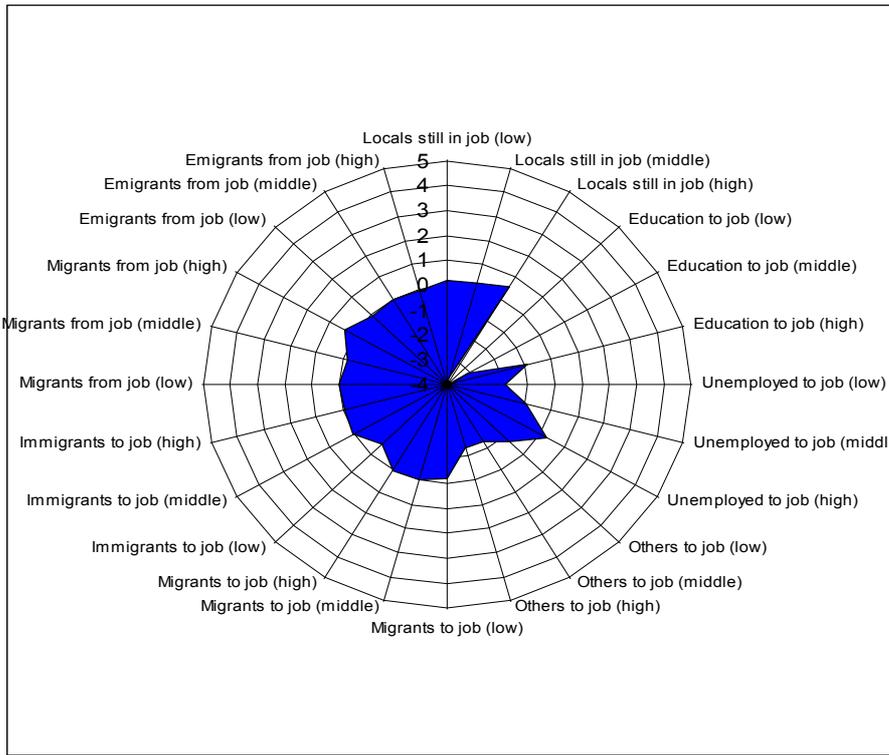
*tem*. This in turn reflects the optimism or pessimism of the persons involved as regards their becoming 'settled' in the local labour market. A poor performance as regards the ability to employ the young and newly educated is as we expected connected to higher than average out-migration from job. With respect to the total out-migration processes, there is reason to believe that the out-migration from job figure is somewhat underestimated, due to the fact that many young persons also out-migrate directly without finding a job in the local labour markets. On the other hand, the results indicate that out-migration from remote areas is not only due to the lack of jobs, because much of this out-migration is constituted by moves from an already existing job.

In policy terms, this example of a comparative diagnosis of the labour market in regions with similar structure and size points to the importance of designing *local and regional* programmes to cope with poor labour market performance.

Figure 28a-b: The best and worst performing region with respect to total mobility performance within typology 2 'Regional metropolises' of regions 1994-1999. Specific indexes of mobility performance in Norway are set at 0 each year. The specific indexes are calculated by the average mobility during the time period 1994-1999



Typology 2. Regional metropolises. Stavanger/Sandnes (best performing metropolises)



*Typology 2. Regional metropolises. Trondheim (worst performing metropolises)*

## 6. The performance of Nordic labour markets – a comparative analysis

Against the background of the labour market analysis of Norway, used in the previous chapter as a benchmark, we will now undertake a comparative analysis of labour market performance over time in a selection of regions with similar structures in the other Nordic countries of Denmark, Sweden and Finland. The comparison is based on the common typology of seven typical Nordic labour markets. The chosen periods express recent years with strong growth of employment within each country.

### *Gross transition rates*

Figures 29-32 show gross mobility rates by mobility types for Denmark, Finland, Norway and Sweden. All mobility rates are measured in *per cent* of the stock of employed in the first year of the period, which varies between the countries. By standardizing the rates it is possible to measure how much each type of mobility contributes to the *total gross* and *net* mobility in the nation as a whole and in each type of region.

Figures 33-36 clearly show that the most important type of mobility is the change of jobs within local labour markets<sup>13</sup>. As regards local job-to-job mobility, each individual transition necessarily contributes to one exit and one entry within each local labour market, thus creating a balance between exits and entries. In Norway as a whole, gross job-to-job mobility in 1997-1998 was almost 12 percent of the stock of those employed, while contributing to almost half of all gross mobility in the regional labour markets. In Sweden and Denmark, job-to-job mobility was 10-11 percent in 1998-1999, and about 8 percent in Finland. Due to very strong economic growth during this period, an important part of the gross entries also derives from persons outside the labour force. Transition from 'other non-employed' to job ranges from 2 percent (Sweden) to 4 percent (Norway). However, mobility from *job* to *out of the labour force* is even higher, due to the age structure of employment in most of the countries. Mobility from *local education* to *job* is also of some importance, though this was minor when compared to the effect of local job shifts. Transition from education to job ranges from 2 percent (Denmark) to 4 percent (in all other countries). When experiencing low unemployment rates in most of the countries, the entries from *unemployed* to *job* represent a rather small part of the total gross entries to *job*, but as expected, in an upswing period the entries from *unemployment* are significantly higher than the exits from *job* to *unemployment*. The transition from Unemployment to job ranges also from 2

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<sup>13</sup> NB The scale is not standardized in these diagrammes.

to 4 percent (Finland). The gross effects of *immigration to* and *emigration from* job are relatively small.

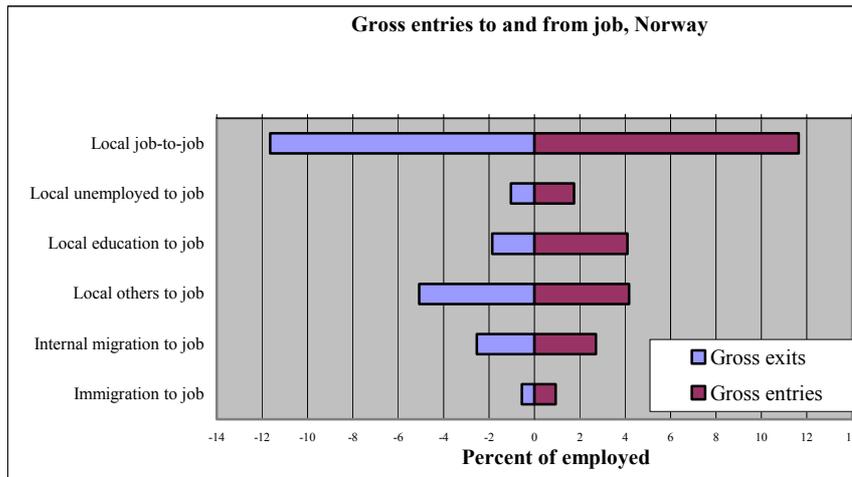


Figure 29: Gross entries to and from job, Norway 1997-1998. Broken down by mobility segments in per cent of total stock of employed

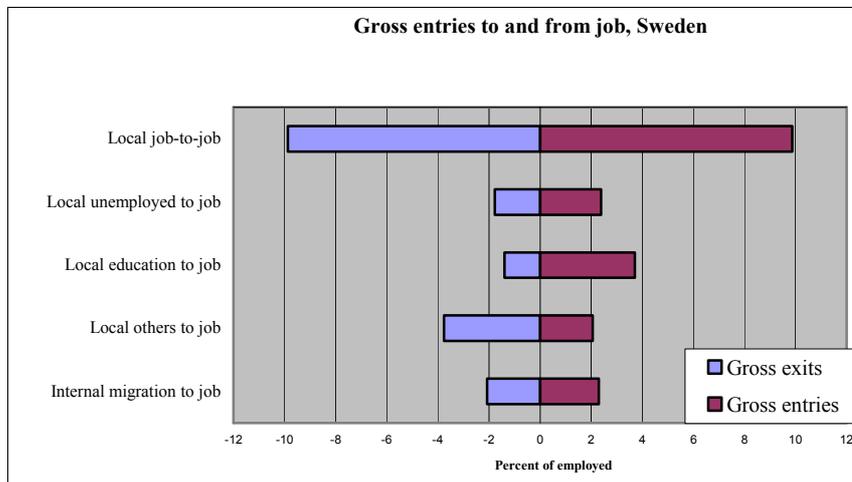


Figure 30: Gross entries to and from job, Sweden 1998-1999 Broken down by mobility segments in per cent of total stock of employed

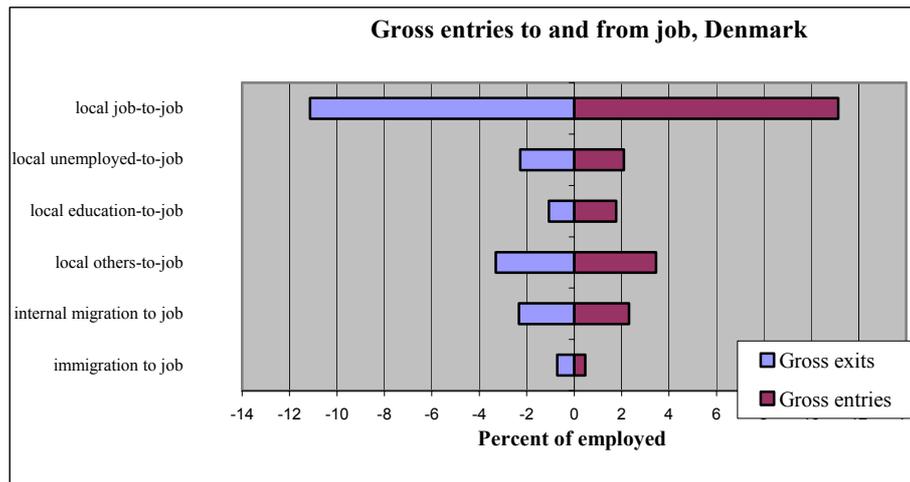


Figure 31: Gross entries to and from job, Denmark 1998-1999. Broken down by mobility segments in per cent of total stock of employed

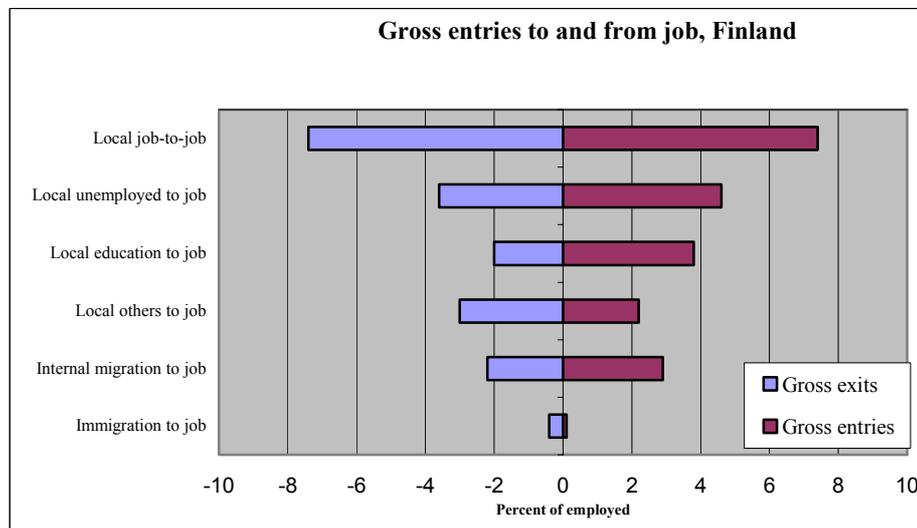


Figure 32: Gross entries to and from job, Finland 1999-2000. Broken down by mobility segments in per cent of total stock of employed.

Data: Statistics Finland

From the above we can therefore conclude that the performance of the Nordic labour markets is relatively robust when viewed from a wider Euro-

pean perspective. The employment rate is high, while labour markets do manage to activate the labour force to a great extent. As such, we can say that employment policy seems to support high employment rates, and transition.

### ***Activating the young labour force***

Another indication of LLM performance is how well they activate different age groups, as well as people with different educational levels. The capital regions/metropolises in Denmark, Finland<sup>14</sup>, Norway (and Sweden)<sup>15</sup> exhibit the strongest positive net flows of labour in the youngest age group, while the micro labour areas exhibit the lowest positive net growth (see Fig. 33-35). There are however some notable national differences. Accordingly, the inflow of young labour (16-34 years) was 10 percent in the capital area in Norway, 6 percent in Denmark, but only 3.5 percent in Finland. In Norway and Finland, the net figures for the age group 35-54 years are rather small but remain positive, except from regional centres in Norway with a university. In Denmark, on the other hand, the net figures are negative in all regions. The net figures for the two oldest age groups are generally negative and most heavily negative in medium sized towns and regions in Norway for the age group 55-64 years, and in the capital region for the oldest age group. A similar pattern is to be found in Denmark and in Finland with the net negative flows of labour in the age groups 35-65 in all regions being of particular concern to Danish policy makers.

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<sup>14</sup> In contrast to Denmark and Norway which shows age specific behaviour, all Finnish net flows are here measured in relation to the total number of employed (16-64 years)

<sup>15</sup> There is no graph representing Sweden in this respect.

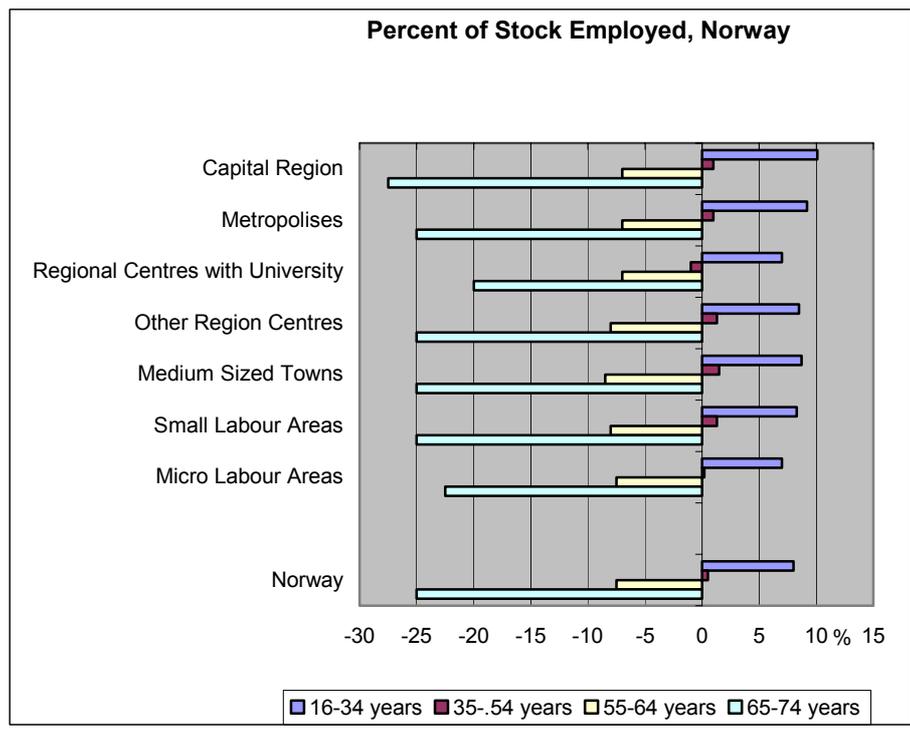


Figure 33: Net flows of labour by age groups 1997-1998 in Norway and 7 typologies of regions

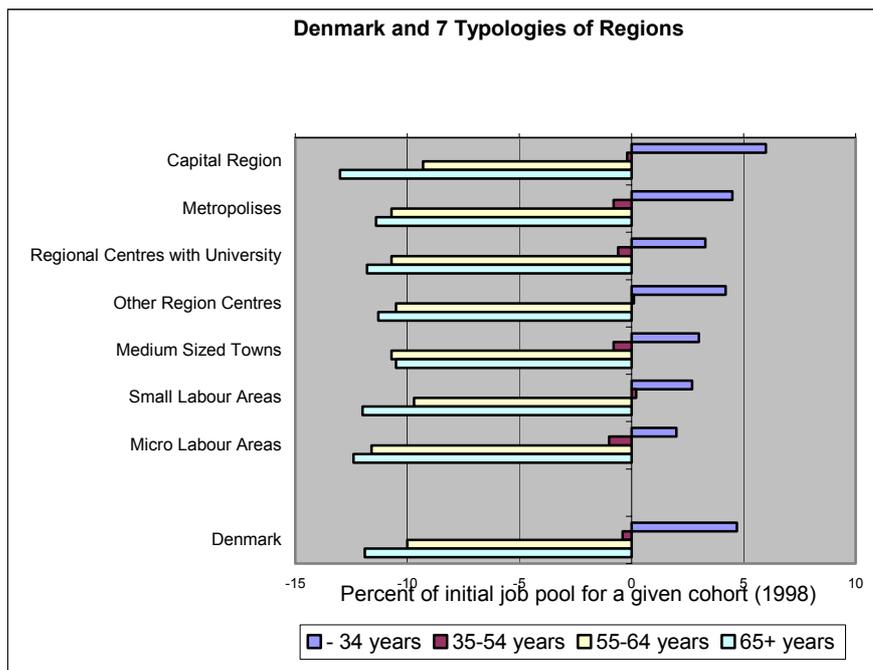


Figure 34: Net flows of labour by age groups 1998-1999 in Denmark and 7 typologies of regions

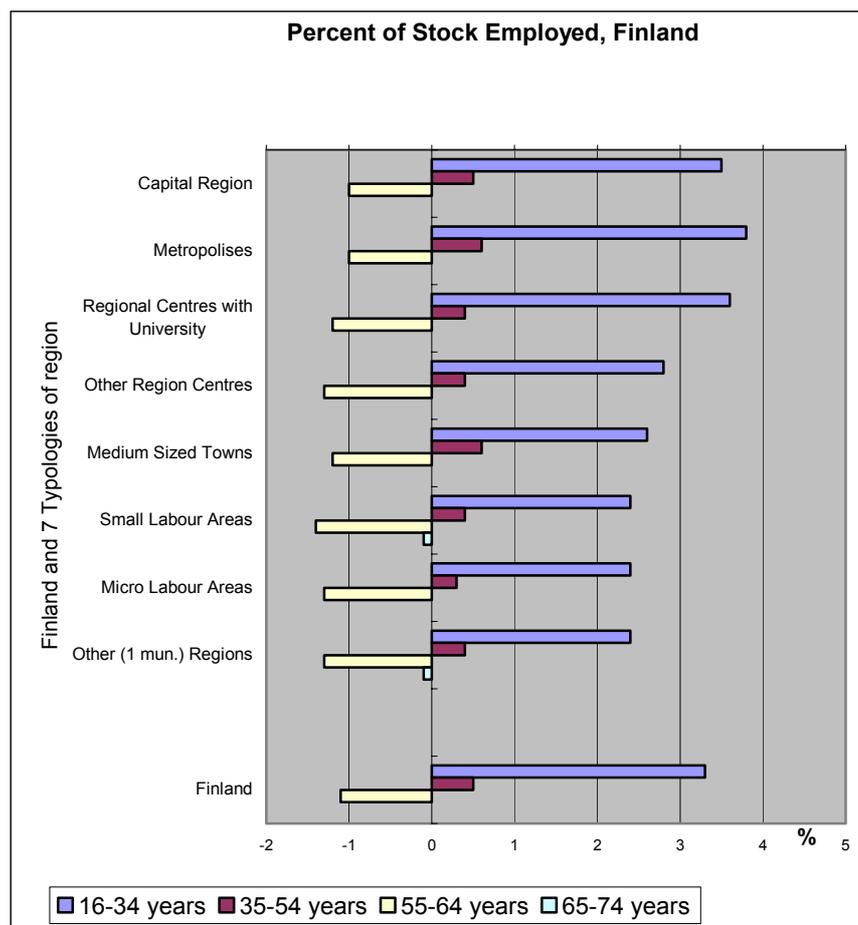


Figure 35: Net flows of labour by age groups 1999-2000 in Finland, and 7 typologies of regions. Data: Statistics Finland.

### ***Net inflow of education groups***

The positive effects of net flows of *employed with higher education* is definitely strongest in the capital region and in the metropolises across all of the Nordic countries, followed by the regional centres, while micro labour areas show negative net effects of labour flows of *higher educated employed* (see Figures 36-39<sup>16</sup>). Some national differences are however discernable here. In Denmark, Norway and Sweden the net flows of *higher educated labour* is between 1.5-3.5 percent in the capital areas, while it is only about 0.5 percent in

<sup>16</sup> NB The scales are not standardized across these diagrammes.

Finland. However, following the patterns of other countries, the rate of inflow of labour with higher education is well above the national average even in the Finnish capital. In addition, the highest net growth rates in Norway and Finland are for middle educated labour in most regions, while it is highest for higher educated labour in Denmark and Sweden. The net flows of lower educated labour are mostly negative, except from the capital regions, in most of the countries. Meanwhile Denmark's flows of *lower educated labour* is negative in the capital area, while similar types flows are highly positive for the Stockholm area of Sweden, amounting indeed to nearly 4 percent of net flows.

In this section then we have seen that the LLMs in the capital regions and metropolises, as well as regional centres with universities, all seem to perform best in the Nordic countries with regard to the activation of the labour force, while micro labour markets have serious problems in this regard.

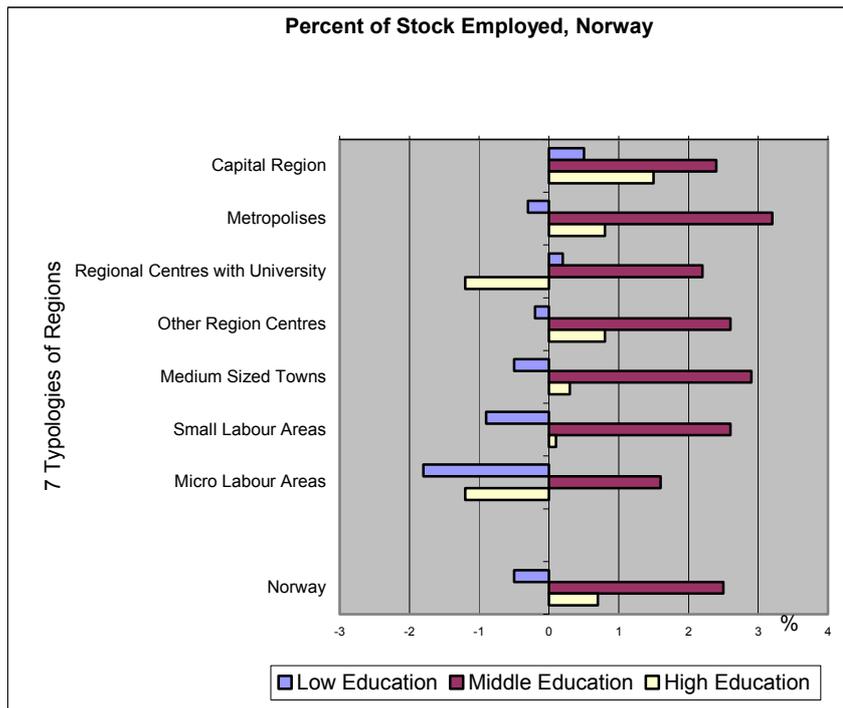
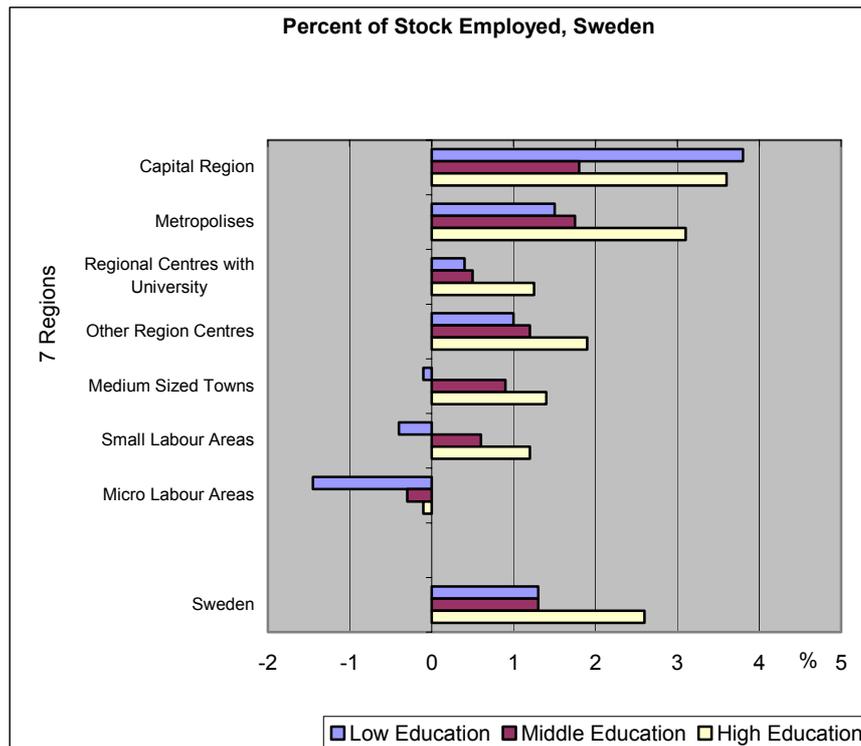


Figure 36: Net flows of labour by educational levels 1997-98 in Norway, and 7 typologies of regions



*Figure 37: Net flows of labour by educational levels 1998-99, Sweden and 7 typologies of regions*

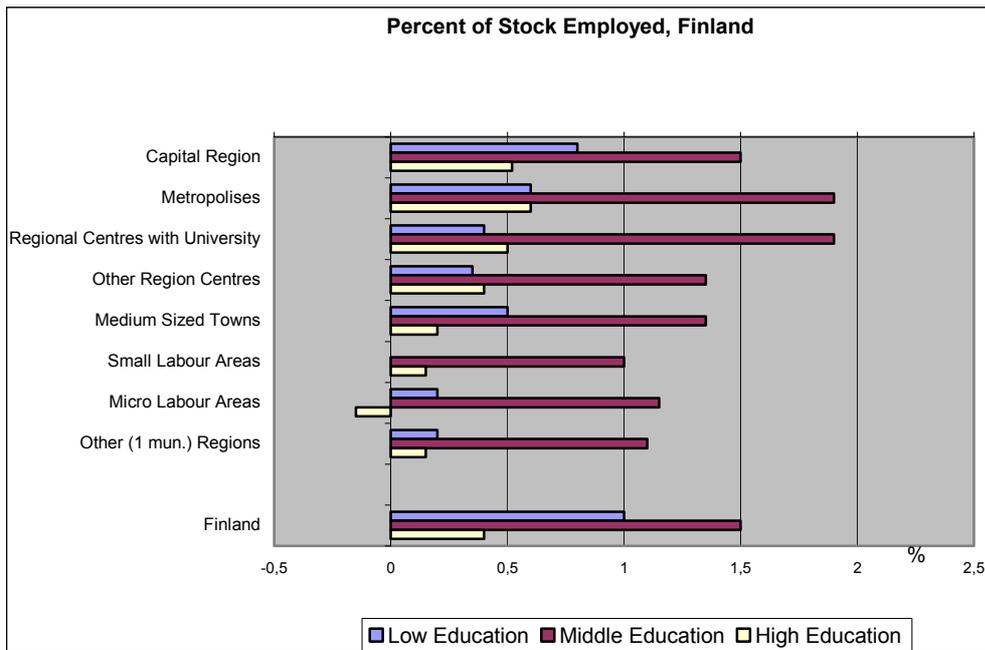


Figure 38: Net flows of labour by educational levels 1999-2000, Finland, and 7 typologies of regions. Data: Statistics Finland.

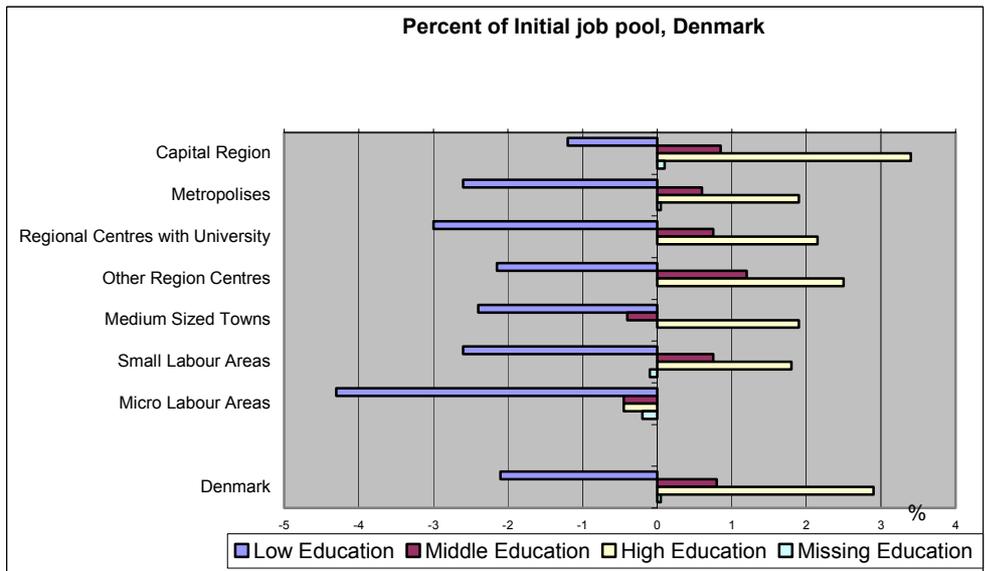
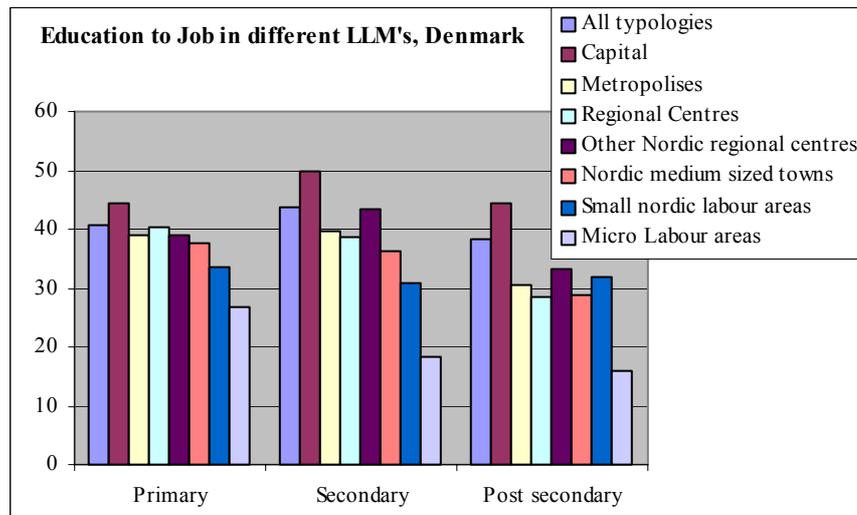


Figure 39: Net flows of labour by educational levels 1998-99 in Denmark, and 7 typologies of regions

### *Activation of labour directly from school*

In all countries, the recruitment of young people directly from the school system to formal employment is more frequent in high-ranking urban labour markets than in small ones. This is more marked in Denmark as compared to Norway. Irrespective of whether it is from secondary or post secondary education, smaller LLMs generally activate 15 percentage units less than the largest ones in Denmark. This makes a significant difference as in micro labour markets in Denmark only 18 percent of people in secondary school gets a local job the year after graduation, while this figure climbs to more than 40 percent in the largest urban regions. In Norway then the gap is thus not necessarily across the hierarchy. Moreover, levels are generally lower in Norway, which may reflect differences in registration rather than real differences



*Figure 40: Education to Employment by educational level, Denmark. Percent of total stock in specified education within 7 typologies*

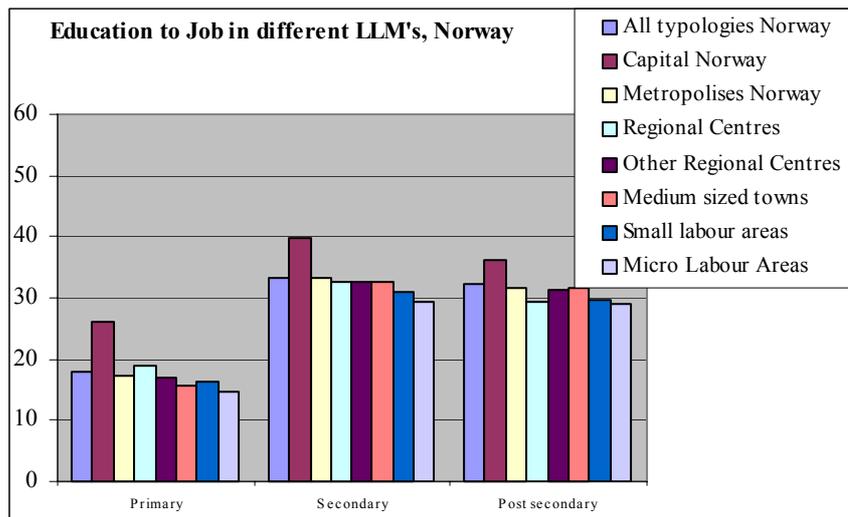


Figure 41: Education to Employment by educational level, Norway. Percent of total stock in specified education within 7 typologies

### ***Attracting in-migrants to employment***

In comparing the ability of regions of different types to employ in-migrants in the same year as their entry to the region, we find that:

- There are surprisingly small differences within a country as well as between countries. In the Nordic countries, in-migrants to job annually count between 2.5 and 3.5 percent of the total employment stock.
- There are some exceptions, such as the Danish capital region, which only employs in-migrants to the rate of 1.5 percent of the stock, and the Danish micro labour areas, which employ as many as 3.9 percent immigrants (Figure 42).

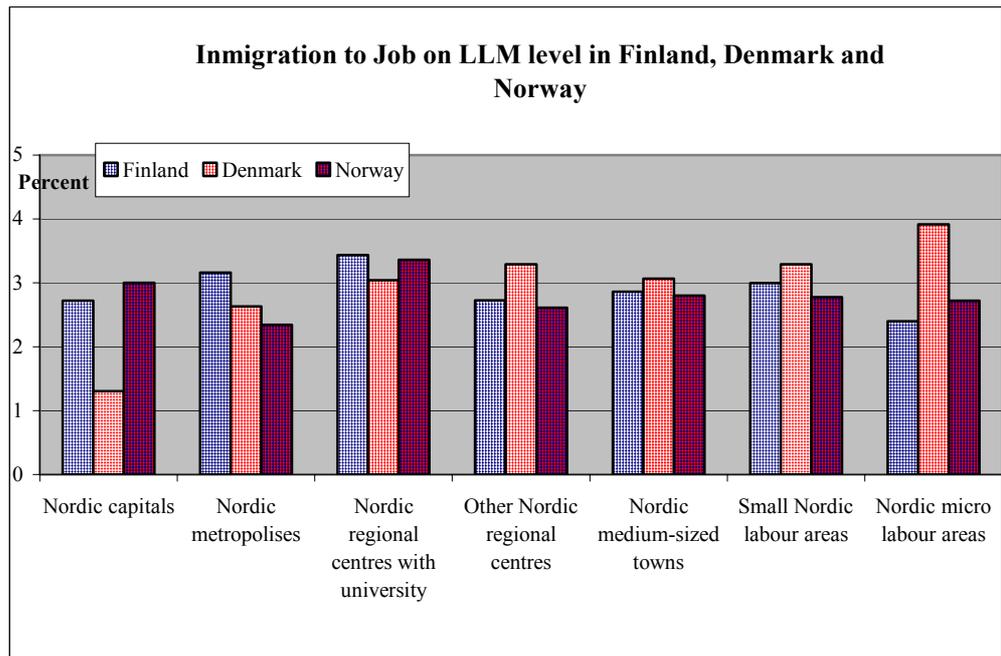


Figure 42: In-migrants to employment in Denmark, Norway and Finland (Data: Statistics Finland). Annual to 7 typologies. Percent of employment stock.

## 7. Conclusions and policy recommendations

### *The diversified structure of the Nordic labour market*

The Common Nordic Labour Market was established in 1954. According to national definitions applied in Finland, Sweden, Norway and Denmark, it consists of approximately 500 more or less independent and overlapping commuter catchment areas, or local labour markets. The performance in terms of employment and unemployment levels in each LLM in large reflects the temperature of the national macro economy and national policy. However, most labour mobility and matching processes – by far – take place only within the reach of the local area. Hence, it is relevant to argue that the performance of each national labour market in turn is dependent upon the functioning of each local labour market, its impact being weighted by its relative size to the national market. In this analysis we aim to better understand the factors behind the differing performance levels of all types of LLMs, both within and between the Nordic countries.

Throughout this study, we employ two dynamic indicators of labour market performance.

- Firstly, we analyse the efficiency of matching processes between the supply, i.e. demographic change, and the demand of labour, reflecting economic renewal in a medium term perspective (5-10 years).
- Secondly we analyse regional and national differences in the annual rate of renewal of regional economies through the replacement of old labour by the recruitment of young labour, including investments in human capital through the recruitment of labour with modern and higher education.

In terms of the width of the variation, or cohesion, in local labour markets' ability to match demographic change with employment change, this variation is currently highest in Finland and Norway, and lowest in Denmark. The latter is mainly a reflection of Denmark's small size with few independently functioning LLMs. For Finland and Norway we explain the large variation by reference to the relatively high proportion of very small or insular labour areas in these two countries, as compared to Sweden. Matching processes are less likely to be successful in any small market. Within Sweden, the demographic pressure of a changing work force is quite balanced in most regions as compared to the neighbouring countries of Finland and Norway. This could also be interpreted as an effect of strong and successful public intervention within the context of large or 'traditional' regional policy, as demographic structure and

change are long term processes and transitions. In many of the Swedish municipalities, which alone constitute a labour market, the large public sector provides local jobs in accordance to the actual demographic structure of the population. However, this could also be explained by the relatively fewer very small and fragile labour markets in Sweden.

The differing level of performance across LLMs reflects the significant variation in size and other characteristics prevailing in the Nordic area. We have identified a common Nordic typology of LLMs. The very size of the LLM in population numbers leads to a classification into *Metropolises, Regional centres, Medium sized towns, Small and Micro labour areas*. The location of universities as sources of knowledge production and for enhancing human resources and the primary characteristic function of the region in terms of the range of services provided leads us to further develop the categories into *Nordic regional centres with a university, Nordic capitals* and *Other Nordic regional centres*.

One quarter of the Nordic population (excluding Iceland) can be found in the capital regions and slightly over a fifth in the 14 other metropolises. The 77 regional centres as a whole (with or without universities) include nearly a third of the Nordic population. The largest number of LLMs are however to be found in the smallest class, 'Nordic micro labour areas' numbering 337, and thus constituting over 60 percent of all 540 LLMs. However, their population only amounts to 8.7 percent of the Nordic total although they cover 58 percent of the total Nordic land area. Their average population density is as low as 3 inhabitants/km<sup>2</sup>. Finland and Norway have some 20 percent of their population within categories six and seven, whereas in Denmark and Sweden have around 5 percent.

#### ***Four macro arenas in Norden with differing matching of supply and demand***

Looking across the common Nordic labour market in the period 1995-2002 we found that there are four major arenas for matching demographic change and employment growth.

- *Expanding balanced*  
Firstly, the major arena for balanced moderate growth both of employment (+2 to +20 percent during 6-7 years) and local labour supplies (from zero to + 10 percent). This arena was the major centre of gravity on the Nordic labour market in recent years, including the two capital regions in Sweden and Copenhagen.
- *Expanding overheated*  
The second arena for overheated matching processes, with as

much as a 30 percent increase in demand, but only a 10 percent increase in local supplies. The capital regions of Norway and Finland are the primary representatives for this type of matching problem.

- *Shrinking overheated*  
The third arena faced similar problems of overheating, in this case caused by the mismatch between the slow growth of demand (from zero to + 10 percent) and the decreasing size of the local labour force (zero to – 10). In this problematic zone, we find numerous of small and micro labour areas in all Nordic countries.
- *Shrinking balanced*  
Fourthly there is an arena encompassing a number of micro areas experiencing a shrinking labour market, which is however almost balanced by an ageing and decreasing local population.

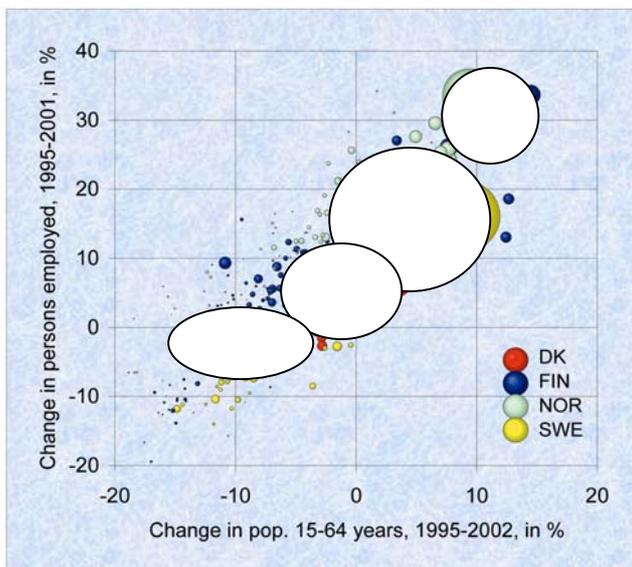


Figure 43: Four macro arenas for matching demographic change and employment growth in Norden (excl. Iceland). 1995-2001/2

### ***The transitional characteristics of local labour markets***

In order to understand the differential performance of LLMs, and to be able to evaluate the impact of policy within the entire employment system, we need to analyse the transitional characteristics of modern labour markets. On the transitional labour market, shifts in employment status

are frequent: from and to industrial sectors, education, voluntary time-out from formal labour market, unemployment, sickness leave and to early or old age retirement.

The *transitional* characteristics of the labour market should thus now be seen more as the norm than as the exception. Each transition or career – such as those from school to job and *vice versa*, from parental or sick leave back to job, from unemployment to job, etc – can be temporary and repetitious. Transitions can happen during the week, the month or year, and inevitably several times over the individual lifecycle. There are a number of theories explaining this increasingly transitional labour force behaviour stressing the individual choice of life-style, and life chances or careers perceived in different places. Transition itself is sometimes enforced by policy intervention to encourage temporary leave for life-long learning periods and parental leave. This transition can thus be viewed as a supplementary dimension to labour mobility, i.e. qualification or de-qualification careers, inter-industry mobility and inter-regional or international migration. The theory of the transitional labour market explains labour market performance more as a response to aggregates of individual careers, than as collective demand/supply matching processes guided by wage signals.

Let us look at and compare the current transitions going on in Nordic labour market.

- Firstly, *gross exits* from the labour market act indirectly as the generator for renewal through the recruitment of younger and better-educated labour. In most settings, annual exits, as well as entries, correspond to some 8-9 percent of the stock of labour in any labour market. Retirement and pensions constitute less than 50 percent of all exits. This means that *other voluntary and less voluntary exits* are important to consider in analysis of labour market transitions and when discussing policy measures in different sectors to reduce non-voluntary transitions.
- Secondly, *local job-to-job mobility* (inter-industry) is an almost equally important aspect of labour market performance constituting some 10-11 percent annually on average for Norway, Denmark and Sweden. Finland's labour market seems to be less flexible for job-to-job mobility with an 8 percent turnover. This is, to a large extent, caused by the relatively high unemployment rate in most regions in Finland. The regional variation across the Nordic typology is some 2-3 percentage units, with the highest numbers in larger regions

with diverse economies. In general, high mobility rates indicate flexibility. In more diversified and expansive LLMs, inter-industry change is generally beneficial for both the economy and the individual, while in smaller and contracting or less expansive LLMs the contrary situation prevails. There, the restructuring of old industrial sectors pushes labour towards the few vacancies open in other – more likely dissimilar - sectors, which may include the inefficient use of, and/or less returns to previously acquired skills.

The multidimensional mobility to and from jobs shows a variation within the same LLM typology in any country. Poor performance in gross and net mobility to employment from different status could be used in benchmarking analysis, as a basis for place specific policy orientations. National labour market and other policies cannot fully cope with local market failures.

In spite of the differential macro performance of the national Nordic labour markets by the end of the 1990s, the performance along the hierarchy of local labour market typologies shows a common Nordic pattern. The capital regions all provide the best opportunities in the country for successful transitions, whether it be to job careers in the diversified industrial sector, to further education or to voluntary time-out from formal employment. We interpret this quite stable spatial pattern of labour market performance as a reflection of the continuing importance of the welfare state in all countries, reducing the risks of negative or non-voluntary transitions and compensating weak regions via massive public intervention both at the municipal and individual levels.

If we consider all transitions – except those from employment to unemployment or to sickness leave – to be the result of individuals' free choice, in the average labour market, between 10 and 15 percent of the workforce make voluntary changes in attachment to the formal labour market. In addition, the 10 percent job-to-job mobility score gives us an impression of the importance of well functioning matching processes and coordination between the employment and adjacent systems, i.e. the education and the social security systems. The major issue is that 60 percent of the Nordic labour markets are small so called micro labour market, which means that the diversity of choice is very limited both for employers and employees. This is an emerging major challenge to social policy, but perhaps of less importance for the macro economic policy.

### ***Renewal driven by demographic change***

From a demographic typologization of LLMs according to the natural and migratory components of population change until 2002, we found that:

- Demographic Type 6 – both natural population decrease and net out-migration – is overrepresented in Sweden and Finland as compared to Denmark and Norway. It should be noted moreover that in Finland and Sweden, *two thirds of their LLMs can be labelled, type 6.*
- Another difference is the more positive population development trends in Denmark and Norway – in Denmark 56 percent of LLMs saw a positive population development, while in Norway the corresponding figure was 35 percent. This relates in particular to *Demographic type 2 areas – which show a natural population increase but still suffer from net out-migration – a phenomenon that was much more frequent in both Norway and particularly in Denmark.*
- *In Finland – on the other hand – population development was much more polarised from a regional point of view during the period 1992-2002 – only 10 percent saw a positive population development and this was concentrated to the metropolitan and large city areas and to university towns and their surroundings.*

Almost all LLMs in the Nordic countries suffering from depopulation trends are small in size and geographically dispersed within vast sparsely populated regions. The prospects for the turn around of these demographic trends however remain gloomy. Policy intervention thus has to prioritize the support of basic welfare to the ageing population. Fortunately, the total population in areas of this type is quite small, this entailing less of a strain on welfare budgets.

There are however regions which, in spite of the natural decrease in population, experience positive or balanced migration. These regions prove that they are attractive as places of residence, and local and regional policy should focus on the further improvement of the built and natural environment in such areas.

Net migration is shown to be the most important factor behind total population change in Nordic regions. As we know that net numbers are only a small fraction of gross migration, and that gross migration is quite similar in frequency in different regions, more effort should thus be put into searching for the policy instruments that best stimulate in-migration, such as for example, decentralized higher education systems, which have

been traditionally been seen as an important element in attracting in-migrants.

In Finland, for example, it is discussed about active immigration policy which could be one solution for lack of future labour force. Väestöliitto, (The population Federation, 2004) in the population policy programme presents that there should be created an active population policy for Finland. In 2003, 42 percent of the population growth in the country occurred because of positive net migration. Also fertility rate concerns the Population Federation because the average age of the woman getting her first child is 28 years.

### ***Renewal by human capital investment***

In modern labour markets, which increasingly depend upon knowledge based service- and goods-producing industries; the supply of human resources is essential for the efficient renewal of the economy, the level and age, or *vintage*, of formal education of those entering the labour market can be used as an indicator of the rate of renewal of the economy as a whole.

Economic renewal through high rates of activation of young people directly from the school system – i.e. through the harvesting of a recent *vintage* of human capital – is more frequent at the top of the urban hierarchy in all Nordic countries. As such, the net recruitment of higher educated labour follows slope from Capital to Micro-regions, while the latter see a negative net inflow of well educated labour.

Women moreover tend to be more mobile both out from, and back into, formal labour than are men. In some settings, twice as many women as men leave for a period of further education, and more women than men take periods of parental leave and other non-employment activities.

### ***Industrial and innovation-driven economic renewal***

At the sectoral level, ‘old’ labour leaves its jobs for several reasons: changing to a new job in another sector, for further education, unemployment, retirement, migration etc. The subsequent gross entries are extremely important in analysing the anatomy of economic renewal. We concentrate here on the mobility of higher educated labour to both mature industrial sectors and modern knowledge-intensive sectors. We assume that labour with qualified education contributes to the improvement of the economic performance of any sector. On average, new entries and inter-industry mobility correspond to more than 20 percent of the stock of labour with higher education in most Nordic economies. In sectoral terms it is the financial sector and the ‘new economy’ sectors of ICT-Wholesale and Knowledge intensive business services (KIBS) that show the highest

gross entry rates of well qualified employed. The lowest rates are to be found in the sectors of health and social work and in the educational areas. The capital regions show higher positive net effects in the KIBS-sectors than the national average, while the net effect in the finance sectors were slightly below the national average.

***Better 'flow management' for stronger labour markets – a few final comments***

The Nordic labour markets are, nationally speaking, among the most robust in Europe.

Unemployment, with the exception for Finland, is well below the EU average, and the employment rate is consistent with the Lisbon target for 2010 of 70 per cent, ranging from 84.6 percent for Iceland, to 68.1 percent for Finland.

Regional variations are nevertheless enormous with the numerous smaller labour markets being hardly viable. This may call for a specific Northern Dimension policy measure to be adopted.

Delving a little deeper discover that the picture is somewhat more nuanced. Noting that the most important flows in the labour market are local job-to-job flows, the ability of these labour markets to generate population growth varies considerably. The *local* mobility is striking on any labour market: Some 20-25 percent of the labour force changes position in the labour market during one year. On larger markets, most of these changes are voluntary and also beneficial to the individual. There, more people change career to a better job. More people take *time-out* for a period of continued education, etc. In the smaller markets however, transitions are less frequent and less voluntary – e.g. leading to seasonal unemployment, to a less well-paid job, or to long term sickness leave. Here, the narrow sector structure offers fewer alternatives and many people are thus trapped in demanding routines in delivering personal services. Long-term sickness periods and early retirement are frequent exits from many of these small Nordic labour markets.

It should moreover also be noted that 60 percent of all local labour markets – there are in total some 500 more or less independent commuter catchment areas in Norden – are defined as small or 'micro labour areas' containing, in total, less than 10 percent of the labour force in the common Nordic market.

The pattern thus emerging is one of size mattering; the larger labour markets generally see better population gain, whereas those falling into the negative categories tend to be smaller in size. On further analysing the labour market components this picture becomes even clearer. The capital regions, metropolises, and the regional centres with universities,

are particularly well endowed, while what are labelled ‘micro labour markets’ continue to suffer from serious problems.

Generally speaking, it can be concluded that the national employment policies of the Nordic countries are able to activate the larger local labour markets, while their inability to do likewise for smaller labour markets suggests that a more precise policy is needed for such areas.

This poses a number of problems, as the options for good transitions in these regions are extremely limited and perhaps even decreasing over time. Traditional policy instruments have not been able to establish the labour markets in question above a critical mass, and indeed it can legitimately be asked whether any of these labour markets will ever become ‘functional’ labour markets in the true sense of the word. In essence, most of these areas continue to be dominated by a secondary labour market, based on publicly subsidized employment, while the ageing populations in these regions continue to demand services from the shrinking – and also ageing – local labour force.

A future challenge for policy-makers as for academics then is to attempt to chart how it could ever be possible to ‘make transition pay’ in these parts of the European space. In a wider context the challenge could be to develop a Northern dimension to European policy development seeking out a broader framework that will help attract young, well educated workers to such areas. The need for closer cooperation between – and not least more flexible practices in – all relevant policy systems at the local level is obvious, including social policy, schools, the service providers and the employment agency. The beacon for such a policy should be better ‘flow management’, i.e. highlighting the need to attract, guide and train labour for interesting and new careers in both the productive and the reproductive spheres.

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## Appendix 1

### *Methodology: A 'vacancy-account' for gross-stream analyses in regional labour markets*

Lasse Sigbjørn Stambøl

This section presents a short overview of the calculation methodology and definition of concepts being used in the Norwegian results in chapter 5, the Nordic comparisons made in chapter 6 and in part of the other nation's presentations in the appendix below.

#### *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 in the labour market. Consequently 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 illuminating the annually gross-flows between the statuses. Figure A1:1 illustrates how this regional labour market indicator is measured in a so-called 'vacancy account'. Concerning the 'vacancy accounting', we basically deal with the filled in vacancies in the regional labour markets, which means that the average stock of unfilled vacancies is not taken into consideration.

The vacancy account represents a new and consistent way of measuring vacancies in labour markets. Normally such vacancies are considered as the stock of unfilled vacancies at a certain point of time, or the average stock of unfilled vacancies for a certain period of time, e.g. one year. The number of unfilled vacancies is based on registers, which may be vulnerable due to different resources used for the registrations of vacant jobs both over time and across regions. However, the number of unfilled vacancies generally reveals a clear underestimation of the real number of vacancies in the labour market. The total vacancy account is defined such 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 (A) is higher than the outgoing stock (B), not all employment exits will be replaced, and vice-versa, if (B) is higher than (A), the total employment recruitment will exceed the employment exits. The total employment recruitment is thus the result of the account, representing the filled in vacancies from year  $t$  to year  $t+1$ . Initial analyses made in

the Nordic countries show that the leaving processes generate a very high share of the vacancies in the regional labour markets. A measure of structural change in the different local labour markets appears by breaking down the total figures by different sectors and segments. This is of course of great importance, because we expect that there will be clear differences in the leaving and recruiting processes due to different development by sectors and segments in the local labour markets.

This vacancy account will of course not give a complete measure of all transitions in the labour market. The number of vacancies remains dependent upon the definition of the number of sectors involved. Job-to-job mobility (the cross sector exchange) will of course increase with use of a more disaggregated industrial structure, and decrease through use of an aggregated industrial structure. The basic statistics open up the possibility to use a five-digit level of the SIC94 (Standard Industrial Classification) based on the EU standard NACE (Nomenclature générale des Activités économiques dans les Communautés Européennes). This includes almost 650 branches. Analyses operating at this disaggregated level may, however, be very vulnerable to annually statistical replacements and even misplacements between branches, thus measuring fictive transitions in the labour markets. This project however uses a more aggregated industrial structure, including altogether 28 sectors and one unspecified sector. The sector classification is to be found in figure A1:3. In part of the analysis we do however aggregate the sectors even further into 11 main sectors and one unspecified sector. This aggregation of sectors is to be found in figure A1:4 where the figures in brackets refer to the numbers of the sectors in figure A1:3.

Figure A1:1: 'Vacancy-account' for gross-stream analyses in regional labour markets

A. Entering stock: The number of employed in sector <i>s</i> in Region <i>r</i> in year <i>t</i>	
EX. Employment exits: - To other employment (job-to-job mobility) - To unemployment  - Out of the labour force <i>(Further education)</i>  <i>(Retirement - Age)</i> <i>(Other insurance)</i> <i>(Emigration)</i> <i>(Dead)</i>	Type of mobility:  (1) Out-migrated from the region (geographical mobile)  (2) Not migrated from the region (local mobile)
= Total employment exits	
EN. Employment entries: - From other employment (job-to-job mobility) - From unemployment - From education  - From others outside the labour force	(1) In-migrated to the region (geographical mobile)  (2) Living in the region (local mobile)
= Total employment entries (represents in this analysis the filled in vacancies from year <i>t</i> to year <i>t</i> +1)	
B. Outgoing stock: The number of employed in sector <i>s</i> in region <i>r</i> in year <i>t</i> +1	

The number of *filled in vacancies (EN)* in each region, sector and segment appears as follows:

$$\underline{EN} = B - A + EX$$

B = is the number of employed in year *t*+1

A = is the number of employed in year *t*

EX = is the number of employed in year *t* that left a job before year *t*+1.

*Figure A1: 2 Sector classification (detailed)*

1. Primary/mining
2. Manufacturing, Raw material
3. Manufacturing, Labour intensive
4. Machine/Transport production
5. ICT-Manufacturing
6. Electro
7. Printing and Publishing
8. Energy
9. Pharmaceutical production
10. Construction
11. Retail, recreation, culture and sport
12. Hotel and restaurant
13. ICT-Wholesale
14. Other Wholesale
15. Transport
16. Post and courier activities
17. \* Telecommunication
18. \* Activities auxiliary to financial intermediation
19. Finance (bank, insurance, real estate and renting of machinery)
20. Renting of office machinery and equipment inclusive computers
21. \* Information technology
22. \* Research and development
23. \* Other business activities
24. Activities of membership organisations and other service activities
25. Education: Basic education
26. Education: Higher education
27. Health and social work
28. Public administration
29. Unspecified sectors

\* Represent the KIBS-sectors (Knowledge Intensive Business Services)

*Figure A1:3 Sector classification (Decided aggregation)*

- |  |
|--|
| <ol style="list-style-type: none"><li>1. Primary/mining (1)</li><li>2. Manufacturing (2,3,4,6,7,8)</li><li>3. ICT-Manufacturing (5)</li><li>4. Construction (10)</li><li>5. Distribution services (11,12,14,15,16)</li><li>6. ICT-Wholesale (13)</li><li>7. KIBS (Knowledge intensive business services) (17,18,21,22,23)</li><li>8. Finance (bank, insurance, real estate and renting of machinery) (19,20)</li><li>9. Education (25,26)</li><li>10. Health and social work (27)</li><li>11. Public administration (24,28)</li><li>12. Unspecified sectors (29)</li></ol> |
|--|

(Numbers in brackets refer to the detailed classification above)

*Data compatibility and availability*

Organisation of data: Annual transitions: Year  $t$  to year  $t+1$  in the period of strong growth of employment.

In Norway 1997-1998.

In Denmark and Sweden 1998-1999.

In Finland and Iceland 1999-2000.

Labour market transitions to be included:

1. *From education to job and vice versa*
2. *From unemployment to job and vice versa*
3. *From others to job and vice versa*
5. *From job to job*
6. *Migrants and immigrants to job/migrants and emigrants from job*

Variables to be included

1. *Gender*

2. *Age*

Age groups: 16-34, 35-54, 55-64, 65-74

3. *Educational level*

Three educational levels as previously used in the Nordic projects:

A. Lower education: NUS2000 = 0,1,2 and 3.

B. Secondary education: NUS2000 = 4 and 5, and

C. Post secondary education: NUS2000 = 6, 7 and 8.

(NUS2000 at one digit level)

*4. Sectors*

12 sectors included unspecified sector

*5. Regions* A classification of regional types used by Nordregio (7 typologies)

## Appendix 2

### *Labour market performance at the turn of the millennium in Finland*

Elli Heikkilä

#### *Age structure*

The age structure of the labour force in 1999 varied particularly in the younger groups, i.e. 16-34 years olds, when look at in the context of the seven typologies of regions in Finland (Figure A2:1). The most favourable structure was to be found in the capital region and the proportions of this age group diminishes step by step towards the micro labour areas. The share of 16-34 years olds in the capital region is 36 percent, while in the micro labour areas it is only 25 percent, which is well below the national average of 32 percent.

With regard to 35-54 years olds, the micro labour areas have the highest proportion (62 percent) while the lowest figure is to be found in the capital region (53 percent). In the older age groups the regional differences are not so marked, although the micro labour areas again have the slightly higher proportions.

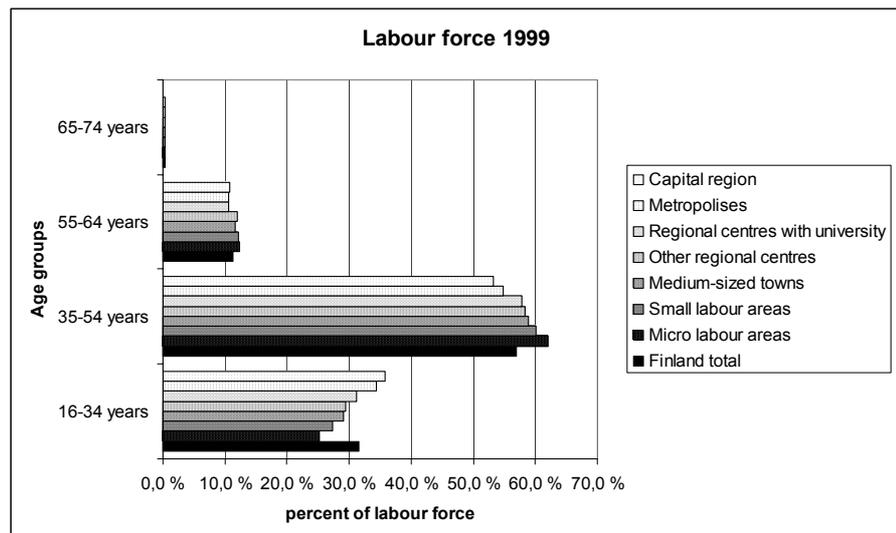


Figure A2:1 The age structure of the Finnish labour force in 1999 – by 7 typologies of regions (Data: Statistics Finland).

### *Demographic renewal, activation and the retirement of labour*

The demographic renewal of the labour force measured as the net in-flow to employment in the age group of 16-34 years olds is highest in the capital region (3.5 percent), metropolises (3.8 percent) and regional centres with a university (3.6 percent). In the small labour areas and micro labour areas the figure is only 2.3 percent.

The highest net in-flow from local education to job is found in the regional centres with a university (Figure A2:2). This shows how important the educational institutions are for these areas to generate new labour. The activation of those unemployed to job has also been an important factor in these labour markets, and the share of this net in-flow has again been highest in the regional centres with a university. The net in-flow of the local others to job was however relatively even across the different regions.

Migration plays an important role among 16-34 years olds, with this group also being the most active in migration terms. The capital region is gaining from this net in-flow while the smaller labour market areas consistently face a negative net-inflow i.e. these regions are losing that segment of the population that is in the most active age for work, to the other regions. Immigration is still low in Finland, with its impact on the labour markets being comparatively minor as can be seen from Figure A2:2.

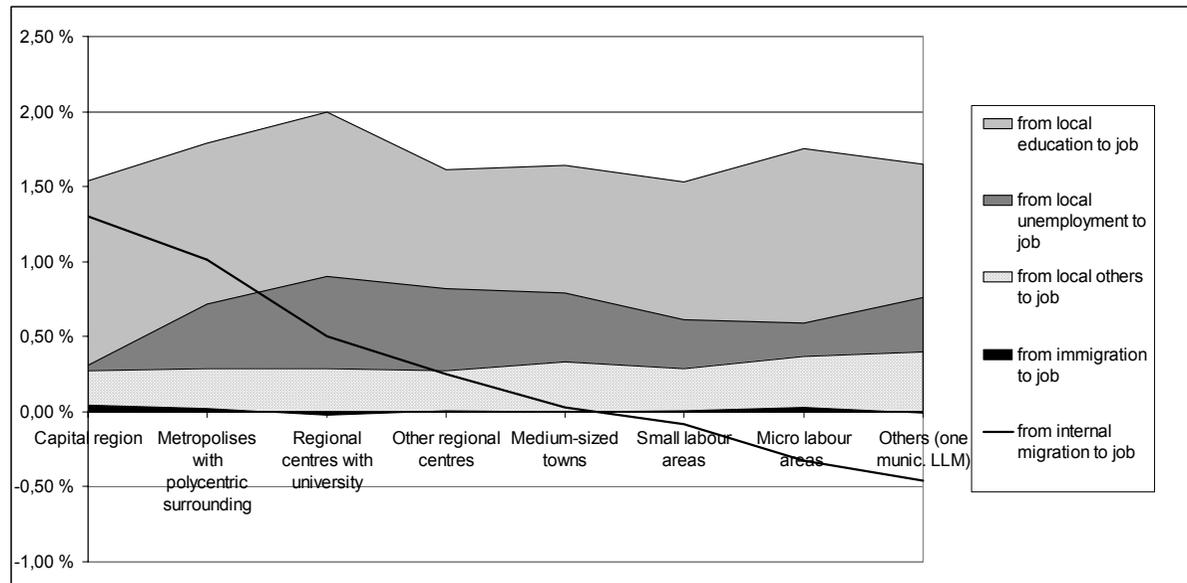
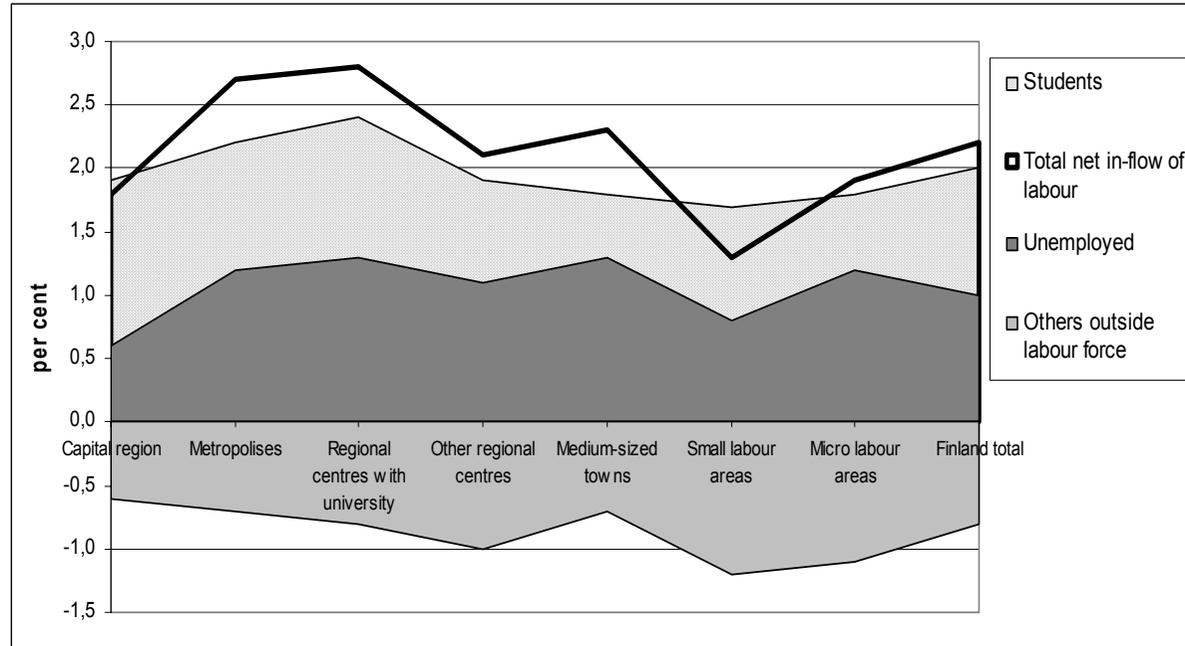


Figure A 2:2 Net in-flow to employment of 16-34 years old in 1999-2000 by 7 typologies of regions in Finland. Percentage of stock of employed 16-74 year olds in 2000 (Data: Statistics Finland).

The working age population of 16-74 years olds and their net in-flow to employment from three pools is shown in Figure A2:3. The total net in-flow of labour is highest in the regional centres with a university and in the metropolises. Surprisingly, the capital region has a lower net-inflow than these two region types, with its score in this category even being slightly below the national average. The net in-flow of students is highest in all seven typologies of regions, in which the most positive development is in regional centres with a university. The net in-flow from unemployment is lowest in the capital region, with again this being well below the national average. In other regions the figure is of a similar level, except for the small labour areas. Others outside labour force have a negative balance in all regions, which means that more people have moved to this group than have been activated to employment in Finland.

Figure A2:3 Net in-flow to employment of working age population from three pools in 1999-2000 by 7 typologies of regions in Finland (Data: Statistics Finland).



Retirement provides an important flow as regards the deactivation of labour, and in Finland the average retirement age, 59 years, is below the OECD average level of 61 years. In Figure 4 it can be seen that the net exits to retirement among those who are 55+ is greatest in the small labour areas and in the micro labour areas. This is one sign pointing to the older age structure of the labour force here (see Figure A2:1). It is interesting to note however that there is also increasingly now a flow of people from retirement to employment, although the share is small in all regions.

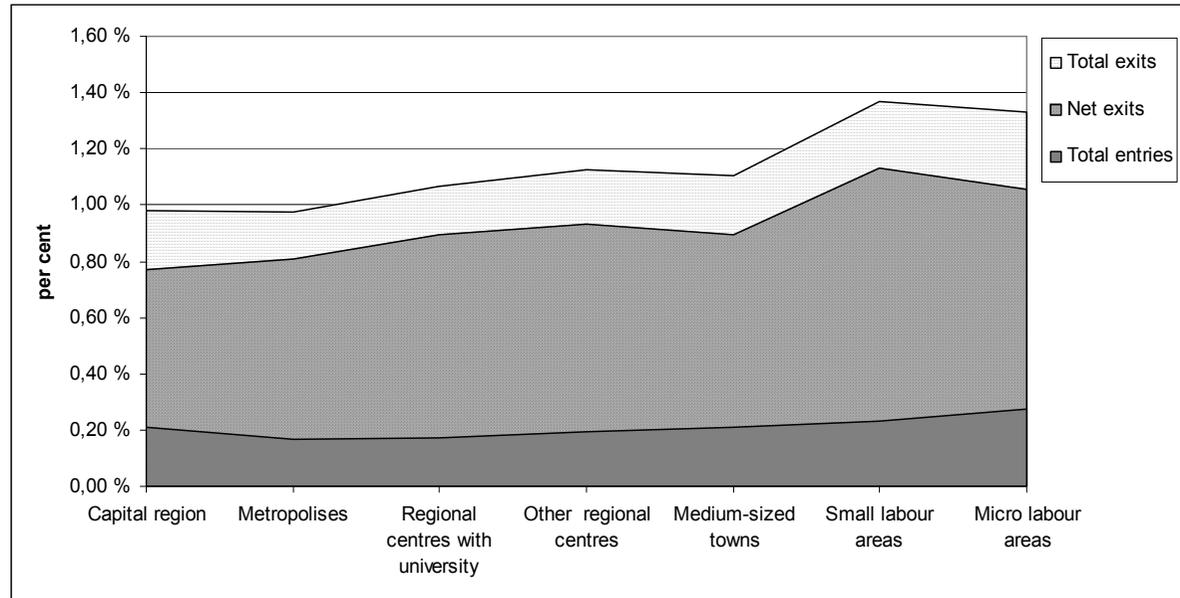


Figure A2:4 Net exits from job to retirement of 55+ year olds in 1999-2000 by 7 typologies of regions in Finland. Percentage of stock of employed 16-74 year olds in 2000 (Data: Statistics Finland).

*Amount of jobs and net-inflow to economic sectors*

In terms of unemployment, Finland underwent the most negative depression period among the Nordic countries. From the low point of the worst depression year of 1993 the number of jobs in all seven typologies of regions has increased (Figure A2:5). In absolute numbers, it can be seen that the number of jobs in the capital region has grown by nearly 160 000, with the growth percentage being over 30 percent during the period 1993-2000. The growth rate in the metropolises was 27 percent, and in the regional centres with a university 17 percent. In the micro labour areas growth has been lowest, with the addition of new jobs being only 4 600, representing a growth of under 2 percent.

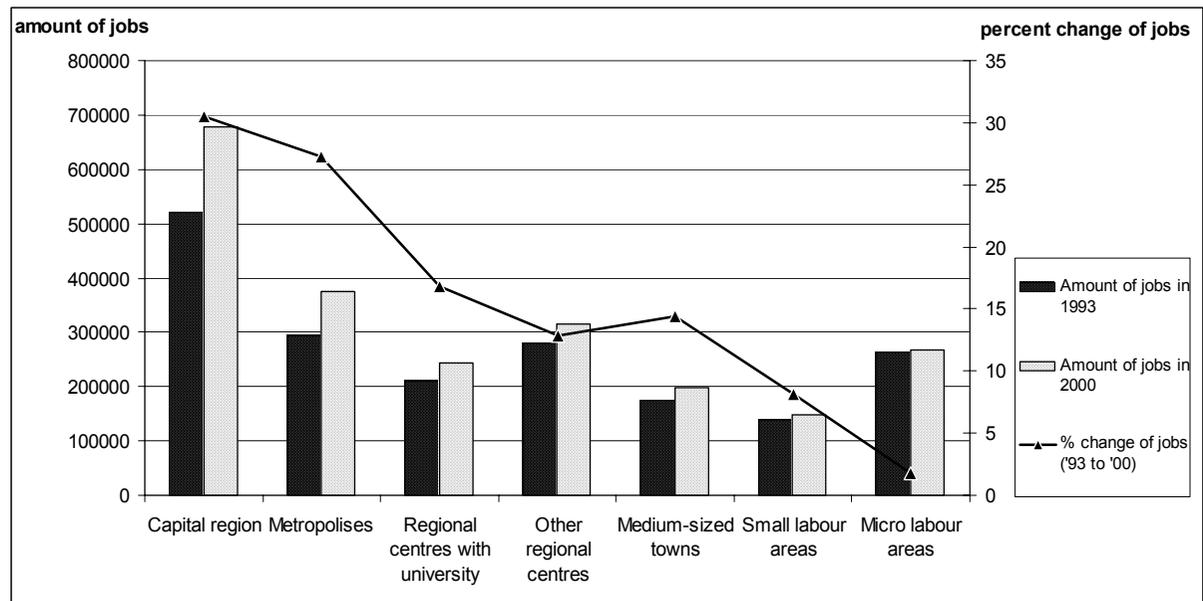


Figure A2:5. Amount of jobs in 1993 and 2000 and the percentage change during 1993-2000 by 7 typologies of regions in Finland (Data: Statistics Finland).

The economic renewal of the Finnish economy can be seen from the Figure A2:6. The KIBS sector (Knowledge intensive business services) has faced the most positive total net in-flow measured by the net in-flow from unemployment, studies and others outside the labour force: growth here has been 5.6 percent of the total employed in the KIBS sector. The growth in construction has been over 4 percent and in ITC-manufacturing almost 4 percent. The most negative total net-inflow has been in the primary and mining sector, which scored close to -2 percent.

From which pools have the economic sectors received their labour? The KIBS sector has recruited new personnel directly from studies. This is the case also for ICT-manufacturing and education. The employment growth in the primary and mining sector was only 0.5 percent from studies. The net in-flow from unemployment was the most important in respect of construction, health and social work and unspecified sectors, and the least important in respect of ITC-wholesale (0.1 percent). The net in-flow from other pools outside of the labour force has been negative in all sectors except in ITC-manufacturing, which showed an increase of 0.3 percent.

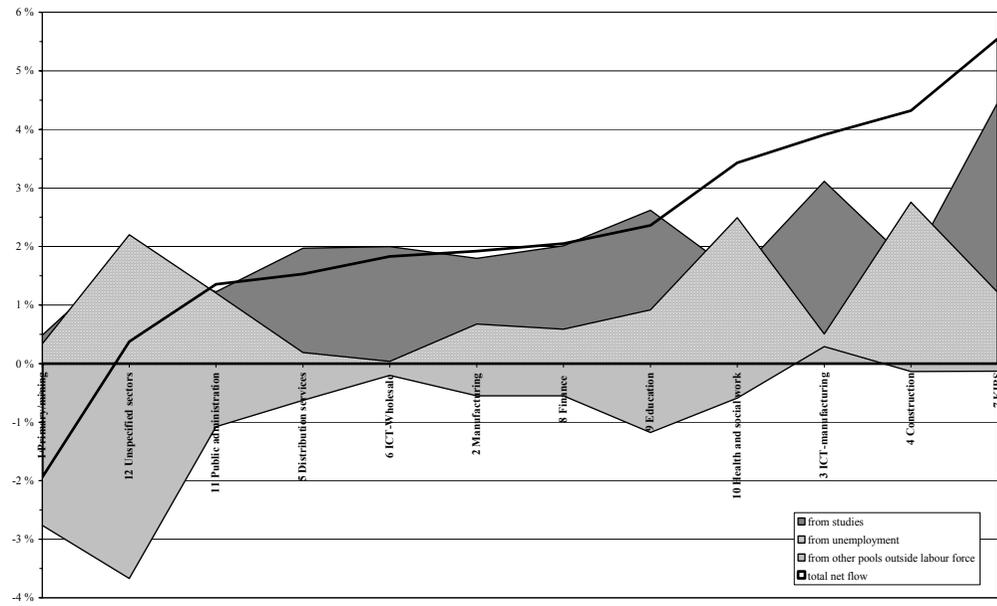


Figure A2: 6 Net in-flow to employment of working age population from three pools in 1999-2000 by economic sectors in Finland (Data: Statistics Finland).

## Appendix 3

### *The spatial structure of the Icelandic labour market*

Ingi Runar Edvardsson

The time period 1999-2000 was chosen for the mobility analysis in respect of the Icelandic labour market, as this period was characterized by high economic growth. Thus, GNP was 4.3 percent in 1999 and 5.5 percent in 2000 (Statistics Iceland, 2004). Data from the national Labour force surveys has been used in the analysis.

The variation in the size of local labour markets is an important structural feature of each national labour market. In Iceland, the capital labour market contains 61 percent of the labour force, while other labour markets are small (with less than 10,000 persons) and are spread throughout the country. This shows the high concentration of one dominant labour market. In 2000 the Icelandic labour force consisted of 160,100 individuals. In reality, this means that there is only one well functioning labour market with around 100,000 individuals, and that is the capital labour market.

*Table A3:1 Size of LLMs in Iceland in 2000*

	<i>Capital Area</i>	<i>Other regions</i>
Population 16-74 years	117.300	74.300
Per cent	61.2	38.8

Source: Statistics Iceland, Labour force survey 2000.

The Icelandic labour market seems to be rather homogeneous when considering employment status. As such, we do not find significant regional variations either in employment frequency (activity rates) in the year 2000, or in unemployment rates. In all cases the employment frequency is high, and the unemployment rate is low. The only regional difference is that people outside the capital area are registered as being sick to a greater extent than in the capital area.

Table A3:2 Employment status on the Icelandic Labour market in 2000. Percent

	<i>Capital Area</i>	<i>Other regions</i>
Employed	82.0	82.6
Unemployed	1.4	1.2
Students	4.2	3.4
Retired	4.8	4.6
Illness	3.5	5.5
Personal reasons	1.5	2.2
Other	1.9	0.5
Total	100.0	100.0

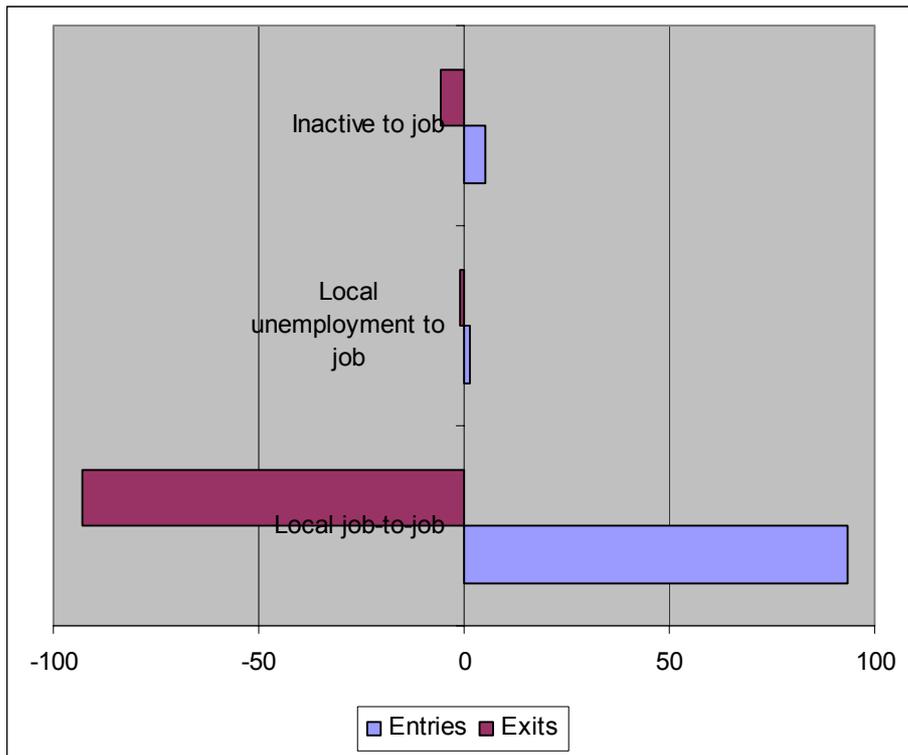
Source: Statistics Iceland, Labour force survey 2000.

Table A3:3 Employment status on the Icelandic Labour market in 2000, by age groups. Percent

	<i>Capital Area</i>	<i>Other regions</i>
<i>20-64 years</i>		
Employed	87.9	89.2
Unemployed	1.7	1.6
Students	4.3	3.3
Others	6.1	5.9
Total	100.0	100.0
<i>55-64 years</i>		
Employed	83.1	85.9
Unemployed	1.5*	1.5*
Students	-	0.6*
Others	15.5	12.1
Total	100.0	100.0

Source: Statistics Iceland, Labour force survey 2000

\* relative standard error over 20%

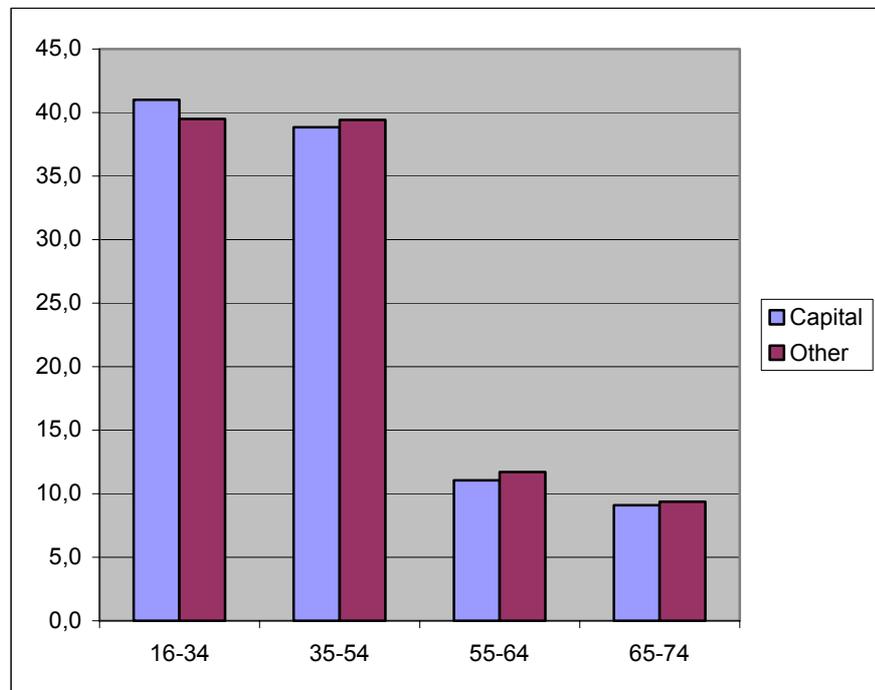


*Figure A3:1 Gross entries to job and gross exits from job in Iceland 1999-2000 broken down by mobility groups. Percentage of total mobility. Information on immigration and emigration was not available*

Annual labour mobility by LLM can be from employment to employment, from employment to studies, unemployment or retirement/sickness. Conversely, movement can be from studies, unemployment, and retirement/sickness to employment. Figure A3:1 shows that in the period 1999-2000 1.4 percent of unemployed went into employment, while 1 percent of those employed became unemployed. Also, 5.3 percent went from studies or sickness to employment, while 5.8 percent of those employed went to studies, retirement or sickness. The majority, around 93 percent of the labour force, went from employment to employment. No information is available on immigration and emigration to and from the Icelandic labour market.

Figure A3:2 shows the age structure of the population in the capital area and other regions in Iceland. As can be seen from the figure, the age structure is similar in the two labour markets. The population in the capital area is slightly younger than in the other regions of Iceland, although the difference is quite small.

*Figure A3:2 The age structure of population in the capital area and in other regions of Iceland in 2000*



The job-to-job inflow to industrial sectors was in general 17 percent for all sectors in Iceland in the period, 1998-1999 (Figure A3:3). The highest inflow rates were in trade; hotel and restaurants (26 percent), followed by business and services (25 percent), while R&D and higher educational institutes had the lowest level of inflow (7-10.5 percent).

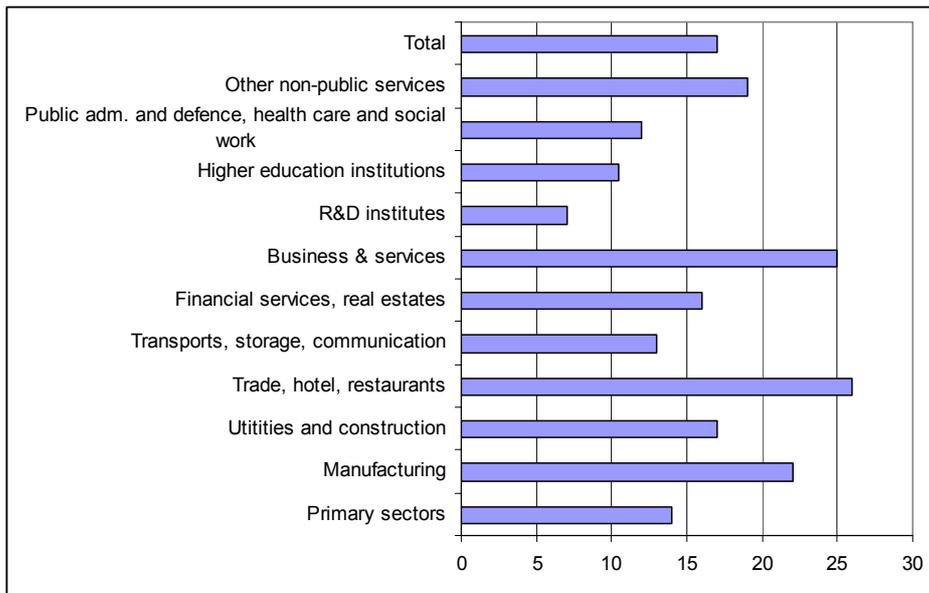


Figure A3:3 Job-to-job inflow rates by sectors 1998-1999. Percentage changes according to Labour market surveys

Source: Omar Hardason (2003). Some Methodological Issues Using Labour Force Survey Data for Mobility Research. Nordic Industrial Fund, Paper 2 (STEP Report 14-2003). P. 9.

## **Appendix 4**

### ***Labour mobility and regional economic change in Sweden***

Lars Olof Persson

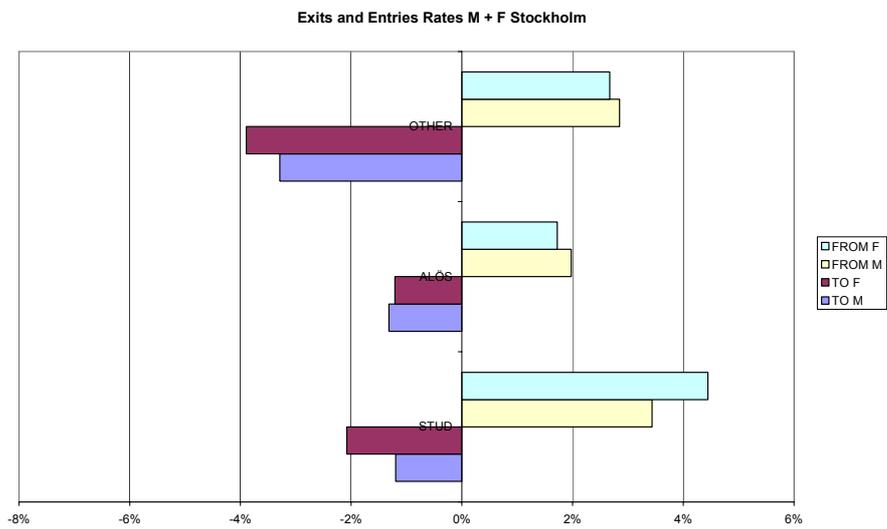
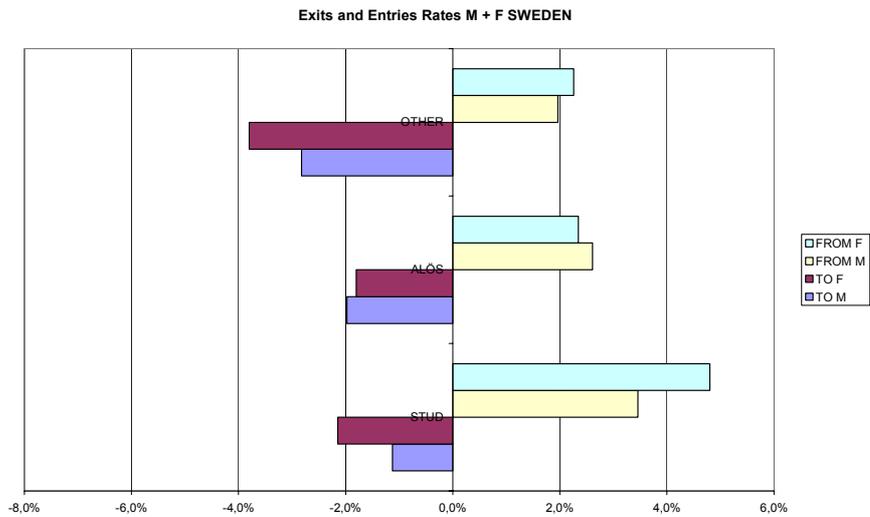
The purpose of Appendix 4 is to provide descriptive statistics from the Swedish ERDEC database. The ambition is also to develop graphic representations of the spatial structure and dynamics of the Swedish labour market, which consists of roughly one hundred more or less independent local labour markets (LLMs). The focus is on the transitional characteristics of the LLMs, i.e. on the flows of labour from and to formal employment, inter-industry mobility and migration between LLMs.

#### *The spatial dynamics of the Swedish labour market*

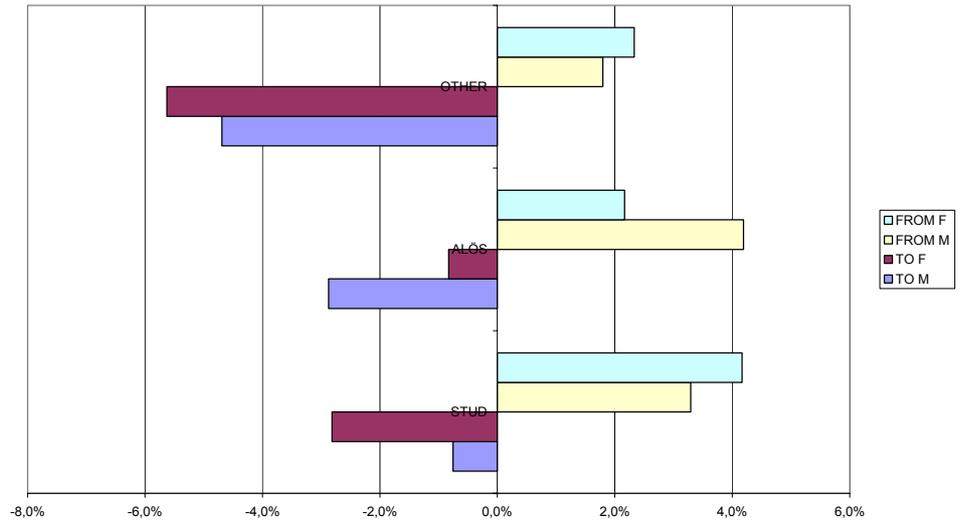
In the transitional labour market, labour demand is primarily generated by vacancies as labour force exits from employment to either of the non-employed local statuses: Students, Unemployed and Other non employment (here including Sick leave, Time-out and Early retirement) or to Out-migration. Correspondingly, there are three types of local pools tapped every year: Students (annual gross in -flows 3-5 percent of total employment in the average LLM), UE (2-4 percent) and Other non-employment (approximately 2 percent)

Altogether, annual flows both to and from local pools typically vary between some 6 and 12 percent of total employment across different LLMs, with a national average of 9 percent (Figure A4:1). The size of local in- flows is, to a very large extent, 'explained' by the number of exits (or vacancies). This spatial variation in the relative size of flows to and from different local statuses is illustrated by two extreme LLMs: Metropolitan Stockholm and Rural Sorsele in Västerbotten). (Figure A4:2 and 3). The aggregated flows are, however, quite similar in the two cases (male/female 8.26/8.84 in Stockholm, 9.28/8.67 in Sorsele). It is striking that exits to 'other non-employment' are abundant in Rural Sorsele, while returns from the same pools are limited. In both of these cases – as well as at the national scale – female labour is more mobile in transitions to and from the education system than male labour.

Figure A4:1-3. Annual local exits and entries to/from three statuses as a percentage of total employment by gender. A. Sweden 1998-99. B. Stockholm. C. Sorsele LLM



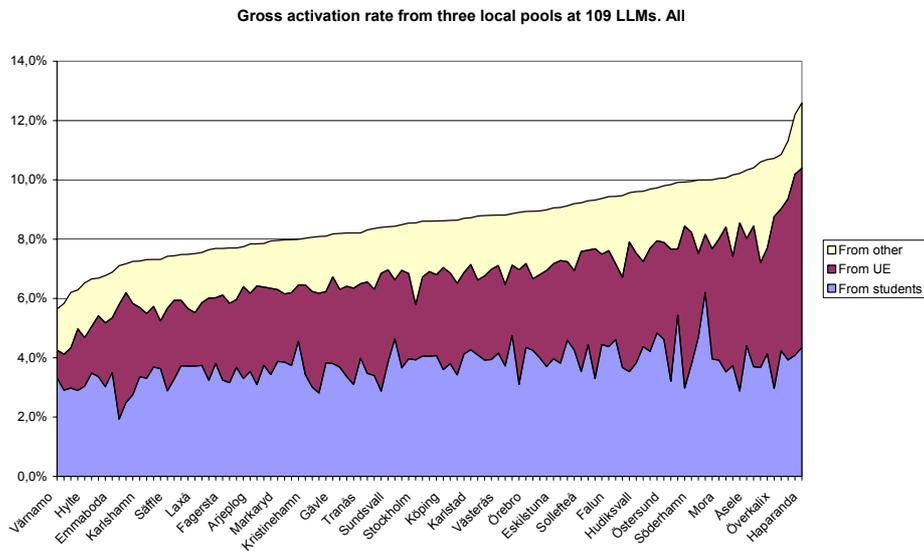
Exit and entries rate M + F Sorsele



Source: ERDEC database

To sum up, there is quite a wide variation between LLMs in the relative size of gross flows of exits to non-employment, as well as from previously non-employed labour back to work, in particular from the pool of unemployed (Figure A4:1).

Figure A4:4 Gross flows to employment from three local pools in 109 LLMs. All education levels.  
 LLMs ranked according to size of total flow from local pools relative to total employment.  
 Source: ERDEC database



Some of the actual numbers behind Figure A4:2 are listed in Table A4:1. The highest turnover of local labour is registered in remote rural LLMs in Norrland – targets for intensive policy intervention – while most of the LLMs with extremely low turnover are located in the industrial districts of Småland with their largely market-led local economies.

*Table A4:1 Gross flows from three local non-employment pools at extreme LLMs 1998-99. All education levels. Percentage of total employment year  $t+1$*

LLM	From students %	From UE %	From other %	From all local pools %
<b>Low rates:</b>				
Värnamo	3,3	0,9	1,4	5,6
Gislaved	2,9	1,2	1,7	5,8
Gnosjö	3,0	1,4	1,9	6,2
Olofström	2,9	2,1	1,3	6,3
Hylte	3,0	1,6	1,8	6,5
Ljungby	3,5	1,6	1,6	6,7
Hofors	3,4	2,1	1,3	6,7
<b>High:</b>				
Åsele	4,4	3,6	2,3	10,3
Vilhelmina	3,7	4,7	2,0	10,4
Strömstad	3,7	3,5	3,4	10,6
Storuman	4,1	3,6	3,0	10,7
Övertorneå	4,1	6,1	2,0	12,2
Haparanda	4,3	6,1	2,2	12,6
<b>Sweden</b>	<b>4,1</b>	<b>2,5</b>	<b>2,1</b>	<b>8,7</b>

*Source:* ERDEC database

#### *Spatial pattern of economic renewal by human resource input*

According to human capital theory, the input of well-educated labour is one of the most important factors behind the economic development and competitiveness of enterprises, regions or nations. To better understand the overall performance of the national Swedish economy, it is important to analyse the performance of each LLM. Figure A4:3 gives an impression of the strong competition between Swedish regions in the tapping of this national human resource pool. Major net contribution comes directly from universities and university colleges across the country. In almost all

LLMs – in this particular year – net flows to employment were positive for those unemployed with higher education.

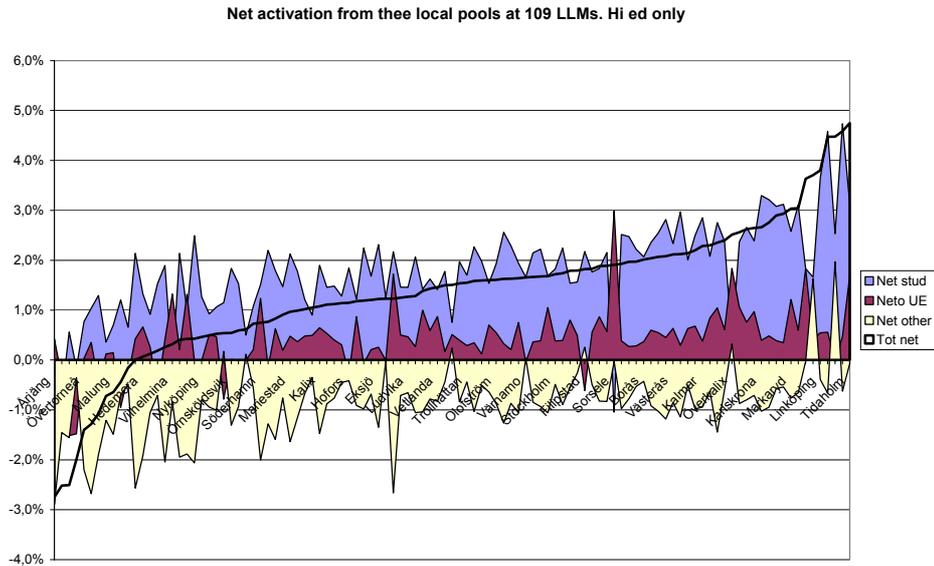


Figure A4:5 Net in- flows of labour with a post-secondary education from three local pools in 109 LLMs 1998-99. Percentage of total employment year  $t+1$ .  
Source: ERDEC database

Some of the numbers behind Figure A4:3 are listed in Table A4:2. The LLMs that were not generally successful in activating skilled labour are found in remote and sparsely populated regions in Norrland, i.e. Arjeplog, Arvidsjaur and Dorotea. Successful labour markets in respect of the knowledge economy are – not surprisingly – found in some medium sized university towns but also – more surprisingly – in some smaller localities such as Hylte in Småland and Munkfors in Bergslagen.

Table A4:2 Net local inflow of labour with a post-secondary education to extreme LLMs 1998-99 from three local pools: students, unemployed, and other non-employed. Percentage of total employment year  $t+1$

	Net stud %	Net UE %	Net other %	Tot net %
<i>Low net</i>				
Årjäng	-0,3	0,4	-2,9	-2,7
Arjeplog	-0,7	-0,3	-1,5	-2,5
Dorotea	0,6	-1,5	-1,6	-2,5
Pajala	-0,2	-1,5	-0,4	-2,0
Övertorneå	0,8	0,0	-2,2	-1,4
Sollefteå	1,0	0,4	-2,7	-1,3
Arvidsjaur	1,3	-0,5	-1,9	-1,1
Avesta	0,4	0,1	-1,2	-0,7
Malung	0,7	0,1	-1,5	-0,6
<i>High net</i>				
Karlstad	3,2	0,5	-0,9	2,8
Växjö	3,1	0,4	-0,6	2,9
Malmö	3,1	0,3	-0,5	2,9
Markaryd	2,6	1,2	-0,8	3,0
Jönköping	3,1	0,6	-0,7	3,0
Munkfors	1,8	1,8	0,0	3,6
Vansbro	1,7	0,4	1,6	3,7
Linköping	3,6	0,5	-0,4	3,8
Uppsala	4,6	0,6	-0,7	4,5
Hylte	2,5	0,0	2,0	4,5
Umeå	4,7	0,5	-0,6	4,6
Tidaholm	3,1	1,7	-0,1	4,7

Source: ERDEC Database

#### *Transitional labour markets and structural change in the economy*

The industrial sectors to varying extents generate labour market dynamics in the form of labour mobility. In other words, each industry has its own role in the transitional labour market. Looking first at the national level, Figure 8 shows the total net in-flow of labour to the industrial sectors from three local pools – students, UE and Other non-employment 1998-99. Some 10 industries out of the 42 show a net decline in total employment, while some 15 show a substantial increase: by more than 2 percent during this upswing year in the Swedish economy. The net in-flow from

the education system – universities, schools and lifelong learning activities – was positive for all but one industry. Net flows from UE were positive in approximately 2/3 of the industries. The hotel, restaurant, business services, retailing and R&D sectors all registered impressive net recruitment. On the other hand, large sectors in employment terms such as health services, education, public administration and transportation generated relatively small net in-flows.

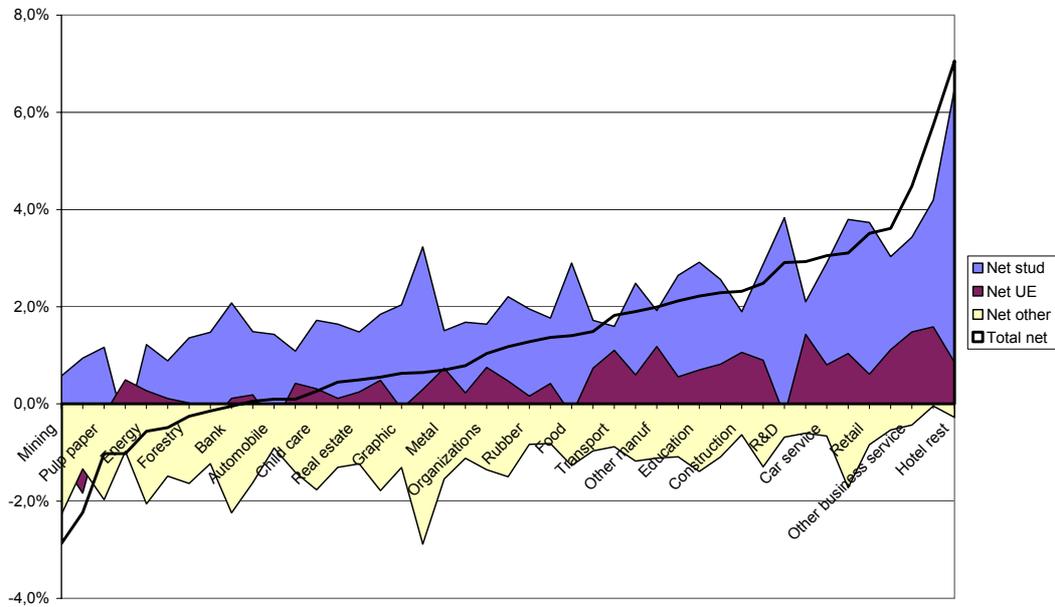


Figure A4:6 Total net in-flow of labour to industrial sectors from three local pools 1998-99. Percentage of total employment year  $t+1$  in each industrial sector in Sweden. Source: ERDEC database

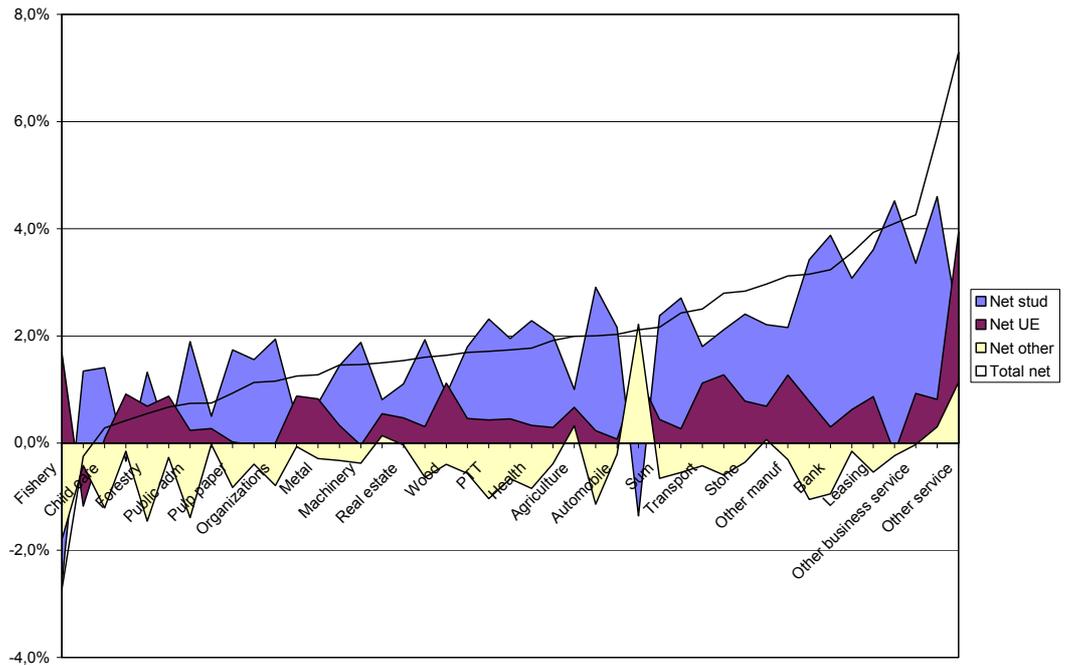


Figure A4:7 Total net in-flow of labour holding a post-secondary education to industrial sectors from three local pools 1998-99. Percentage of total employment year  $t$  in each of the 109 LLMs in Sweden.  
Source: ERDEC database

The corresponding importance, for industrial sectors, of the net local in-flow of labour with a higher education is shown in Figure A4:5. Sectors such as business services benefit from high rates of freshly educated labour directly from universities. On the other hand, industries such as those included in the category termed ‘Other unspecified services’ show high net in-flows of previously unemployed persons with a university degree. On potential hypothesis here could be that many of these unemployed persons hold a non-European university degree, which is not fully validated in the Swedish labour market.

*Migrant and locally mobile labour's contribution to total regional income according to sector*

The recruitment of labour, in particular directly from the educational system, is likely, in the longer term, to generate economic returns, though it is unlikely to do so in the first year of employment. As can be seen from Table 4, local in-flows from non-employment – activating almost 10 percent of the labour force – lead to the generation of only 1.1 percent of the total income in the national economy. However, in addition to the local flows from and to employment, there are substantial local *inter-industry flows* within each LLM, which on average contribute to a labour mobility corresponding to some 10 percent of total employment. By analysing the income generated by this transitory labour we can estimate the more immediate economic importance of mobility on the national and local labour markets. From the sampled year in Table A4:3, the registered contribution to total national income was almost 9 percent.

External pools of labour are tapped through *in migration to employment*. Migration to employment leads to a total contribution of a little more than 1.3 percent of total national incomes year  $t+1$ . These relations are quite stable over time.

Cross-industry local mobility, local recruitment from non-employment and migration altogether contribute to roughly 11 percent of total national income. For dynamic sectors such as IT, financial service and higher education, the contribution to sector incomes generated by mobile labour corresponds to up to 20 percent of the total income in this particular period.

The contribution of mobile labour, particularly inter-industry transitions, is markedly higher in the largest LLM in Sweden than in all other LLMs. Total mobility thus leads to a value increase in respect of regional income in Stockholm that is some fourpercentage points higher than in many other smaller types of LLMs. It is then a valid hypotheses that the size and diversity of LLMs is positively correlated to the immediate economic returns to labour mobility.

*Table A4:3 Economic renewal: Contribution of in migrants, inter-sector mobility and local recruitment. Sweden. Selected industrial sectors. Percentage of total income in each sector year t.*

<i>Mobile labour's contribution to economic performance per sector</i>				
	In-migrants %	Inter-sector mobility %	Local recruit- ment %	Mobile total %
IT	1,5	20,5	0,8	22,9
Hot/rest	3,1	12,0	4,1	19,1
Finans	1,3	11,6	1,2	14,0
Labour intensive industry	1,1	11,0	1,2	13,4
Pharmaceutical	1,5	11,1	0,5	13,1
Electro	1,6	9,6	0,8	12,0
Retail	1,5	7,6	2,0	11,2
Graphic	1,4	8,2	1,0	10,6
Agriculture/forestry	1,2	7,0	1,4	9,6
Capital	1,3	6,8	0,8	8,8
Construction	0,8	6,5	1,4	8,8
<i>All sectors</i>	<i>1,3</i>	<i>8,8</i>	<i>1,1</i>	<i>11,3</i>

Source: ERDEC Database

## Appendix 5

### *The anatomy of labour market flexibility in Denmark*

Torben Dall Schmidt

Labour market flexibility is a crucial point of departure when assessing different labour markets internationally. This is most often attempted through a focus on national labour markets. Using the typology for local labour markets introduced previously, this section covers some important issues with regard to the spatial structure of labour market flexibility in Denmark. Is flexibility dependent on the type of local labour market under which national policies are employed? This then is the central question of the present section. Considering the planned changes in the responsibilities of implementing labour market policies locally in Denmark, such questions are vital for a better understanding of the effects of labour market policies. Municipalities are going to take a more central position in labour market policies relative to the regionally defined state agencies currently responsible for policy implementation.

Initially, the structures of the different types of labour markets are laid out in a sub-section. The propensity to move into and out of employment from different labour market states in the different types of local labour market is analyzed in the next sub-section. The nature of the transitions from unemployment to employment in the different types of labour markets is analyzed in more detail in the third sub-section. After that follows a final discussion on labour market flexibility in Denmark.

#### *The structure within different types of local labour markets*

Labour markets may differ in a wide range of aspects. This is also true for local labour markets. The age composition, gender composition and competences embodied in such labour markets will influence the overall flexibility of the local labour market. These heterogeneities will therefore have to be identified before moving on to a more elaborate analysis of the flexibility of the local labour markets. Here, the typology of local labour markets will be considered by means of a consolidated approach. All local labour markets of a given type are accordingly aggregated into one, considering the age, gender and competence structure of the local labour markets of a given type.

Age structure is of obvious interest when considering labour market flexibility. Retirement patterns among the elderly and the longevity of

the educational system will influence labour market flexibility. Figure A5.1 presents the age structure within each type of local labour market.

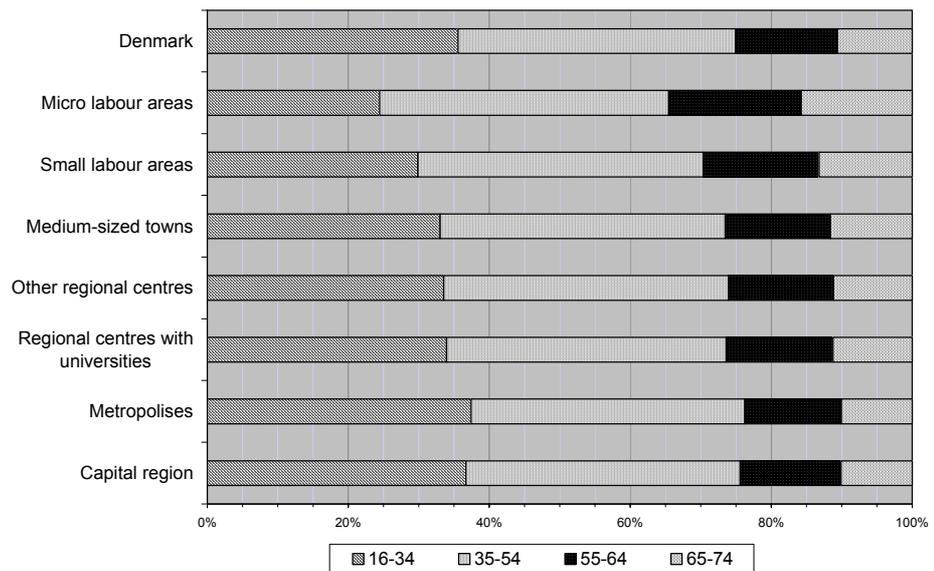


Figure A5:1 Age structure of the types of local labour markets, 1998

There are clear patterns of age differences across the different types of local labour markets in Denmark. The capital region and the other metropolises have the highest shares of the total population aged 16-74 years in the youngest age group of 16-34 years, while the micro labour areas have a considerably smaller share in this age group, the difference between the highest share in the metropolises and the lowest share in the micro labour markets being 13 points. The importance of this difference becomes clear however when comparing the differences in the share of the elderly. In the age group 65-74 years, the difference between the metropolises and micro labour markets is 5.6 points. The problems associated with an ageing population will thus be crucial to the development potential and impact of these micro labour markets. This will be even more so, as the group of 55-64 years old represents a 5.1 point higher share of the persons aged 16-74 years in the micro labour markets relative to the metropolises. Any national policy designed to handle the problems of ageing should therefore not necessarily be expected to solve the problems in any kind of type of local labour market. Any instrument designed to solve the ageing problem in the capital regions and metropo-

lises may not however be viable in the micro labour markets. Furthermore, even if the same instrument can be applied, simply implementing the same dose of the instrument to all types of labour markets may not be an optimal solution either.

It may also be noticed that the structures do not change smoothly across the various types of local labour markets. The major changes in the proportion of the youngest group take place at certain types of local labour markets. Moving from a metropolis to a regional centre with a university reduces the share of the youngest group by 3.4 points, while moving from a medium sized town to a micro labour market reduces the share of the youngest group by 8.6 points. The problems are therefore most highly pronounced in the two most peripheral, and least urbanized, types of labour markets.

In respect of the gender issue as regards labour market structures, the differences embedded in the typology of labour markets is however less pronounced. Only in the capital region do males represent the largest share of the population aged 16-74 years. This dominance of males in the capital region was however only some 0.67 points in 1998. All other types of local labour markets are however dominated by women. The most significant level of dominance is seen in small labour markets, where women represent a 2.12 point higher share of the populations aged 16-74 years than men. These variations support the importance of considering differences among different types of labour markets, when dealing with the ageing problems of the population. Women have a longer life expectancy than do men, and traditionally they often take on rather different types of jobs than men. Relatively small difference in gender structures may therefore materialize in large differences in outcomes in respect of labour market policies. Policies designed specifically to attend to the problems of capital regions and the metropolises may therefore not really be best structured to solve the problems embedded in small and micro labour markets.

A final issue addressed here is the formal competences available in the different types of local labour markets. Figure A5.2 lays out the competence structure in the different types of local labour markets in Denmark.

Formal competences have the expected geography in Denmark. Peripheral and less urbanized local labour markets are more scarcely inhabited by higher educated labour, while also being more often inhabited by low or poorly educated labour. Even so, there are details on the competence structure that are worth noting. The share of highly educated persons remains relatively constant until we reach the typology 'Metropo-

lises', where it increases markedly from around 13-15 percent to 22 percent in the capital region. This reflects the presence of a strong clustering of competence in Denmark. Only metropolises and the capital region are able to attract a markedly higher share of highly educated labour. It seems remarkable however that regional centres with universities do only moderately better than e.g. medium-sized towns and micro labour markets.

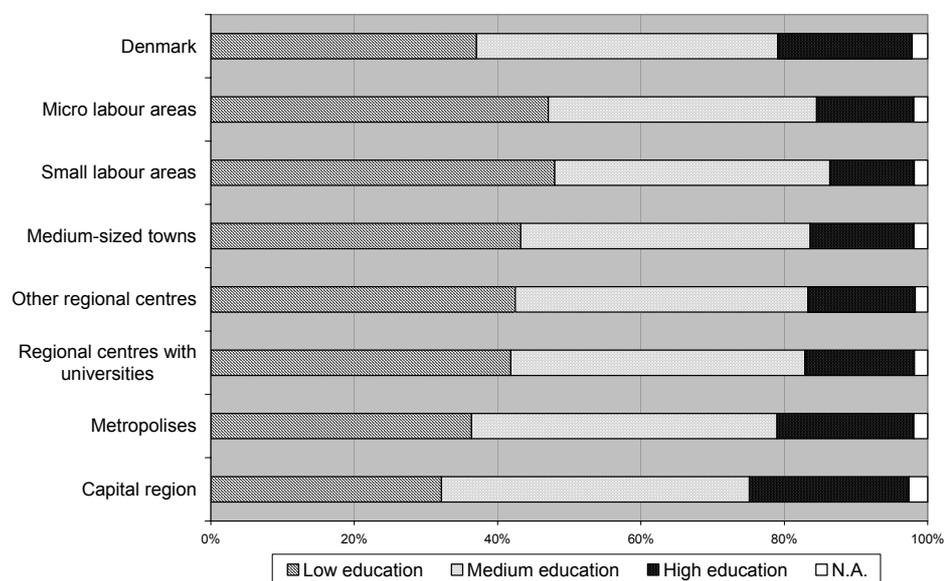


Figure A5:2 Formal competences embedded in the types of labour markets, 16-74 years in 1998

The flip side of the coin concerns the shares of the low or poorly educated. The change in the proportion of poorly educated persons falls in four steps. Micro labour areas and small labour areas have a very high proportion of around 47 percent. Medium-sized towns, other regional centres and regional centres with universities have a proportion of around 42-43 percent. Metropolises have a proportion of around 36 percent, while finally the capital region has a proportion of around 32 percent. The total spread is accordingly about 15 points. These differences reflect a critical dependence on highly educated labour in urban systems in Denmark. It once again however seems remarkable that smaller urban sys-

tems with some knowledge infrastructure have a comparably high proportion of low or poorly educated labour. This may on the one hand reflect problems in respect of motivation concerning the acquirement of competences in smaller urban structures and rural areas, while it may also be taken to stress the importance of knowledge building in the labour market reserves of these types of areas.

Considering the existing structures in the different types of areas within Denmark, it would be highly valuable to create policy instruments in relation to the activation of labour market reserves that exhibit a level of flexibility designed to ensure their appropriateness in very different structures. Discretion on behalf of the local authorities over the implementation of such policies does however seem to be valuable, as it would to a greater extent ensure a policy design that was better or more appropriately tailored to the type of local labour market in question.

#### *Transitions in and out of employment in the different types of labour markets*

The previous section has addressed the structural differences of the types of local labour markets in Denmark. This is an important aspect when analyzing the appropriateness of a given policy for a given type of area. Nevertheless, the attainment of more detail in the patterns of labour market transition would provide an important supplement here. An analysis of the different types of transitions is therefore offered in this section. The point of departure here is an analysis of the different types of transitions in and out of employment that can occur. These transitions will reveal the most important dynamics taking place in the different types of local labour markets in Denmark, thereby adding to the test of the hypothesis that Danish local labour markets are in many important aspects heterogeneous.

Figure A5.3 presents the transitions into employment from different kinds of labour market states and migration statuses between the years 1998 and 1999. Local job-to-job entries are persons that change jobs between different sectors while remaining residents in the same local labour market. There are 12 sectors in the classification used that correspond to the sectors laid out in figure A5.5. Local sectoral mobility is, in general, the most important renewal source of those employed in all types of local labour markets. This source of renewal however decreases as one moves 'downstream' in the urban system, and as such this is why micro labour markets are the least dependent on this type of employment renewal. The same goes for local education-to-job transitions.

The transition dynamics are rather different in the rural parts of local labour markets, where reactivating vacant resources becomes more

important, while transitions of the type ‘local unemployed-to-job’ are more important outside the strong urban systems. This illustrates another important difference among the types of local labour markets in Denmark, with different types of labour markets being more or less dependent on vacant resources on the local labour market in the process of employment renewal.

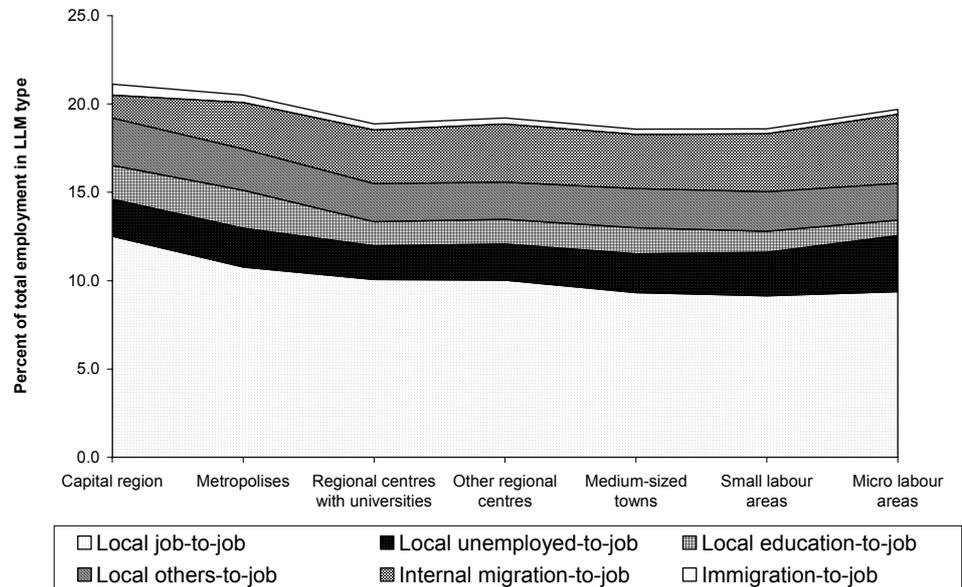


Figure A5:3 Entry to employment from different labour market states 1998-99

The issue of the exit from jobs is the reverse issue with respect to the dynamics of the local labour markets. Are the differences in recruitment structures further downstream in the urban system reflected in corresponding exit patterns? Figure A5.4 offers an answer to this question. The figure confirms that the overall dynamics of the local labour markets vary considerably across urban structures. Entry and exit from unemployment drives employment renewal in the rural types of local labour markets, while job-to-job and education-to-job transitions drive the employment dynamics in the strongly urbanized areas. It may also be noted, that a considerable part of the employment dynamics in the smaller local labour markets are driven by internal migration, while this is a less predominant factor for urbanized types of local labour markets. This must

however be viewed in the context of the demographic differences shown in figure A.1 with a larger share of the elderly in the non-urbanized types of local labour markets. A high share of elderly labour and a lower share of young labour increases the propensity of recruitment from outside the area. The small and micro local labour markets are therefore more dependent on receiving labour market resources from the outside.

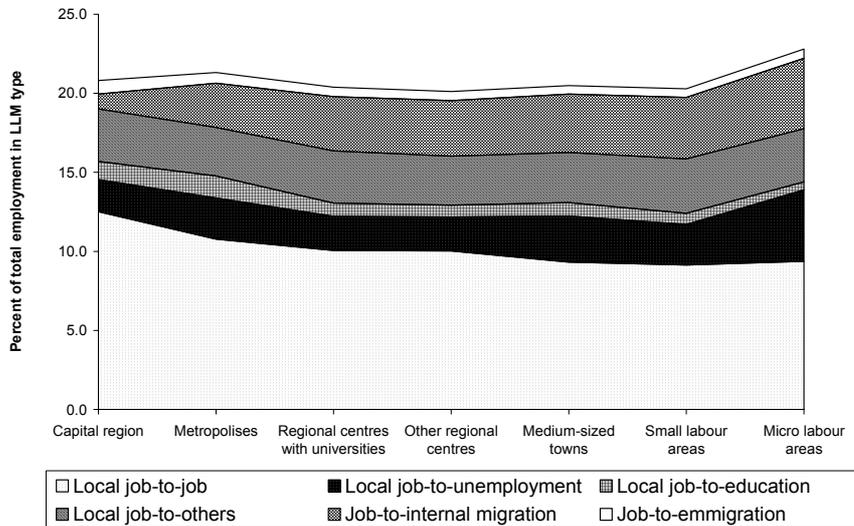


Figure A5.4 Exits from employment for different labour market states 1998-99

Comparing figure A5.3 and A5.4 furthermore stresses the pressure present in the less urbanized local labour markets. The net effect is negative for most of the less urbanized types of local labour markets, which represents a problem for the development potential of these types of local labour markets.

More detail can be gained from considering the sectoral dynamics of entries and exits. Figure A5.5 presents the net inflow to the different sectors. The sectoral decomposition has 12 levels, stressing the effects of ICT and business services, while aggregating correspondingly for the other sectors.

A large number of sectors experience a negative net-inflow between the two years considered, while others see a large positive net-inflow. The positive inflow is concentrated in the information and telecommunications sectors and in business services. The inflow in these sectors originates from a reallocation of local labour market resources between sectors. Manufacturing and primary/mining loses out in terms of

job-to-job changes, while ICT-wholesale, KIBS and finance are the major gainers. These changes in the employment structure reflect an important difference in the relative performance of sectors.

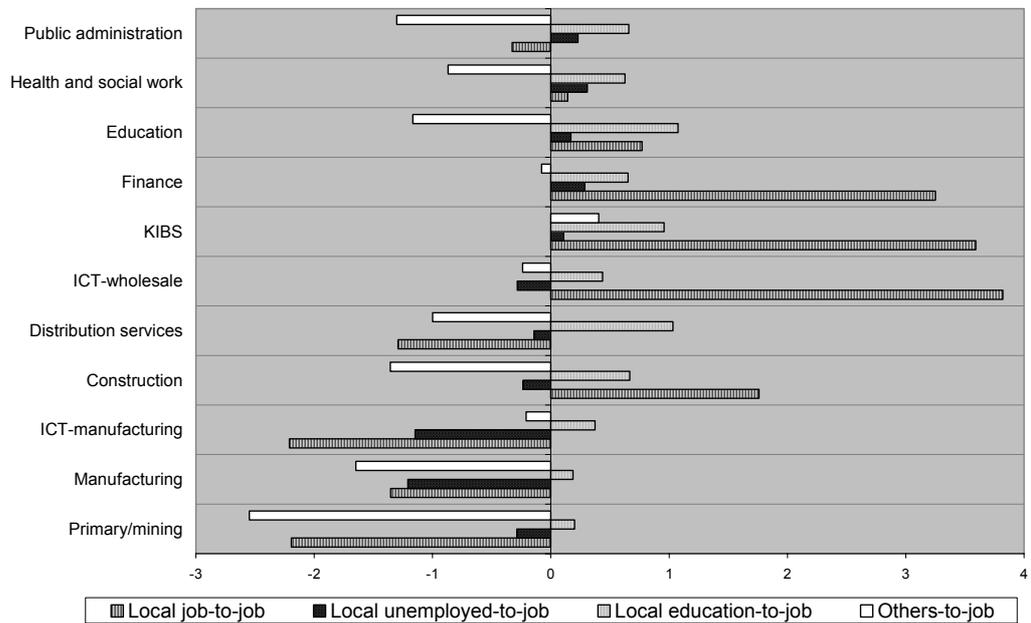


Figure A5:5 Sectoral composition of net inflows to the labour markets 1998-99

In terms of renewal of human capital, the local net inflow from local education to jobs is of less importance in the overall renewal of employment resources. In some sectors, the renewal of human capital through the infusion of newly and locally educated persons is though of some magnitude. This is especially so in distribution services, KIBS and education. This renders the question, how this kind of infusion of human capital spreads geographically. Figure A5.6 offers some insight into this question. It shows the gross entry from local education into employment for the different types of local labour markets and for the different sectors.

There are clear differences in the ‘anatomy’ of the infusion of human capital into the different sectors of the local labour market through the employment of locally educated persons. Some sectors exhibit comparatively little asymmetry in the geographic importance of the local re-

newal of human capital. The percentage of those employed originating through the employment of local ‘newly educated’ persons is, by and large, constant across the different types of local labour markets in the construction sector. The reverse is true for the KIBS sector and for education, where the capital region and metropolises have a far higher recruitment share from newly educated persons as compared to the other types of local labour markets. Moreover, it is important to highlight this kind of asymmetry in an analysis of the effects of national policies on different local labour markets.

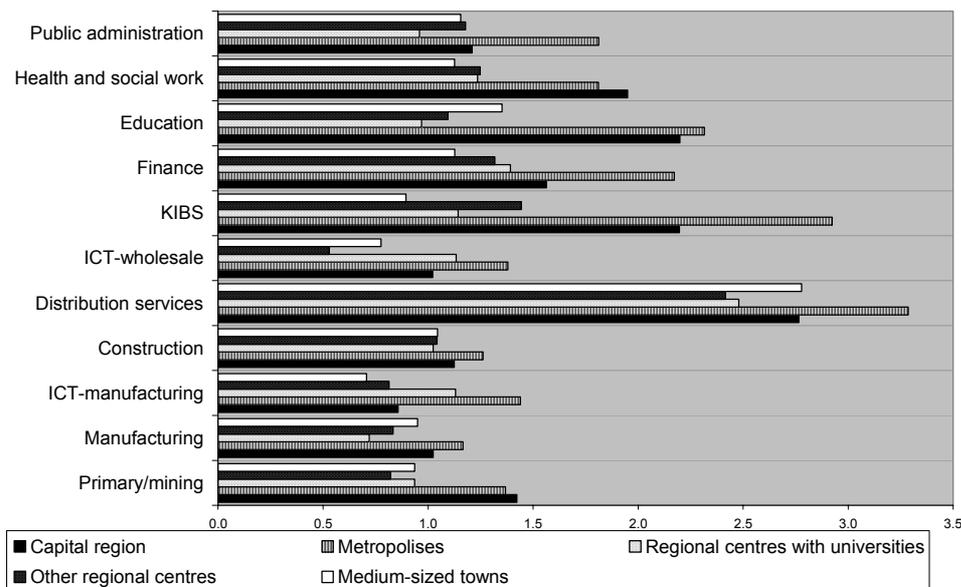


Figure A5:6 *Renewal of human capital through the infusion of education*

The geography of the educational infrastructure will reflect very different dependencies on the ability to recruit through the local renewal of human capital. Some sectors are less sensitive to this kind of mechanism, while other sectors, such as those in the knowledge and service branch, will be more sensitive. The ability to renew human capital locally does vary considerably making different sectors more sensitive to the ability to attract labour market resources from outside the local labour market in the process of renewing human capital among the employed persons.

The transitions into and out of employment differ in important aspects across the various types of local labour markets. Moving downstream in the urban structure, activating local labour market reserves becomes increasingly important. At the upper end of the chain of urban structures, the transition into and out of employment is, to a large extent, driven by sectoral dynamics. This ties in nicely with the differences in the source of net inflows to the different sectors. There are considerable differences in the net inflows by sector. Some sectors experience a net loss in terms of job-to-job dynamics, while others, particularly in the business services and IT sectors, experience net gains. This spills over into large difference in the importance of the local recruitment of persons educated locally in the effort to renew human resources. In construction, the ‘anatomy’ of renewing human capital among the employed is, by and large, symmetric across the various types of local labour markets, while sectors such as KIBS and education see large asymmetries to the advantage of capital regions and the metropolises. The spatial ‘anatomy’ of the educational infrastructure does thus seem to matter as regards the flexibility of local labour markets in Denmark.

*Re-activating the unemployed in the different types of labour markets*

Different types of labour may be activated to provide more flexibility in the labour markets. The most obvious candidate for activation is the stock of unemployed. According to the ILO criteria for unemployment, this group of persons should be the most flexible part of the labour market reserves in the sense that they have to fulfil a set of criteria making the transition into employment more likely. Focusing on the transition from unemployment to employment therefore represents the ‘easy case’ in respect of reactivating labour market reserves. Other groups in the labour market reserve will however have a more marginal attachment to the labour market and therefore represent more ‘difficult cases’ in respect of reactivation. The following will therefore compare the ability to reactivate the most attached group in the different types of local labour markets in Denmark.

A point of departure in such a comparison is the actual transition rates of the unemployed into employment for the different types of local labour markets. Figure A5.7 presents these transition rates for the transitions taking place from 1998 to 1999. The number of persons changing status from being unemployed to becoming employed between these two years is compared with the initial stock of unemployed.

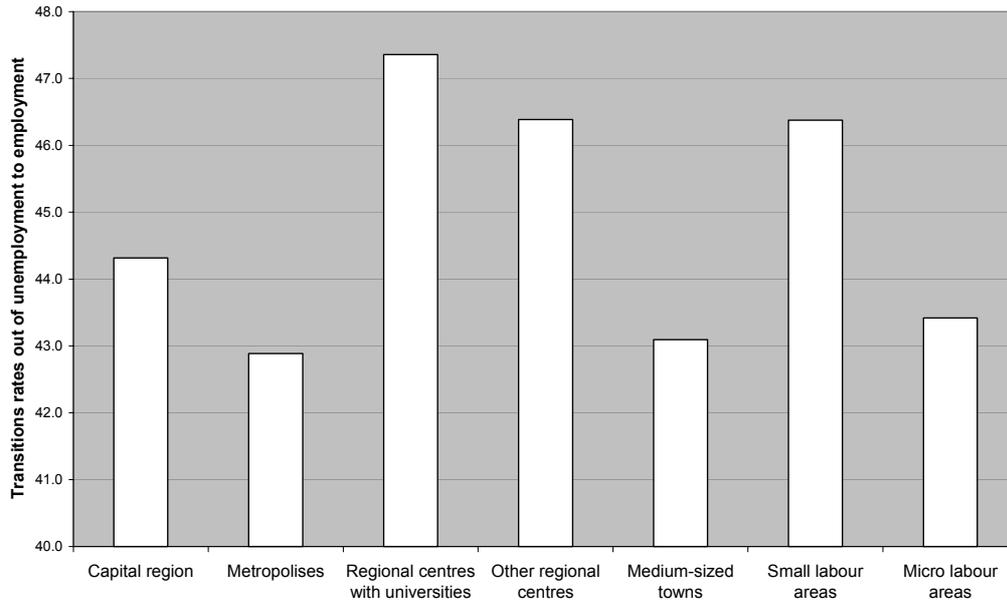


Figure A5:7 Transition rates from unemployment to employment 1998-99

The labour market performance in the different types of local labour markets varies considerably. Being unemployed in a regional centre with a university results in a considerably higher employment probability than is the case in the metropolises. The patterns are however not systematic across types. Regional centres with or without universities have the highest transition rates together with small labour markets. The worst performance can be found in metropolises and medium-sized towns. This may be taken to indicate that very different dynamics trigger the transition out of unemployment in the different types of labour markets. The service sector in larger urban structures, industry in medium-sized urban structures and agriculture in rural areas may demand very different requirements in respect of the reactivation of labour market reserves. Being out of a job may lead to very different outcomes in terms of the depreciation of human capital. As such, labour market policies should adapt to these circumstances. The above figure indicates that the prevailing system of policies is more appropriate for labour situated in medium-sized urban structures and peripheral areas.

How do these patterns of labour market performance, in respect of the transition out of unemployment, reflect differences in the personal characteristics of the local labour market reserve? This is a particularly important dimension to include before making stronger statements on the adaptability of labour market policies. To get a more detailed impression of the importance of personal characteristics in respect of the probability of becoming employed – where one is initially unemployed - a probit model is estimated for this transition. The characteristics used to explain the variation in probabilities are age, gender and education. These characteristics are usually considered to be of importance when analyzing labour market flexibility. Figure a5.8 illustrates the parameter estimates of the four covariates. Note, that low or poorly educated persons are the benchmark in respect of the importance of educational attainment.

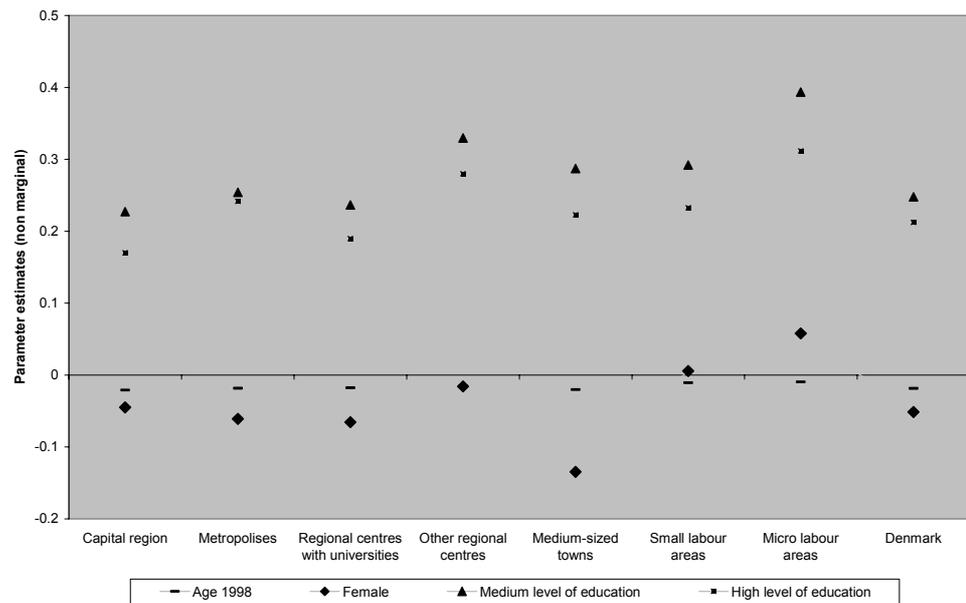


Figure A5:8 Probit estimates of the transition from unemployment to employment 1998-99

Not surprisingly, education has a positive effect on the probability of moving out of unemployment. The largest effect is attached to having a higher education. The relative importance of having a higher education rather a medium level education does however vary across the various

types of local labour markets. In the metropolises the distinction between being having a higher and medium level of education is, in practice, unimportant to the probability of moving out of unemployment. At the other end of the spectrum, highly educated persons have a considerably higher probability of moving out of unemployment in micro labour markets as compared with persons with medium levels of education. Both types of education do though increase the probability of gaining employed as compared to persons with a low level of education. This is not the case for age. Age reduces the probability of becoming employed in all types of local labour markets. The parameter estimate is though of moderate size in all types of local labour markets.

Gender is also of importance for the reactivation probability of unemployed persons. The pattern is however different across types of local labour markets. The general result is that unemployed females have a lower probability of becoming employed as compared with unemployed males. This result is most explicit in medium-sized towns. Unemployed women do however have a comparably better probability of becoming employed in small and micro labour areas, with the largest positive coefficient observable in the micro labour areas. This indicates that different types of labour markets have very different performances in terms of gender differentials. Small labour areas have, in general, a better level of performance with respect to the activation of women, while men have a comparable advantage in areas with strong urban structures. This may be seen as surprising, as the traditional female jobs should have more readily available in areas with strong urban structures, i.e. jobs within the public service sector.

Overall, the characteristics of the person that is to be reactivated in a local labour market interacts with the type of local labour market considered in determining the outcome for that person. A final issue dealt with in this section is the duration of the unemployment spells experienced in the different types of local labour markets.

The transition from the labour market reserve to employment is one measure of labour market flexibility. These transitions do not however reveal anything about the longevity of the out-of-employment spells, which is an important aspect in analyzing labour market flexibility. Shorter out-of-employment spells would not normally be considered a problem, while long-term unemployment is a problem. Shorter unemployment spells may reflect a more active search and a more efficient labour market. Figure A5.9 presents the *Kaplan-Meier survivor function* for the persons that were unemployed in 1998. The data covers the period from 1998 to 2001. Unemployment spells are censored, such that multi-

ple spells are not considered. This will not be important given the rather short period considered.

The duration of unemployment spells can therefore - as a maximum - last three periods before they are censored.

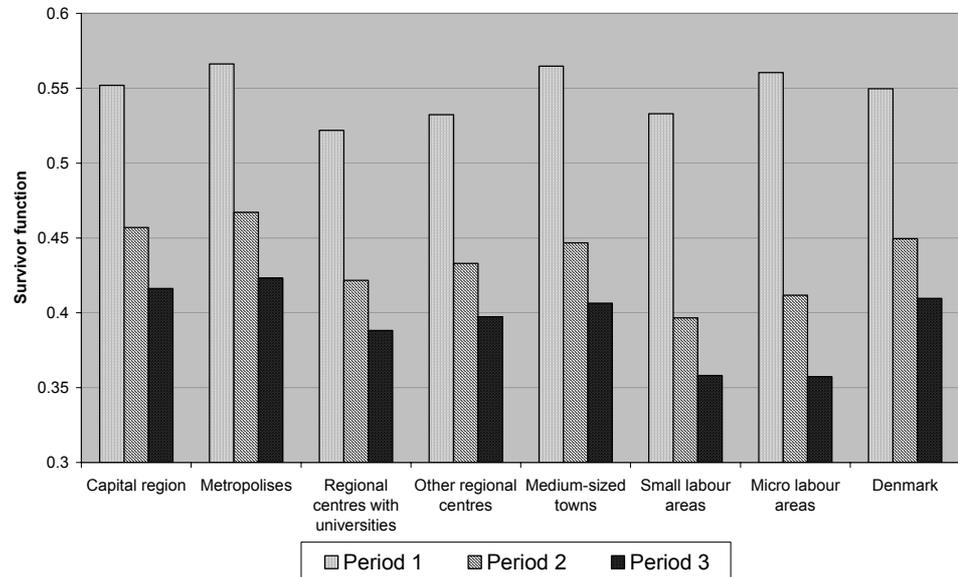


Figure A5:9 Kaplan-Meier estimates for the survivor function of persons unemployed in 1998

Recall that the *survivor function* reflects the fact that the unemployment spell will have a length of at least one period, two periods and three periods respectively. The reduction in the *survivor function* for each type of local labour market is therefore to be expected. Differences between the different types of local labour markets do however appear clear from figure A5.9. Initially, reactivations in the regional centres with or without a university and in the small labour markets show the best performance. This is reflected in the fact that the lowest share of persons unemployed in 1998 continued to be unemployed after one period. This has changed considerably after three periods. Here the small and micro labour areas have the smallest share of the initially unemployed persons that have continued to be in unemployment. Moreover, it seems remarkable that the worst performing types of local labour market areas for the

period considered here are the metropolises and the capital region. They have a low degree of activation after one period and the share of the initially unemployed persons that continue to be unemployed after three periods is the highest among the different types of local labour markets.

Using the 'easy case' of reactivating unemployed persons in the local labour market through employment, the present section revealed considerable differences in labour market performance. Considering the simple transition rates in respect of changing status from unemployed in 1998 to employed in 1999, there are important differences in the performance of the different types of local labour markets. Regional centres with or without a university, and small labour areas are the best performing. This conclusion continues to hold when focusing on the duration of unemployment spells. Regional centres with or without a university, and small labour markets show the best performance in the short run (after one period of unemployment) and in the long run (after three periods of unemployment). Education is an important factor in terms of short run performance. Moreover, moving from unemployment in one period to being employed in the next, is positively influenced by both medium and high levels of education. This holds true for all types of local labour markets, although it does so to different extents. Gender on the other hand has a negative impact on the reactivation on the unemployed person, such that women have a harder time in their quest to be employed. The only exceptions here are the small and micro labour areas, where women more easily become employed. This does seem surprising. In total there are important heterogeneities in the functioning of the different types of local labour markets with respect to the 'easy case' of reactivation.

#### *Discussion*

Are the different types of local labour markets in Denmark homogeneous in terms of the different aspects of labour market flexibility? The answer to this question must be a rather strong denial. The analysis presented in the previous sections indicated the following points of heterogeneity with respect to labour market flexibility and structure among the types of local labour markets.

There are large differences in the share of elderly and young persons in the labour force across the various types of local labour markets, i.e. the impact of the ageing process differs across the various types of labour market.

- The ageing problem in less urbanized types of local labour markets is underlined by the higher share of women with a higher life expectancy.

- An inverse relationship exists between education and urbanization when considering the share of low or poorly educated persons and highly educated persons.
- Labour market transitions into and out of employment are very different across the various types of local labour markets. Local sectoral dynamics (local job-to-job changes) are dominant in strongly urbanized systems, while less urbanized systems depend on the reactivation of local labour market reserves (local unemployed-to-job and job-to-unemployed), i.e. more urbanization leads to local labour markets with more insider-outsider behaviour.
- The dynamics on the sectoral level differ considerably with an apparent reallocation occurring towards IT and services. These differences connect up with differences in the ability to attract an infusion of human capital through the employment of locally educated persons.
- The propensity to activate unemployed persons in general (local, internal migration and immigration) differs considerably across the various types of local labour markets. In addition, the characteristics of the persons reactivated in the local labour market are different across the different types of local labour markets.
- The duration of unemployment spells in local labour markets varies in important aspects with the highest stigmatization of unemployment occurring in more urbanized types of local labour markets.

In the context of these points we can see that the evidence indicates crucial differences in the labour market flexibility of the different types of local labour markets. One such difference concerns insider-outsider effects. Given that these types of effects are more active in more urbanized labour markets, it seems clear that the policies needed to address the particular problems of any given type of local labour market need to be different. Reactivating vacant labour market resources in one kind of local labour market may thus require the application of rather different instruments than in another type of local labour market. Similarly the infusion of new human capital and knowledge through the recruitment of locally educated labour will differ according to the educational infrastructure.

Reforming the administrative structure and adapting national policies should accordingly then go hand in hand. Municipalities are going to merge in Denmark and as such they will attract more duties as regards

labour market policies. Moving from a system of regional agencies to one with more competences embedded in larger municipalities may however be expected to have two types of effects. The emergence of municipalities with increased levels of competences will increase the specificity of the labour markets under the regulation of local labour market bodies. As such, this would require more flexibility in national labour market policies to adapt to these specificities. If restructuring implies the merger of functional labour markets of very different kinds however this will require more flexibility in the implementation in national labour market policies within the municipalities. Moving to a smaller scale relative to the regional level will therefore require more discretionary elements within national policies in the effort to adapt to the difference in labour market flexibilities across the different types of local labour markets.



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