From Labour to Refugee Immigration and the Effects on the Settlement Pattern in Sweden 1950-2005

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Abstract

Studies on immigration to Sweden show, in general, three marked traits: (1) they analyse the migration flows at national level, and (2) they assume that the immigrants are distributed relatively even all over the country. However, different regions attract a different number of immigrants if immigration is studied at regional levels over time. (3) Immigrants are, however, often incorrectly considered as a homogenous group. Instead, four major groups of immigrants can be identified: returning Swedish citizens, tied-movers, refugees and labour immigrants. The two latter groups are the most interesting for this paper.

The aim of this study is to do an analysis, based on period data, of the allocation of immigrants in Sweden 1967-2005 in a regional perspective. The point of departure for the analysis is to distinguish if labour immigrants have a different settlement pattern than refugees. First, the total immigration to each region is analysed, then the immigration for selected nationalities to each Swedish region is analysed. Vacancies, unemployment, labour market participation and the accumulated stock of foreign-born people are included in the analysis as pull-factors. The regional distribution concerning the flow of immigrants are analysed for 1967, 1975, 1990 and 2005.

If immigration should be favourable for the receiving country the immigrants must be able to fill the vacancies wherever the vacancies are located geographically. The results show clearly, contrary to the working hypothesis, that immigrants have been more evenly distributed around the country although the metropolitan areas still are the dominating areas with regard to the immigrants' settlement patterns. Furthermore, also contrary to the working hypothesis, no significant differences in the settlement patterns between refugees and labour immigrants could be found. Regional employment and unemployment rates as well as regional vacancies seem to have little impact on the regional distribution of immigrants in Sweden. There are, however, signs that old industrial regions were overrepresented among the blue-collar immigrants up to the middle of the 1970s.

Keywords: allocation of immigrants, labour market participation, unemployment, immigration flows, stock of immigrants, refugees, labour immigrants, labour demand

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Introduction and background

Sweden has been an immigration country since the 1930s and the share of foreign-born persons increased from a very low level to over 12 percent of the population in 2005 (SCB 2006b). The reasons for immigration to enter and stay in Sweden have changed as well as the immigration categories. Until the end of 1960s, Swedish industry was in need of labour, and as a respons to this a common Nordic labour market was introduced in 1954. The immigration from Denmark, and Norway and, especially, Finland was large during this time. A significant immigration also took place from Southern Europe and it was primarily blue-collar jobs that were demanded. The period between 1970 and 1985 can also be seen as a transitional phase from labour immigration to refugee and family immigration. Since the mid-1980s immigration to Sweden has been dominated by refugee immigration and tied-immigrants (see e.g. Lund and Ohlsson, 1999, Andersson 2006, SCB 2006b).

The settlement patterns of the foreign-born population have changed considerably since the 1960 and 1970s, partly as an effect of the structural transformation of the Swedish economy from an industrial to a post-industrial society, partly as a consequence of the transition from labour immigration to refugee immigration. While many labour market immigrants of earlier years settled down in industrial towns or communities as a result of the demand of blue-collar workers, the refugees after the 1970s and 1980s became more concentrated to the metropolitan areas – the Stockholm, Göteborg and Malmö regions.[1] It is also very rare that the new immigrants leave metropolitan areas (Andersson 2006). This has also been more and more highlighted in media and the political debate and the intra-regional segregation problems are also a prioritized problem to find a way out of.

This development resulted also in some changes in the policy concerning immigration and integration. Politicians, researchers and media noticed the increased concentration in the metropolitan areas in combination with the low labour market participation rates for new immigrants. An attempt to spread refugees more evenly over the country was launched in 1985 with the implementation of *Hela Sverige-strategin* ("the countrywide strategy for refugee reception"). The responsibility of the new immigrants was handed from a government authority to the cities and municipalities. The new strategy further stated that a refugee no longer could settle down where he/she wanted to live, which was an attempt to limit the concentration in the

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[1] Metropolitan counties are, thus, synonymous with Stockholm, Västra Götaland and Skåne counties in this study.

metropolitan areas. From 1985 to 1994, in line with the countrywide strategy, the majority of the immigrants were more than before dispersed across Sweden (SCB 2006b).

This strategy had, however, only partial effects and the immigrants continued to be concentrated in the metropolitan areas. The countrywide strategy was then partially abandoned in 1994 as an evaluation showed that, although the policy was successful in spreading people initially over the country, secondary migration tended to concentrate people again over the years (Andersson 2003). Since 1994, refugees are allowed to arrange for their own living and accommodation conditions and 2005 only 30 percent of new immigrants are involved in the original countrywide placement strategy (SCB 2006b).

The number of studies on immigrants' settlement patterns from a regional point of view is, however, limited outside the USA (Damm 2005). In Sweden, they basically just focus on refugees (e.g. Edin m fl 2004, Åslund 2001, SCB 2006b, Andersson 2003, 2004, 2005). As a result the knowledge on the labour immigrants' regional settlement patterns is limited, especially in relation to the labour market situation and structural transformation in the economy. The scattered local settlement patterns are, however, sometimes analysed from differing points of view.

In the debate on labour shortage and the need for labour immigration it is, however, implicitly assumed that the labour immigrants will move to the vacancies. At the same time the foreign born population in Sweden has become increasingly concentrated to the three metropolitan areas – Stockholm, Gothenburg and Malmö. If labour immigrants do have the same settlement patterns as refugees, labour immigration will not mitigate the labour shortage outside the metropolitan areas, something that is often stated in the debate. Alas, the knowledge on the settlement patterns of labour immigrants compared to refugees is rather limited.

The aim of this study is to analyse the immigrants' settlement patterns in Sweden between 1950 and 2005 in a regional perspective – i.e. at county level (NUTS3). This is, however, a restriction if the aim is to analyse the segregation and concentration processes of immigrants within the big city areas but can give a hint about the processes at interregional levels. Three questions will, hopefully, be answered in this study: (1) how does the settlement patterns of immigrants look in a regional perspective during the studied period? (2) Are there differences in the settlement patterns of labour immigrants and refugees? (3) And if so - why? These three questions will explain and analyse the changes that have taken place during the period 1950-2005. The

connection to the structural transformation in the economy and its effects on the demand for labour will then be central and highlighted.

**Immigrants' settlement patterns**

About 54 per cent of all foreign-born persons lived in the three metropolitan counties in 1970, compared to 37 per cent of the total population. This metropolitan concentration of foreign-born persons – as well as the native population – has increased in 2004. While 64 per cent of all foreign-born persons lived in the three metropolitan counties, 51 per cent of the total population lived did the same (Eðvarðsson *et al.* 2007, Ekberg & Andersson 1995. *Cf.* SCB 2004). It is worth noting that none of the studies separate labour immigrants from refugees.

That foreign-born persons cluster in the metropolitan areas is not exceptional for Sweden. This is valid in all other Nordic countries (Eðvarðsson et al 2007) as well as in most other European countries (Vandermotten et al. 2004, 2005). At the same time, the biggest problems with demographic ageing and out-migration of young adults exist outside the metropolitan areas, and the largest demand for labour and labour immigration will be located to the peripheral parts of Europe where ageing and standardised production is most frequent (ESPON 1.1.4, 2005).

Johansson & Rauhut (2007, 2008) find some evidence for a different settlement pattern between refugees and labour immigrants in their studies. Refugees are today more spread over the country than labour immigrants as a consequence of the localization of the refugee centres. This tells, however, nothing about the intra-regional distribution of refugees after their residence permit in Sweden and the concentration process to the big cities.[2] The structural transformation in the economy has resulted in that low-productive and unqualified industrial jobs, jobs that labour immigrants usually pick up, have almost disappeared. One indication of this is that the overrepresentation of the traditional industrial counties diminished and then was underrepresented in the last years of the investigated period. Large cities and the knowledge-based service sector have instead been more and more central for economic growth, whereas the substitution possibilities of differing kinds of labour has deceased with the exception of standardised industrial production and in the lower segment of the service sector. The result of the structural transformation is that both labour immigrants and refugees are, increasingly, headed for the large cities and metropolitan areas with a large amount of service jobs in both the upper and lower labour market segments.

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[2] Immigrants have a relatively higher intensity to move than natives and that this movement is headed towards the metropolitan areas (Ekberg, 1993, 1995, SCB 2006b, Rephann & Vencatasawmy 2000).

Figure 1. The regional number of immigrants to Sweden per 1000 inhabitants 1950-2005
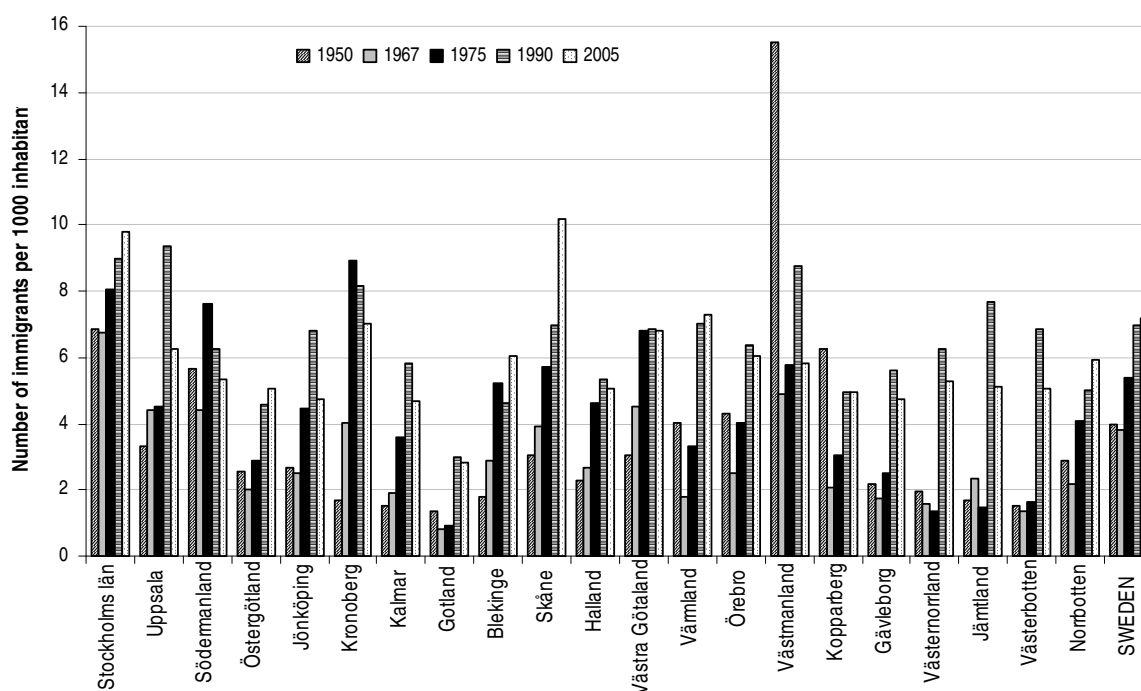
The regional number of immigrants to Sweden per 1000 inhabitants 1950-2005 is shown in figure 1. With few exceptions, most Swedish regions have experienced a relative increase between 1950 and 2005; the exceptions are the (industrial) regions of Södermanland, Västmanland and Kopparberg. The integration process in the Öresund region can – to a great deal – explain the accentuated increase in the number of immigrants per 1000 inhabitants in Skåne between 1990 and 2005.

Method, data and regional over-/underrepresentation

Period data on gross immigration for 1950, 1967, 1975, 1990 and 2005 will be used in this study.[3] This data is available at a regional level (county-level). To increase the comparability between the analysed years, the administrative regional division from 1997 will be used.[4]

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[3] The selected years symbolise four completely different immigration flows. Labour immigration was at its start in 1950 whereas the refugee immigration after the WW2 had decreased. In 1967 the labour immigration peak in Sweden. At the same time the refugee immigration was extremely low. The labour immigration to Sweden had basically stopped in 1975, but an increasing immigration of non-European refugees started. In 2005 the immigration to Sweden was dominated by tied-movers and family reunion, refugees and returning Swedish citizens.

[4] In 1997 Malmöhus County and Kristianstad County merged and became Skåne County. As a result the data for Malmöhus County and Kristianstad County in 1950, 1967 and 1975 will be recalculated into the 1997 regional division. In 1996 Göteborg & Bohuslän County, Älvsborgs County and Skaraborgs County merged and became Västra Götalands County. The data for 1950, 1967 and 1975 for Västra Götalands County will be calculated just as the data for Skåne County. Before 1968 the city of Stockholm and Stockholm County were separated in the official statistics. Therefore the data for 1950 and 1967 have been calculated so that the city of Stockholm is a part of Stockholm County. Finally, before 1997, Dalarnas County was named Kopparbergs County.

It is possible to identify immigrants by citizenship in the flow data for all studied years. Regarding stock data for 1950 and 1967 country of origin can only be measured by citizenship, whereas for 1975, 1990 and 2005 country of origin can be measured by country of birth. The naturalisation of foreign citizens can impose a bias in the stock analysis; when measuring the stock of immigrants using the country of birth is superior to citizenship. However, it can be questioned if the number of naturalised foreign-born persons is high enough to impose any bias in the analysis in 1950 – after all, immigration had been small during the inter-war years and the refugees during and immediately after WW II had not stayed long enough to be naturalised. For 1967 the stock of immigrants will be underestimated due to the lack of data on country of birth.

Since it is possible to identify the citizenship of an immigrant, it is also possible to, roughly, distinguish between labour immigrants and refugees.[5] By comparing the different years it is possible to distinguish whether labour immigrants and refugees have changed their regional settlement patterns in Sweden.

One way to analyse if and in what sense the "preferences" and the settlement patterns have changed between different regions is to relate the regional gross immigration to the regional distribution of the Swedish population. By constructing an index relating to the regional gross immigration and the regional distribution of the population in Sweden it is possible to measure the magnitude of the regional gross immigration in order to analyse the over- or underrepresentation of immigrants in different counties. In short, the index is created by calculating the share of immigrants in region i divided with the share of population in region i, and then multiplied with 100. If the result is over 100 the share of gross immigrants is higher than the region i's size and vice versa. It is then possible to compare the results in order to get a hint of the settlement changes concerning differing regions over time.

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[5] Immigrants from e.g. Finland, Denmark, Norway and Germany cannot receive a refugee status in Sweden, so they are considered as labour immigrants in this study; immigrants from e.g. Iran, Iraq, Chile and Ethiopia can only enter Sweden as refugees. For some countries both a labour immigration and a refugee immigration have taken place: In 1950, 1967 and 1975 immigrants from Poland and the USA were refugees, while they were labour immigrants in 2005; In 1967 and 1975 immigrants from Turkey and former Yugoslavia were labour immigrants, while they were refugees in 2005.

Table 1   Over- and under-representation of the regional gross immigration to Sweden 1950, 1967, 1975, 1990 and 2005 by the 1997 regional division. Index over 100, the county is overrepresented and vice versa

County	Gross immigration Index 1950	Gross immigration Index 1967	Gross immigration Index 1975	Gross immigration Index 1990	Gross immigration Index2005
Stockholm	174,2	177,3	150,0	128,3	134,0
Uppsala	83,8	115,3	85,7	133,6	85,3
Södermanland	142,8	116,4	141,9	89,7	75,9
Östergötland	65,1	53,4	53,2	65,2	69,6
Jönköping	67,3	65,9	81,1	97,1	66,7
Kronoberg	43	103,8	161,9	116,8	95,0
Kalmar	38	50,1	65,5	83,3	65,4
Gotland	33,8	29,2	14,3	42,8	33,3
Blekinge	45,1	78,5	94,7	66,0	82,4
Skåne	77,5	103,3	108,1	99,4	139,5
Halland	58,4	67,8	85,2	76,1	68,8
Västra Götaland	77,2	118,4	124,7	98,3	94,7
Värmland	101,2	46,8	60,0	100,8	103,3
Örebro	108,5	66,5	75,8	91,1	83,3
Västmanland	392,6	129,8	106,3	125,3	79,3
Dalarna	158,7	56,2	55,9	70,9	70,0
Gävleborg	55,2	45,5	47,2	80,0	64,5
Västernorrland	48,9	42,6	24,2	89,2	74,1
Jämtland	42,3	61	25,0	110,1	71,4
Västerbotten	38,8	33,6	31,0	97,8	71,4
Norrbotten	73,6	60,6	78,1	71,4	82,1
Stdv	79,7	38,0	41,9	22,91	23,2
Mean	91,7	77,2	79,52	92,07	81,43
C.V.	0,869	0,492	0,526	0,249	0,285

Source: Johansson & Rauhut (2008)

A changing regional settlement pattern?

Table 1 shows the relative over- and under-representation of regional gross immigration to Sweden. Stockholm County has been overrepresented when it comes to gross immigration relative its size during the whole period analysed. It is worth noting, however, that the relative over-representation has declined over time. Traditional industrial regions, e.g. Södermanland County and Västmanland County, were over-represented at least up to the middle of the 1970s but under-represented in 2005. This change can be explained by a decreasing demand for blue-collars and low skilled labour in the manufacturing industry, something that is related to the structural transformation of the economy. These two counties are "outliers" that can not be characterised as metropolitan counties and that mess up the expected connection between size and over-/under-representation. Both these two counties are much over-represented during 1950, 1967 and 1975 with respect to the stock of foreign-born inhabitants – the Swedish industrial economy was also in zenith in the middle of the 1960s. This can thus be seen as an indication of the diminished importance of the labour market pull-factors over time and an effect of the transformation from an industrial to a post-industrial society (Johansson & Rauhut 2007).

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Skåne County has changed its gross immigration relative its size from being under-represented in 1950 to being overrepresented in 2005. This can be explained by a huge immigration of refugees, and, for 2005, by the integration of the towns and regions on both sides of Öresund (e.g. between Malmö and Copenhagen regions).

From table 1 some more general conclusions can be drawn. One is that the coefficient of variation (C.V.) have diminished and not increased during the period 1950-2005 concerning over- or underrepresentation.[6] This is valid both for gross immigration and the stock of immigrants, which is not shown in table 1, but it is more pronounced with regard to gross immigration. This means in practical terms that the immigrants have been more equally distributed around the country even if the metropolitan areas still are the overwhelmingly dominated areas with regard to the settlement pattern of the foreign population. In what sense this is an effect of the Swedish immigration policy can not definitively be answered by this kind of data - the diminishing C.V. can be a result of the Swedish immigration policy in the sense that the immigrants are localised all around the country in the initial phase. This policy would not have an impact on the stock as much as on the inflow as the latter is more vulnerable than the stock that has been built up during a longer period. The C.V. of the stock of foreign-born people does not drop as much as the gross immigration during the investigated years, a fact that underline this reasoning.

By constructing an index as a ratio between the total share of immigrants in Sweden and the mean of the counties multiplied by 100, it is possible to get a hint about the development regarding over- or underrepresentation of large or small counties. The index is estimated like this where the first parenthesis is the total share of immigrants to Sweden and the second the mean of the 21 counties:

$$SI = \left[\left(\frac{F_{tot}}{P_{tot}} \right) \Big/ \left(\sum_{i=1}^{n=21} (F_i / P_i) \Big/ N \right) \right] \times 100$$

SI (Size Index)=weight index according to size F_i=total flow of immigrants to region i

F_{tot}=total flow of immigrants to all regions P_i=total population in region i

P_{tot}=total population in all regions   N=number of regions

If the index is over 100, large counties are overrepresented and vice versa.

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[6] The coefficient of variation (C.V.) is defined as the ratio of the standard deviation σ to the mean μ: $C_V = \dfrac{\sigma}{\mu}$

Table 2 below shows the development of this index for the period 1950-2005. From table 2 it is obvious that the large counties had a more dominant role in the beginning of the period concerning the stock of foreign-born people. After WW II the discrepancy between stock and inflow was large but after that the overrepresentation of the immigrant stock stabilized around an index of 125-130. The inflow index has, however, been more shaky. It increased up to the middle of the 1970s and dropped after that. In what sense this development is consequences of a changing immigration pattern or a new immigration policy is uncertain. The more restricted immigration policy with refugee centres as a central ingredient may, however, explain the drop between 1975 and 2005 and then especially the sharp decline in 1990. Between 1975 and 2005 the countrywide strategy was implemented and the deconcentration effects seem to be convincing at least with regard to 1990. As earlier mentioned, the strategy aimed at placing refugees in refugee centres all over Sweden, but this strategy was – as mentioned in the introduction – revised in 1994. Today it is possible for refugees to live in either a refugee camp or in an accommodation of their own (SCB 2006a). One of the results of the revision has been that refugees in larger extent live together with relatives in the metropolitan areas instead of refugee centres in peripheral counties. Despite this, the refugee centres seemed, at least in the short term, to have a regional equalising impact of the distribution of immigrants in Sweden – an effect that might be seen in the inflow row in table 2.

Table 2   Over- or underrepresentation of immigrants in the Swedish counties between 1950 and 2005. Index 100 = neither/nor. Source: Estimations based on data from Statistics Sweden.

	1950	1967	1975	1990	2005
Stock	187	125	131	127	130
Flow	109	130	168	110	122

An indication of the more equal distribution of immigrants is also the fact that counties with a large overrepresentation in the beginning of the period are not so dominating at the end of the period regarding the stock of foreign people as well as the inflow of new immigrants. This is particularly pronounced in the case of Stockholm, Södermanland, Örebro, Dalarna and Västmanland (see table 1 and for a more thorough discussion, see Johansson and Rauhut, 2007). The development in the four last mentioned counties underline the argument that there has been a changed settlement pattern as these counties are typical "blue-collar counties" and that the structural change of the economy also has reduced the demand for blue-collar workers.

The metropolitan area Skåne, on the other hand, shows the opposite development. One reason for this is, as mentioned above, the increased integration between Skåne and Själland in Denmark and especially between Malmö and Copenhagen as a consequence of the Öresund Bridge. The Öresund region is more and more becoming an integrated local labour market with increased commuting. In particular the Danishes have settle down in the Malmö-region as a consequence of the higher housing costs in Copenhagen. Besides this, Malmö has been a recipient of refugees and tied-movers during the past decades that have accentuated the overrepresentation of immigrants in the region.

The influence of the metropolitan areas

From table 2 it seems obvious that the metropolitan counties influence the connection between size and over-/underrepresentation. However, by excluding the three metropolitan counties quite another results are obtained. This is illustrated in table 3 and 4 below.

Table 3 Stock of foreign-born inhabitants. The correlation between over-/underrepresentation and the size of the regions and coefficient of variation (C.V.) with regard to 1950, 1967, 1975, 1990 and 2005. N=21, including the metropolitan counties, N=18, excluding the metropolitan counties.

	1950		1967		1975		1990		2005	
C.V. (N=21)	0,600		0,600		0,563		0,416		0,370	
C.V. (N=18)	0,636		0,540		0,558		0,359		0,314	
R^2 (N=21)	0,142	(1,77)	0,195	(2,15)	0,322	(3,01)	0,462	(4,04)	0,491	(4,28)
R^2 (N=18)	0,010	(0,41)	0,070	(1,09)	0,084	(1,21)	0,141	(1,62)	0,058	(0,98)

Note: *t*-values within the brackets.

Table 4 Gross immigration. The correlation between over-/underrepresentation and the size of the regions and coefficient of variation (C.V.) concerning 1950, 1967, 1975, 1990 and 2005. N=21, including the metropolitan counties, N=18, excluding the metropolitan counties.

	1950		1967		1975		1990		2005	
C.V. (N=21)	0,869		0,492		0,526		0,249		0,285	
C.V. (N=18)	0,946		0,435		0,548		0,257		0,196	
R^2 (N=21)	0,015	(0,53)	0,404	(3,59)	0,241	(2,46)	0,122	(1,62)	0,552	(4,84)
R^2 (N=18)	0,007	(0,34)	0,004	(-0,25)	0,001	(0,14)	0,018	(0,54)	0,058	(1,00)

Note: *t*-values within the brackets.

An exclusion of the metropolitan counties has no greater impact on the distribution of immigrants – the C.V.s between 1950 and 2005 are almost the same even if the metropolitan counties are excluded with regard to over-/underrepresentation. This is valid for the stock of foreign-born inhabitants as well as for the inflow of immigrants during the investigated years. Instead, two other things are worth mentioning. One is the trendly diminishing regional gap between 1950 and 2005 and especially then between 1950 and 1967 with respect to the yearly immigration and 1975 and 2005 for both stock and inflow. Another point is the reverse relation

between immigration and foreign-born inhabitants in the beginning of the period and at the end. In the beginning – 1950 – the spread of immigrants was higher than the foreign-born population in total. Fifty-five years later – 2005 – the foreign-born inhabitants were more evenly distributed over the country than the yearly immigrants and this is valid for both categories – if the metropolitan areas are excluded or not does not matter.

One explanation of this phenomenon is the increasing impact of the metropolitan areas on the distribution of immigrants and foreign-born people even if their overrepresentation has diminished. For the years 1975 and 2005 there are significant correlations between the foreign-born population and the sizes of the regions and for the years 1967 and 2005 this is valid also for the inflow of immigrants. This is – at least partly – a consequence of diminished influence of the (industrial) "outliers" concerning over-/underrepresentation with regard to the distribution of the immigrants. If, however, the three metropolitan counties are excluded, the positive correlation between size and immigration as well as foreign-born inhabitants does not exist any more. Instead, the common image of the metropolitan areas as recipients of foreigners and immigrants is more or less confirmed even if the overrepresentation is not so large as it was in the beginning and the middle of the period (for a more detailed analysis, see Johansson and Rauhut, 2007).

Immigrants and regional labour market conditions

This study will distinguish between principally two different types of immigration to Sweden: labour immigrants on the one hand and refugees and tied-movers (family reunion) on the other hand. The labour immigrants, analysed in this paper, have come from Denmark, Germany and Finland, and after the EU-enlargement Poland belongs to this group as well. Before the EU-enlargement immigrants from Poland were refugees. Immigrants from Chile, Ethiopia, Somalia and Iraq are also considered as refugees. Immigration from Turkey consisted of relatives of former labour immigrants in 1975; these immigrants came from Western Anatolia. In 1990 Christian minorities such as Syrians and Assyrians dominated the immigration from Turkey but in 2005 Kurds dominated the Turkish immigration. The inflow of immigrants from Yugoslavia consisted of relatives to former labour immigrants in 1975 and 1990.

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Table 5   Classification of immigrant groups 1975, 1990 and 2005 with available data

	1975/80	1990	2005
Labour immigrants	Denmark, Germany, Finland	Denmark, Germany, Finland	Denmark, Germany, Finland, Poland
Refugee immigrants	Poland, Greece, Chile, Hungary, Iran	Poland, Turkey, Chile, Ethiopia	Turkey, Iraq, Somalia
Tied-movers	Turkey, Yugoslavia	Yugoslavia	
Returning natives	Sweden	Sweden	Sweden

Table 6   Gross immigration. The correlation between over-/under-representation and the size of the regions and coefficient of variation (C.V.) concerning 1975, 1980, 2000 and 2005. N=21.

	1975		1980		2000		2005	
Countries	R^2	*C.V.*	R^2	*C.V.*	R^2	*C.V.*	R^2	*C.V.*
All	0,252	0,526	0,363	0,588	0,584	0,340	0,534	0,285
Sweden	0,644	0,493	0,672	0,363	0,604	0,323	0,570	0,336
Finland	0,094	0,915	0,287	0,918	0,076	0,958	0,017	0,886
Denmark	0,031	0,788	0,034	1,154	0,131	1,301	0,114	2,167
Germany	0,193	0,474			0.008	0,831	2E-08	0,616
Great Britain			0,0526	0,630				
USA					0,547	0,708		
Poland	0,501	1,008	0,546	0,893	0,403	0,636	0,513	0,791
Greece	0,094	1.084						
Turkey	0,540	2,161	0,366	1,472			0,389	0,692
Yugoslavia	0,117	0,999	0,293	1,025	0,015	1,058		
Bosnia					5E-05	1,023	0,059	0,704
Iran			1E-04	2,586	0,110	0,656	0,303	0,650
Iraq					0,200	0,746	0,093	0,635
Chile			0,050	1,381				
Hungary			0,610	1,103				
Somalia							0,011	0,707

Source: Johansson & Rauhut (2008)

In table 6 the correlations between over- and under-representation and the size of the regions and the C.V.s have been analysed for 1975, 1980, 2000 and 2005. Table 6 shows that some nationalities have been more evenly spread over Sweden – e.g. immigrants from Finland, Poland, Iran and Turkey – while others have been more concentrated – e.g. immigrants from Denmark, Germany and Iraq. Both main groups contain labour immigrants and refugees depending on the analysed years. This indicates that there are no significant differences in the settlement patterns with regard to the status of the immigrants and their settlements patterns. Instead, it seems to be other factors that are of importance concerning the "preferences" for metropolitan or other regions – preferences that can differ between the various immigrant groups.

Regional labour markets and previous immigration – some hypotheses

Labour market conditions as well as earlier immigration and agglomeration of foreign-born people are often used as explanatory factors in analyses of immigration and in-migration at regional level. Some of the hypotheses that are discussed in this paper are:

1. Many vacancies in a region will attract immigrants, and vice versa
2. High regional unemployment will repel immigrants, and vice versa
3. Previous migration flows to a region will generate more immigration, and vice versa

Data and explanatory variables

The data with regard to regional unemployment and employment rates is taken from the annual labour force survey (Arbetskraftsundersökningen, AKU). The regional data on vacancies comes from the National Labour Market Board (AMS 1967, 1974 and AMS arbetsmarknadsstatistik) for 1966/67, 1974/75 and 2004/05 and from Statistics Sweden (1989). The regional population data is taken from Statistics Sweden (SOS Befolkningsförändringar del 3, SOS Befolkningsstatistik and SOS Folkmängd del 3). This data is available at a regional level (county-level). To increase the comparability between the analysed years, the administrative regional division from 1997 will be used.[7]

Dependent variable:

F_i: number of immigrants per 1000 inhabitants in region i

Independent variables:

U_i: unemployment rate, % unemployed in region i

E_i: employment rate, % employed in region i

V_i: vacancy rate, % of vacancies in region i in relation to the whole population

S_i: number of foreign citizens per 1000 inhabitants for 1950, 1967 and 1975, and for the number of foreign-born persons per 1000 inhabitants in 1990 and 2005 in region i

Estimations on aggregate level

In order to get a hint about the connections between the dependent variable *(F)* and the independent variables (*U, E, V* and *S*) some bivariate regressions have been done. The natural logarithm has been calculated for all variables so the coefficients will express elasticities. In table 7 the number of immigrants per 1000 inhabitants is analysed together with *U, E, V* and *S* in

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[7] In 1997 Malmöhus County and Kristianstad County merged and became Skåne County. As a result the data for Malmöhus County and Kristianstad County in 1967, 1975 and will be recalculated into the 1997 regional division. In 1996 Göteborg & Bohuslän County, Älvsborgs County and Skaraborgs County merged and became Västra Götalands County. The data for 1967, 1975 and 1990 for Västra Götalands County will be calculated just as the data for Skåne County. Finally, before 1997, Dalarnas County was named Kopparbergs County.

bivariate analyses (Pearson Correlation Coefficients) for 1950, 1967, 1975, 1990 and 2005. The only variable which shows a statistically significant correlation at the 1% level is S. This result is a bit surprising; V ought to have had a significant coefficient for 1967 – analogously with the negative sign concerning U that year – and 1975 due to the labour immigration at that time. The main results of the bivariate analyses in table 7 are that the regional inflow of immigrants F is predominantly determined by the accumulated stock of immigrants and foreign-born people S.

Table 7   Correlations 1950-2005. Regional distribution of immigrants/1000 inhabitants

		In Immigrants per 1000 inhabitants				
	t	1950	1967	1975	1990	2005
In Stock t-1	Pearson Correlation	,935**	,912**	,972**	,605**	,734**
	Sig. (2-tailed)	,000	,000	,000	,004	,000
	N	21	21	21	21	21
In Vacancy ratio t-1	Pearson Correlation	n.a.	,241	,385	,205	,203
	Sig. (2-tailed)	n.a.	,294	,085	,373	,378
	N	n.a.	21	21	21	21
In Unempl t-1	Pearson Correlation	n.a.	-,121	-,474*	-,172	,022
	Sig. (2-tailed)	n.a.	,602	,030	,455	,926
	N	n.a.	21	21	21	21
In Employ rate t-1	Pearson Correlation	n.a.	,178	,409	,372	,086
	Sig. (2-tailed)	n.a.	,440	,066	,096	,712
	N	n.a.	21	21	21	21

** Correlation is significant at the 1% level (2-tailed).
* Correlation is significant at the 5% level (2-tailed).

The results from table 7 should, however, be interpreted with some caution. At least two methodological objections can be raised against the obtained results in the table: (1) Immigrants are, implicitly, assumed to be homogenous, while they are, in fact, a rather heterogeneous group. Finally, (2) the table expresses bivariate correlations – multivariate regressions may end up with different results.

Estimations for selected groups of immigrants[8]
Bivariate correlation analyses have been used for differing groups of immigrants 1975, 1990 and 2005 at regional levels.[9] In table 8 the regional number of immigrants to Sweden by citizenship per 1000 inhabitants, F, are analysed for 1975. Common for all immigrant groups are that the

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[8] The selected nationalities are returning Swedish citizens (SE) and citizens from Denmark (DK, Germany (GE), Norway (NO), Finland (FI), Poland (PL), Greece (GR), Yugoslavia (YU), Bosnia (BO), Turkey (TR), Chile (CL), Lebanon (LE), Ethiopia (ET), Somalia (SO), Iraq (IQ) and Iran (IN).
[9] Neither flow data on immigration nor data for the accumulated stock of foreign-born persons are available for 1950 and 1967, which is the reason why no estimations will be done for these years.

accumulated stock of immigrants per regions, *S*, appears to have a significant impact on the distribution of all seven analysed groups of immigrants; the coefficients for *S* are statistically significant at the 1% level.

Table 8   Bivariate correlations 1975 concerning the regional inflow of immigrants by citizenship (F) and employment rates (E), unemployment rates (U), vacancy rates (V) and the stock of immigrants (S).

t=1975		*ln* E $_{t-1}$	*ln* U $_{t-1}$	*ln* V $_{t-1}$	*ln* S $_{t-1}$
ln F SE/1000	Pearson Correlation	,399	-,427	,184	,824**
	Sig. (2-tailed)	,073	,053	,426	,000
	N	21	21	21	21
ln F FI/1000	Pearson Correlation	-,241	-,041	,057	,591**
	Sig. (2-tailed)	,292	,860	,805	,005
	N	21	21	21	21
ln F DK/1000	Pearson Correlation	,302	-,598**	,449	,643**
	Sig. (2-tailed)	,183	,004	,041	,002
	N	21	21	21	21
ln F GE/1000	Pearson Correlation	,486*	-,568**	,452*	,659**
	Sig. (2-tailed)	,025	,007	,039	,001
	N	21	21	21	21
ln F PL/1000	Pearson Correlation	,655**	-,673**	,510*	,807**
	Sig. (2-tailed)	,002	,002	,026	,000
	N	19	19	19	19
ln F YU/1000	Pearson Correlation	,770**	-,727**	,513*	,631**
	Sig. (2-tailed)	,000	,001	,035	,007
	N	17	17	17	17
ln F GR/1000	Pearson Correlation	,572**	-,709**	,375	,618**
	Sig. (2-tailed)	,008	,000	,103	,004
	N	20	20	20	20
ln F TR/1000	Pearson Correlation	,662**	-,389	,142	,692**
	Sig. (2-tailed)	,005	,136	,599	,003
	N	16	16	16	16

** Correlation is significant at 1% level (2-tailed).
* Correlation is significant at 5% level (2-tailed).

There are negative correlations, which are statistically significant at the 1% level, between the immigration *(F)* from Denmark, Germany, Poland, Yugoslavia and Greece and regional unemployment *(U)* – immigrants from these countries did not settle down in regions with high unemployment rates. There are also statistically significant correlations at 1% level between the inflow of immigrants *(F)* from Poland, Yugoslavia, Greece and Turkey and regional employment rates *(E)*; these groups of immigrants favoured regions with high employment rates when settling down. The same correlation exists for the regional inflow of immigrants from Germany, but at the 5% level.

In table 8, the correlations between the regional vacancy rates, V, and the regional inflow of immigrants (*F)* from Germany, Yugoslavia and Poland are positive and statistically significant at the 5% level. Immigrants from these countries seem to prefer regions with relatively many vacancies.

Table 9 Bivariate Correlations 1990 according to the regional number of immigrants by citizenship/1000 inhabitants

t=1990		*ln* E $_{t-1}$	*ln* U $_{t-1}$	*ln* V $_{t-1}$	*ln* S $_{t-1}$
ln F SE/1000	Pearson Correlation	,488*	-,278	,308	,734**
	Sig. (2-tailed)	,025	,223	,175	,000
	N	21	21	21	21
ln F FI/1000	Pearson Correlation	-,021	,080	,174	,534*
	Sig. (2-tailed)	,928	,731	,451	,013
	N	21	21	21	21
ln F NO/1000	Pearson Correlation	,038	,070	,252	,312
	Sig. (2-tailed)	,869	,762	,270	,168
	N	21	21	21	21
ln F GE/1000	Pearson Correlation	,775**	-,719**	,416	,445*
	Sig. (2-tailed)	,000	,000	,068	,050
	N	20	20	20	20
ln F PL/1000	Pearson Correlation	,316	-,391	,044	,515*
	Sig. (2-tailed)	,163	,079	,850	,017
	N	21	21	21	21
ln F ET/1000	Pearson Correlation	,402	-,125	-,091	-,115
	Sig. (2-tailed)	,071	,588	,696	,620
	N	21	21	21	21
ln F IN/1000	Pearson Correlation	-,207	,193	-,104	,039
	Sig. (2-tailed)	,368	,401	,654	,865
	N	21	21	21	21
ln F LE/1000	Pearson Correlation	-,191	,334	-,370	-,590**
	Sig. (2-tailed)	,407	,139	,099	,005
	N	21	21	21	21
ln F YU/1000	Pearson Correlation	,457	-,495*	,094	,405
	Sig. (2-tailed)	,043	,027	,694	,076
	N	20	20	20	20
ln F TR/1000	Pearson Correlation	-,055	,074	-,213	,083
	Sig. (2-tailed)	,818	,758	,366	,727
	N	20	20	20	20
ln F CL/1000	Pearson Correlation	,128	-,080	,165	,430
	Sig. (2-tailed)	,581	,729	,474	,051
	N	21	21	21	21

** Correlation is significant at the 1% level (2-tailed).
* Correlation is significant at the 5% level (2-tailed).

Table 9 shows the bivariate correlations for 1990 between the regional inflow of immigrants to Sweden by citizenship, F and the independent variables E, U, V and S. For this year, eight different groups of immigrants are analysed. A significant difference compared to 1975 is that the accumulated stock of immigrants (S) has no significant impact on the regional distribution of all of the eleven immigrant groups (F). With regard to the regional inflow of immigrants from Sweden (return migrants) and Lebanon the coefficients for S are statistically significant at 1% level and for the immigrants from Finland and Poland the coefficient is statistically significant at 5% level. For the other seven nationalities the coefficient for S was not statistically significant at all.

The regional unemployment rate (U) obtained no statistically significant coefficients except for the immigrants *(F)* from Germany in the bivariate analysis – for the Germans the negative correlation was significant at 1% level. Perhaps surprisingly, the "contrary" variable (V) did not obtain any statistically significant coefficient at all.

The bivariate analysis in table 9 also showed that the coefficient for the bivariate correlation between the regional employment rate (E) for 1990 and immigrants from Chile was positive and statistically significant at the 1% level. The coefficients concerning the bivariate correlations between employment rates *(E)* and the immigrants *(F)* from Germany and returning Swedish citizens were statistically significant at 1% respectively 5% level. This is perhaps more a result of the fact that regions with high employment rates also are regions with diversified and flexible labour markets than an effect of the employment rates.

Most immigrant groups in 2005 show no statistically significant correlation between the accumulated stock of immigrants per regions, S, and the regional inflow of immigrants (F), except for the immigrants from Iraq, Somalia and returning Swedish citizens. For Iraqi citizens S is statistically significant at 1% level and for Somalian citizens and returning Swedish citizens the correlation is statistically significant at 5%-level (see table 10).

Table 10 Bivariate Correlations 2005 according to the regional number of immigrants by citizenship/1000 inhabitants

t=2005		In E t-1	In U t-1	In V t-1	In S t-1
In F SE/1000	Pearson Correlation	,430	-,191	-,077	,534*
	Sig. (2-tailed)	,052	,408	,739	,013
	N	21	21	21	21
In F FI/1000	Pearson Correlation	,002	,234	-,176	,185
	Sig. (2-tailed)	,994	,307	,445	,421
	N	21	21	21	21
In F DK/1000	Pearson Correlation	,087	-,138	,068	,389
	Sig. (2-tailed)	,707	,552	,768	,082
	N	21	21	21	21
In F GE/1000	Pearson Correlation	,019	-,322	,220	-,116
	Sig. (2-tailed)	,935	,155	,337	,616
	N	21	21	21	21
In F PL/1000	Pearson Correlation	,310	-,311	,181	,390
	Sig. (2-tailed)	,171	,170	,432	,081
	N	21	21	21	21
In F IQ/1000	Pearson Correlation	,245	-,096	,169	,768**
	Sig. (2-tailed)	,285	,678	,464	,000
	N	21	21	21	21
In F IN/1000	Pearson Correlation	-,103	,156	,088	,206
	Sig. (2-tailed)	,665	,510	,712	,383
	N	20	20	20	20
In F SO/1000	Pearson Correlation	,161	,107	-,119	,448*
	Sig. (2-tailed)	,486	,645	,608	,042
	N	21	21	21	21
In F BO/1000	Pearson Correlation	,365	-,588**	,062	,372
	Sig. (2-tailed)	,125	,008	,802	,117
	N	19	19	19	19
In F TR/1000	Pearson Correlation	,016	,418	-,043	,371
	Sig. (2-tailed)	,943	,059	,852	,097
	N	21	21	21	21

** Correlation is significant at 1% level (2-tailed).
* Correlation is significant at 5% level (2-tailed).

The regional vacancy rate, V, and the regional employment rate, E, obtain no statistically significant results for any nationality. With one exception the regional unemployment rate, U, has no statistically significant correlation with the regional inflow of immigrants, except then from Bosnian citizens. The negative correlation with regard to the regional inflow of immigrants *(F)* from Bosnia and U is statistically significant at 1% level – Bosnians seem to avoid settling down in regions with a high unemployment rate or were placed out in regions with low unemployment.

Convergence or divergence

To what extent can the results from the previous chapter be understood by converging and diverging developments amongst the independent as well as the dependent variables? In order to examine these processes analyses of the development of the C.V.s with regard to the explanatory variables have been done (tables 11 and 12).

Table 11   Mean values, standard deviation and coefficient of variation (C.V.) for the independent variables *E, U, V* and *S.*

	Mean	Std. Deviation	C.V.
E 1974	67,30952	2,791219	0,041468
E 1989	83,3	1,811629	0,021748
E 2004	76,64762	2,937111	0,03832
U 1974	2,3	0,873499	0,379782
U 1989	1,683333	0,702377	0,417254
U 2004	5,019048	1,091155	0,217403
V 1974	15,36428	2,754929	0,179307
V 1989	1,095776	0,179023	0,163375
V 2004	7,630003	1,207479	0,158254
S 1974	3,680584	1,893339	0,514413
S 1989	72,39604	30,18856	0,416992
S 2004	93,69906	36,33164	0,387748

In table 11 there is a trend towards convergence amongst the independent variables (*E, U, V, S*) over time, which means that the regional gaps regarding employment, unemployment and vacancy rates have diminished as well as the accumulated stock of immigrants have been more evenly distributed over the country.

In table 12 it is shown that the returning Swedish citizens and citizens from Finland, Poland, Yugoslavia (and Bosnia) and Turkey have experienced a more decentralised settlement patterns, i.e. there is a convergence in the settlement patterns for these groups of immigrants. At the same time the development concerning citizens from Denmark, Germany and Iran shows an increasing regional concentration over time, i.e. an increased uneven regional distribution.

The group containing citizens with a more evenly regional distribution in their settlement patterns as well as the group with an increasing regional concentration contain both labour immigrants and refugees. Some immigrant groups deserve to be commented separately. Polish immigrants in 1975 were refugees but labour immigrants in 2005 and one result of this seems to be a more evenly regional distributed in their settlement pattern. The Turkish immigrants in 1975 were labour immigrants and refugees in 2005 but even in this case there have been a more

evenly regional distribution of Turks among the Swedish counties. Iranian citizens have been refugees during all analysed years, and in table 12 they show – contrary to the Poles and Turks – an increasing regional concentration in their settlement patterns. Danish citizens have always been labour immigrants and in this case there is an increasing regional concentration in their settlement patterns and German immigrants show the same development. Finnish citizens, who also have been labour immigrants, show little changes in their settlement patterns over time. Instead, the traditional Finnish immigration areas are still pull-regions concerning the inflow of Finnish people.

Table 12 Mean values, standard deviation and coefficient of variation for the regional number of immigrants per 1000 inhabitants for selected countries

	Mean	Std. Deviation	Coefficient of Variation
F SE 1975	0,535747	0,264188	0,493121
F SE 1990	0,598039	0,236896	0,396121
F SE 2005	1,211812	0,40921	0,337684
F FI 1975	1,164319	1,06537	0,915016
F FI 1990	0,346152	0,361862	1,045386
F FI 2005	0,28504	0,254274	0,892063
F DK 1975	1,143383	0,901257	0,788237
F DK 2005	0,252178	0,544585	2,159524
F NO 1990	0,75955	0,46081	0,606687
F GE 1975	0,061311	0,029046	0,473747
F GE 1990	0,041215	0,030136	0,731191
F GE 2005	0,223015	0,139286	0,624559
F PL 1975	0,047373	0,04776	1,008159
F PL 1990	0,186213	0,147363	0,791371
F PL 2005	0,236876	0,187534	0,791698
F YU 1975	0,126754	0,126638	0,999084
F YU 1990	0,207979	0,198239	0,95317
F BO 2005	0,06007	0,042183	0,702224
F GR 1975	0,087497	0,094857	1,084112
F TR 1975	0,037163	0,080305	2,160892
F TR 1990	0,167602	0,145405	0,86756
F TR 2005	0,083522	0,057748	0,691407
F ET 1990	0,276269	0,250984	0,908477
F IN 1990	0,57894	0,333188	0,575515
F IN 2005	0,085207	0,055102	0,646682
F LE 1990	0,282845	0,158184	0,559261
F CL 1990	0,192992	0,105575	0,547044
F IQ 2005	0,269742	0,171455	0,635627
F SO 2005	0,15783	0,111176	0,704405

The conclusion is, thus, that the available statistical material at regional level does not give any support for the hypothesis that labour immigrants and refugees have two different settlement patterns and react in different ways with regard to the labour market variables. Instead, the impact of these variables decreases over time. The traditional industrial regions were also

overrepresented among the immigrants up to the middle of the 1970s. The transformation of the economy with deindustrialisation and the rise of the knowledge-based economy have also reduced the importance of the labour market variables for all kind of immigrants concerning the settlement pattern (Johansson & Rauhut, 2008). Instead, the most important pull-factor has been and still is – the regional distribution of foreign-born people.

Concluding remarks and theoretical considerations

By comparing differing immigration groups it is possible to draw some conclusions about the impact of labour migrants and students on the one hand and refugees and tied-mover on the other hand with regard to the settlement pattern. This must, however, be interpreted with utmost care as some stocks of nationalities are small and external chocks may change the size of immigrants largely more or less immediately. It seems, however, that the structural transformation of the Swedish economy and the changes concerning immigration categories in combination – at least partly – with the countrywide strategy have resulted in a more equal regional distribution of immigrants and the large counties' influence have diminished. This is, however, not the same as saying that the segregation problems within the regions or the big cities have decreased – instead, in this case the opposite phenomenon seems obviously to be the true story.

As mentioned above the structural transformation of the Swedish economy seems to go hand in hand with a decreasing impact of the traditional labour market variables. Instead the most important pull-factor is the stock of immigrants. This is also in line with the segmented or dual labour market theories.

The traditional neoclassical push-pull theories concerning labour market conditions seem, thus, to have a low explanatory power concerning the immigrants' settlement patterns and the economic factors behind. Instead, in the post-industrial society a synthesis of the human capital theory and the segmented labour market theory appears to be able to explain the settlement pattern among the migrants. The migrant is rational but considers from the supply point of view (human capital theory) concurrently as the labour market (demand side) consists of several different segments. This has resulted in several distinct segments with little mobility and substitution between the segments, but high mobility and substitution within them. In the post-industrial society, labour and capital are complementary compared to the industrial society where they substitute each other more frequently and frictionless. The production factors have also been more heterogeneous that restricts the substitutability both between the production factors

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and different "vintages" within them. New technology and highly skilled labour complement each other, which increases the segmentation process. This process is also regional in its character since different regions are distinguished by different economic structures. As a result, there can be a regional labour shortage although unemployment is high, which, in turn, creates an inter-regional as well as intra-regional mismatch on the labour market.

According to the segmented labour market theory immigrants are willing to do the "3D"-jobs at wages no natives would accept.[10] Immigrants will become a complementary work force in labour intensive manufacturing and, especially, in the lower segment of the person-oriented service sector. Thus, the wage structure of the native labour in other labour market segments will not be affected. The structural change in the economy results in a situation where the immigrants follow the vacancies in the lower labour market segment with low wages and informal and insecure labour market relations, which accentuates the exclusion of native workers. Jobs in these segments are especially frequent in the metropolitan areas, a fact that reinforce the concentration tendencies. The result will be that the labour market segmentation more and more also will be a segmentation based on ethnicity, a phenomenon that reinforce the segregation problems in especially the metropolitan areas.

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[10] 3D-jobs are synonymous with jobs that are dirty, dangerous and degrading.

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