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INDUSTRIAL STRUCTURE AND POSSIBLE
INDUSTRIAL FUTURES OF THE
MALMOEHUS COUNTY

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PREFACE

Regional development and water resource systems have been an important part of IIASA's research since the Institute's inception. As regional activities grow and decline, the efficiency of land and water management must be developed further. This in turn requires an increase in the degree of sophistication of the analysis, including economic, social, natural resource, and environmental evaluation of development strategies aided by application of mathematical modeling techniques to generate inputs for planning decisions.

In the years 1978-1981 the Resources and Environment Area (REN) of IIASA in collaboration with the Department of Water Resources Engineering of the Lund Institute of Technology/University of Lund, Sweden (LTH) have carried out the study of water resources management problems in South Western Skåne (Malmöhus County) in Sweden. The study was initiated and pursued with the support of the Swedish National Environment Board, whose encouragement and financial assistance is gratefully acknowledged. The methodological work implemented within the framework of this study was generously supported by a grant from the Stiftung Volkswagenwerk, Hannover, Federal Republic of Germany.

Soon after initiation of the joint REN/LTH investigations, the Regional Development Task (RD) of IIASA engaged itself in a case study of economic and demographic, land-use, and related problems for the same region of Sweden. This work was pursued by the RD task in collaboration with the Southwest Skåne Municipal Board, as part of the Board's ongoing work concerning physical and public transport planning for the metropolitan region of Malmö and its neighboring municipalities. Because of the obvious relation between the studies pursued by the REN area and the RD task, both groups interacted intensively throughout the whole



duration of their work. Moreover, it was agreed that analysis of 'alternative futures' of the water resource system in South Western Skåne will take full advantage of the results of the RD studies concerning overall development prospects for the region.

This paper is an analysis of the current industrial structure of the Malmöhus County and its possible evolution in the future. The results of analysis were used to generate industrial development scenarios for this particular region of Sweden, thus providing insight as to the possible future land and water use by industrial activities.

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1. Introduction

In the past five years two of the three metropolitan regions of Sweden, namely the Gothenburg and Malmoe regions have entered a period of industrial stagnation or contraction. Although both regions have had their specific problem industries, their sluggish industrial expansion is far from atypical from Sweden at large. Only late in 1979 did the volume of industrial production again reach the level attained in 1974. There are both external and internal causes to this poor growth record.

Two major external factors can be mentioned. One is, of course, the drastically increased oil bill which hurts the Swedish economy more than the average industrial country because of its high oil dependance (for reasons of climate, a high material standard of living, a sparse production and settlement system and an acquired industrial specialisation in energy-intensive products). However, the enhanced oil import bill demands at least in the long run an industrial expansion which substitutes for other imports and increases exports. So far Sweden has not been able to capture these secondary effects to a sufficiently high degree, in part at least due to the second external factor which have made Swedish exports cumbersome. This factor is the sluggish expansion in the traditional foreign markets of certain basic Swedish export industries. Again this sluggish expansion is partly attributable to the OPEC "taxation of the world economy" thus shifting purchasing power away from industrial countries and to some degree into the future. With its high export content of raw materials, semi-manufactures and investment goods destined to Europe Sweden was challenged with the need to alter both the product and country composition of its exports, which is not rapidly achievable in a small trade-oriented economy.

There is, however, at least one domestic cause to the adjustment difficulties of the country: its poor economic policies during the most critical years. Partly for employment reasons the public sector was allowed to expand at a rate out of touch with the growth of tax revenues. As a consequence the cost situation and the resource availability worsened for the industrial sector when the business cycle improved. At the start of the 1980's Sweden is therefore faced with a deficit in its balance of payments that is several times larger than the average deficit of industrial countries brought about by the huge oil price rises between 1978 and 1980. In addition, the budgetary situation has turned difficult to the point where almost a third of the outlays of the central government is financed through loans at the height of the business cycle!

Under these macroeconomic circumstances it is not very promising to try to make reliable forecasts of the regional economy of the Malmöhus county. Partly for this reason we have settled for a more limited ambition, namely to evaluate in a more qualitative way the future prospects of the manufacturing industry of this region. It is self-evident that also this industry must benefit from the policy changes that have been made and are under way to stimulate an industrial expansion that through increased exports and sales to the domestic market will enable the repayment of the (net) foreign debt during the 1980's. However, the Malmöhus region is so small that its industrial development can substantially deviate from the national one. This will to a considerable extent depend on its acquired industrial competitiveness i.e. on its ability to favourably exploit Sweden's comparative advantages.

A small region in a small open economy can normally be assumed to share the comparative advantages of the whole economy unless its location or for instance other factor

market barriers give rise to specific regional comparative advantages. Analytically, the strength and weaknesses of the present industrial composition of the analysed region can be "revealed" by using the national characteristics of Sweden's comparative costs. The past development of the same regional industry during a period when these costs were established or accentuated can furthermore indicate the ability of the region to favourably exploit the comparative advantages of the country. These advantages have been discussed in Bergman & Ohlsson (1980) and Ohlsson (1976, 1977 and 1980). Some aspects of the regional industrial adjustment behaviour have been analysed in Ohlsson (1979a and b). The following conclusions of this literature serve as points of departure for the present paper:

1. Sweden's comparative advantages is increasingly in human skill intensive industries and decreasingly in capital and raw material intensive ones. It has since long a pronounced disadvantage in raw labour intensive production.
2. Regions with a strong edge in the formation of industrially useful, modern human skills can normally be assumed to have a better ability to adjust to the described changing comparative costs.
3. For a spatially extended economy with such a small population as the Swedish one, it is reasonable to expect the dense metropolitan regions to be early adjusters. This feature is also likely because of the factor market competition with large, foreign trade sheltered sectors.
4. All three metropolitan regions of Sweden showed a poor adjustment record in the period 1965-1975 in terms of rapid growth of sectors with improved international competitiveness. This was particularly the case for the Gothenburg and Malmoe regions, which also deviated unfavourably from the capital region of

Stockholm in their ability to withdraw from non-competitive sectors. In the latter half of the 1970's the adjustment difficulties of the former regions became as a consequence severe.

5. It is the early existence of large production in competitive industries, which proved to be of strategic importance for a subsequent favourable structural adjustment.
6. Another strategic factor was the availability of high risk capital, a factor which in Sweden was revealed for regions that were included under the regional investment aid system.
7. The reconstruction of a risk-taking capital market for the industrial sector is probably a necessary condition for a better adjustment capacity of the three metropolitan regions, since they cannot, at least not for very long periods, be awarded generous regional investment subsidies.
8. Another prerequisite is that the role of the public sector in the regional factor market has to be given much more attention in a situation of persistent and strong international price competition for manufactures. This point is valid not only for the long run expansion of the public sector but also pertains to its business cycle behaviour in combination with the increased role of tenure rights in the Swedish labour market.

The rest of the paper is organized in the following way. Section 2 provides the basic methodology and some aggregate figures of the industrial composition. Then the performance of the foreign trade sheltered and raw material based industries of the Malmoe region is discussed in respectively sections 3 and 4. The main thrust of the paper is, however, the analysis of the footloose industries in section 5. The concluding section 6 puts the main results of the paper in a broader perspective and also brings up the recent policy changes that are of special interest for the successful industrial adjustment of the Malmoe region.

2. Basic methods and assumptions about future competitive conditions

The sluggish economic growth in Sweden during the past five years may well be taken to question whether the present standing of the economy as one of the most highly developed among the industrial countries will remain throughout this century. Our assumed scenario allows the country to have a somewhat less favourable development than other leading industrial countries in the next two decades, but with a lag which is small enough to keep it as a highly developed country with among the highest industrial wage levels. It is also presumed that the Swedish preferences for an internationally even income distribution remain the same.

Consequently we can assume that the comparative advantage in human skill intensive production developed in the past decades will prevail until the year 2 000. The strong comparative disadvantage in raw labour intensive products is thus stable and the decline in the comparative advantage in capital (and raw material) intensive lines of production experienced in the 1960's and 1970's will only in the medium run stop. The reason for the latter assumption is that Sweden in the next 5-10 years have to expand its industrial sector for balance of payments purposes and that this cannot be achieved unless the currency is devalued or the comparative industrial wage level is by other means diminished from its present position as the second highest among the industrial countries. Hence, in the medium run this will help some raw material based sectors and probably stop or diminish the earlier long run relative contraction of these sectors in the Swedish economy.

If, however, the Swedish economic adjustment policies are successful it is likely that the industrial capacity in production with more favourable comparative advantages have increased so much during the 1960's that the earlier decline

in the comparative advantage of raw material based industries will again be more accentuated. With the long run 20-year perspective of this paper, it can therefore be assumed that also the losses in their comparative advantage will be stable to the extent that certain industries develop from export industries to home market oriented import-competing ones although the "home market" can then be assumed to cover more or less the whole Scandinavian market.

So far we have tentatively distinguished between two types of trade exposed industries, namely raw material based and non-raw material based industries. The latter ones is later being defined as footloose sectors. Obviously, not all of the manufacturing sector is exposed to foreign competition. In Sweden at least, a number of industries have for extended periods (between 1960 and 1975) had little exports as well as little competition through imports. These industries, to be called trade sheltered industries have growth conditions which are solely determined within the national economy. Almost all their output reach out beyond the local or regional market.

Our industry classification is applied to 112 manufacturing sectors (comparable to 110 sectors in the regional breakdowns). The (foreign) trade sheltered sector contains 15 industries that in 1960, 1970 and 1975 had low export/output and import/(apparent) consumption ratios (less than 10 %). This major sector holds subsectors with different raw material bases and consumer groups. The (trade exposed) raw material based sector includes 17 food or forest based industries. Their international competitiveness depends not only on the cost conditions of the value added process but also on the future availability of cheap, domestic supplies of their raw materials.

Finally, our third sector, the footloose sector, contains 80 industries (78 in regional breakdowns). Their output and intermediate input prices are by and large determined internationally. Whether or not they use domestically produced intermediate products they can therefore be assumed to be confronted with much the similar costs for these products as their foreign competitors. It is the characteristics of the value added process which determine the international competitiveness of these industries.

It has been indicated above that the Swedish industry has had severe adjustment problems in much of the 1970's. The domestic adjustment to altered comparative advantages has been slow partly because of false expectations of suppliers of capital, the management and also the government. The latter has meant that too much resources has too long been locked into earlier but not currently competitive industries.

Because of these adjustment rigidities it is necessary to make a distinction in the further subdivision of the foot-loose sector between the comparative advantage of the industries and their actual or on the market revealed competitiveness. The former concept thus relates to the potential competitiveness of existing or potential producers in an industry should they perform as well or bad as the average industrial firm in their exploitation of Sweden's comparative cost situation.

The comparative advantage classifications follows the traditional assumptions of multiproduct - multifactor factor proportions theories that production technologies are internationally as well as intertemporally given¹⁾ Furthermore, we have attributed different weights to different production factors as determinants of the comparative advantage pattern. There are empirical grounds for doing so (cf. Ohlsson, 1980). Moreover, it greatly simplifies the classification.

By and large Sweden has cheap human skills and is historically well endowed with such skills. In particular, the two production factors technical personnel and skilled manual workers have proved to be influential owing to that their intensity varies much between industries and that their relative price varies considerably between countries. During the 1970's technical personnel has gradually become more

1)

The latter part of the assumption has been tested in Ohlsson (1977 and forthcoming) as regards the long run stability of relative factor intensity differences. The outcome was that these differences remained stable for periods of one to two decades i.e. as long as could be investigated.

important to the extent that it is here given the key role in our comparative advantage classification. Skilled manual labour is given a secondary role most of all due to the fact that the labour market for this factor has proved to be surprisingly rigid.

A large proportion of firms have revealed severe recruitment difficulties in the past 25 years even in recession years. Nevertheless, it is a cheap production factor in Sweden by comparison with other industrial countries. It has above been said that Sweden's earlier abundance in capital has deteriorated. The tense international price competition in most capital intensive products has been far from met by a lowering of the price of capital for industrial producers. Presently, only government subsidies can keep the mining and basic steel industry from drastic cuts in production and similar intervention is also true in such concentrated industries as the pulp industry and the shipyards, of which the latter is not extremely capital intensive. Here, it is assumed that the comparative advantage is, *ceteris paribus*, better in very capital intensive than in raw labour intensive industries in the long run if, and only if the former require intensively domestically produced, cheap raw materials. The variation in capital intensities in most non-raw material based sectors is assumed to have little influence on the comparative advantages. Consequently, the capital intensity has only marginal importance in the footloose sector but is more strategic in the trade exposed, raw material based sector.

The relative size of these three sectors in the manufacturing industry can be measured in several ways. Following Ohlsson (1979a) it is here measured by the employment because of the lack of possibilities to measure the volume of output in a period with substantial short run price fluctuations. Table 1 shows that the footloose sector was more than twice as large as the sum of the two other sectors in 1975. Also

its shares of gross output or value added were then roughly 67 %. Between 1965 and 1975 its employment contribution increased somewhat and compensated for the contraction of employment in the raw material based sector. Because of the raw material boom following the energy crises in 1973-1974, the size of the raw material based sector is biased upwards still in 1975.

Tables 1 and 2 also shows that the Malmoe region (=Malmoehus county) has a relatively large trade sheltered industry and correspondingly smaller raw material based and footloose industries. It compares in these respects with the capital region of Stockholm. Both metropolitan regions experienced a decline in their industrial employment. In the case of Malmoe the decline is attributable to the low and diminishing employment share of the footloose sector. Only in the very small raw material based industry was the region able to enhance its share of national employment.

Already these aggregated figures give some hints about the nature of the industrial problems of the Malmoe region before and after 1975. Its "employment performance" in the manufacturing industry was not better than that of Stockholm whose industrial employment decline was to a substantial degree and in contrast to the Malmoe case explained by the labour market pressures from the very rapid expansion of the private and public service sectors. The industrial employment problems of the Malmoehus county appear to be related to the development of its footloose industries and/or to its failure to increase its traditional specialisation in the trade sheltered sector. In what follows these features of its industrial problems are further highlighted.

Table 1. . Employment share of three sectors by three urban regions in 1965 and 1975.

Sector	Stockholm region		Gothenburg region		Malmö region		All Sweden	
	1965	1975	1965	1975	1965	1975	1965	1975
Trade sheltered	27,3	24,6	16,9	17,9	23,2	24,4	19,0	19,0
Raw material based	6,0	5,9	6,9	5,8	10,5	11,3	13,1	12,2
Footloose	66,7	69,6	76,2	76,3	66,2	64,3	67,9	68,8
Manufacturing industry total %	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
1,000 employees	118	105	80	81	83	78	896	902

Source: Table 3 in Ohlsson (1979a)

Table 2. Regional shares of sectoral national employment in 1965 and 1975 for the three urban regions.

Sector	Stockholm region		Gothenburg region		Malmö region		All Sweden	
	1965	1975	1965	1975	1965	1975	1965	1975
Trade sheltered	19,0	15,0	8,0	8,5	11,4	11,1	100,0	100,0
Raw material based	6,0	5,6	4,7	4,3	7,5	8,0	100,0	100,0
Footloose	13,0	11,8	10,1	10,0	9,5	8,1	100,0	100,0
Manufacturing industry, total	13,2	11,6	9,0	9,0	9,3	8,6	100,0	100,0

Source: Table 4 in Ohlsson (1979a)

3. The performance of trade sheltered industries in the Malmoe region

Our analysis of the rubricated sector will be less thorough than for the footloose sector. In table 3 the specialisation of the Malmoe region within the trade sheltered sector is shown. It is clear that all three metropolitan regions have relatively large sheltered food industries and very small sheltered forest based industries. The former industries are market-oriented in their location and the latter raw material based. The Malmoe region has also acquired a strong specialisation in certain miscellaneous industries, namely the printing and metal packages industries. Both are rapidly introducing labour-saving technologies and cannot therefore be expected to raise their employment in the future. It is more likely that the growth potentials lie in the building materials industry, for which it is not transportation costs as much as different national tastes and safety standards etc. that have earlier inhibited or reduced international trade.

In conclusion, only a slow rate of growth can be expected in the trade sheltered industry owing to the slow growth of population per capita incomes or national production. By the end of this century the internationalisation of the building materials, printing and metal packages industries opens up possibilities to substantially expand the volume of production in the Malmoe region. Of course, this conclusion presumes that the international trade liberalisation regime is not further eroded in the next two decades.

4. The performance of raw material based industries in the Malmoe region

The trade exposed, raw material based industry incorporates food industries and forest based industries. It is hardly

Table 3. Employment shares for subsectors of the trade sheltered industry in three metropolitan regions.

Trade sheltered subsector	% of total Swedish employment for the sector in			All Sweden in % of total manufacturing employment
	Malmoe region	Gothenburg region	Stockholm region	
Food industries	10,9	10,7	12,8	4,8
Forest based industries	3,0	3,6	1,5	2,9
Building materials industries	11,4	9,0	9,6	5,0
Miscellaneous industries ¹⁾	14,6	8,6	27,2	6,3
All trade sheltered industries	11,1	8,5	15,0	19,0
All manufacturing industry	8,6	9,0	11,6	100,0

¹⁾ Printing ind., oxygen gas tec. ind., iron and non-iron foundries, and metal packages ind.

Table 4. Employment shares for subsectors of the raw material based industry in three metropolitan regions.

Subsectors of the raw material based sector	% of total Swedish employment for the sector in			All Sweden in % of total manufacturing employment
	Malmoe region	Gothenburg region	Stockholm region	
Food industry based on domestic agri-products ¹⁾	42,6	3,5	9,2	1,7
Fish and fish preserve industry	1,2	66,4	0,4	0,3
Breweries	7,6	5,6	34,2	0,4
Chocolate and confectionary industry (imported raw materials)	18,9	1,3	38,0	0,5
Tobacco industry (imported raw materials)	46,0	9,1	18,0	0,2
Food and beverage industry, total	30,0	9,6	17,3	3,1
Forest based industries	0,3	1,4	0,9	9,2
Raw material based industry, total	8,0	4,3	5,6	12,2
Manufacturing industries, total	8,6	9,0	11,6	100,0

¹⁾ includes

surprising that the dense Malmoe region including and surrounded by Sweden's best agricultural areas, is specialised in food industries. Nearly a third of this national industry is located in this region (see table 4). The subdivision within this industry makes it evident that it is in fact the regional supplies of agri-products which once accounted for its strong foot-hold in this industry.

Table 4 also demonstrates that there has developed a "non-competing division of labour" between the three metropolitan regions in the food and beverage industry. A more rapid expansion of this industry in the Malmoe region is because of this specialisation and the highly concentrated owner structure only possible if either domestic consumption begins to increase faster or if the regional industry can enhance their penetration of foreign markets and the domestic market at the expense of non-metropolitan domestic producers or foreign producers. There are reasons to believe that neither possibility is very likely given the oligopolistic market conditions and the ownership background of the major producers.¹⁾

Even with this scanty empirical background it therefore appears safe to conclude that the scope for industrial expansion of the Malmoe region must lie outside the raw material based sector. Since there is no need for further elaboration of this sector the interest is next turned to the large and heterogeneous footloose sector.

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The food and beverage industry includes plants of large international companies, plants owned by farmer cooperatives or the consumer cooperatives and plants in the beverage industry which are state-owned. All these domestic companies appear to pursue what might be called inward-looking policies, in part probably due to foreign trade barriers.

5. The performance of footloose industries in the Malmoe region

Above it was shown that the Malmoe region had the most poor employment development in the footloose sector of all metropolitan regions, in fact even of all but one of the major Swedish regions (cf. Ohlsson, 1979a). Since the expansion possibilities of metropolitan regions lie in increased exports from and import substitution by this sector rather than the raw material (forest) based sector, an evaluation of Malmoe's industrial futures requires a thorough investigation of this sector. ~~The investigation~~ departs from certain (national) criteria of comparative advantage and an evaluation of whether or not the international tradability of the output of various industries is large enough to make the industry vulnerable to intercontinental competition. The latter evaluation is, of course, of interest primarily due to the rapid industrialization of a number of medium and large sized developing countries. The analytical procedure is as follows.

First the 80 (78) footloose industries have been subdivided into four comparative advantage categories according to the ranking of their technical personnel/total employee ratio. At the national level there are around twenty industries in each subsector and the four subsectors are called the most technical personnel intensive, the technical personnel intensive, the technical personnel extensive respectively the most technical personnel extensive. They are below treated in separate subsections but first we need to clarify the common principles behind the analysis.

Because of cost, raw material supply or market access problems the closing of the balance of payment of Sweden has to be achieved by expanding net exports from the footloose industry. In other words, it must increase exports and be able to achieve an increased degree of import substitution in

potentially competitive subsectors. If the industrialisation of developing countries leads to further losses of domestic and international markets for Swedish producers in some parts of this industry other parts have to gain compensating exports to developing countries or to compete more successfully at home and in other OECD markets. Thus, we need at least three countries (or country groups) in our framework: Sweden, other developed countries (DC:s) and less developed countries (LDC:s). It is assumed that Sweden in general shares its comparative advantage with other advanced DC:s but that it deviates from these DC:s (combined or taken individually in some cases) in two important respects.

First, as a small economy it acts as a price-taker in the markets for all footloose industry products. Several large DC:s have generally or in certain markets a clear influence on the price formation. Secondly, the size of the domestic market limits the possibilities for Swedish firms to successfully enter or grow in an industry that is internationally dominated by large, often multinational companies (MNC:s) unless at least one of three conditions is met, namely 1) the industry is heterogeneous and in rapid growth on the market, 2) there are already large Swedish companies within this industry or in associated fields, or 3) the industry is raw material based and can within the country take advantage of abundant supplies of this raw material.

This discussion suggests some basic properties of how the adjustment problems may be tackled in industries where Sweden and other DC:s have a common comparative advantage. Given our earlier assumptions these industries are the human skill intensive ones i.e. ordinarily the industries ranked in the technical personnel intensive and most technical personnel intensive industries. In particular, this is the case if the industry is also skilled manual worker intensive and for such an industry Sweden might have an edge over at least

the U.S.A owing to the narrow pay difference between skilled and unskilled manual workers.

Sweden's competitive situation is similar with that of the LDC:s in both the sense that they are (in general for the LDC:s) price takers and in that most LDC:s have so small domestic markets that there might be entry or expansion barriers (unless ^{LDC} cooperation with MNC:s has been or can be organized). Sweden differ, however, in its comparative advantage completely from LDC:s as regards the products of the footloose industries. In other words Sweden has a comparative disadvantage where LDC:s have their comparative advantage i.e. in industries with low human skill requirements. The technical personnel extensive and most technical personnel extensive subsectors are including these industries.

However, not all these industries has poor prospects in Sweden because of this. First, there might be some industries which use intensively skilled manual workers or in extreme cases the combination of physical capital and domestically available, raw materials.¹⁾ Secondly, the distant location of Sweden from most LDC:s can in certain cases limit the penetration of the latter in the Swedish or nearby markets. Third, some consumer requirements can in combination with other factors at least delay a substantial influx of LDC-produced, more standardised goods.

These are the leading principles behind our classification, which in the following is just postulated.²⁾

1)

Although not technically or by means of high transportation costs really "raw material based".

2)

See Ohlsson (1980b and forthcoming b) for a discussion of the details of the individual classifications.

5.1 The specialisation of the Malmoe region in the four sub-sectors with differing technical personnel intensive industries

Table 5 gives an overview of how the sub-sectoral specialisation of the metropolitan regions varied in 1975 and was changes from 1965. Of the three regions Malmoe has both the worst comparative advantage composition in 1975 and the most poor intra-sectoral employment development. Gothenburg had both a better specialisation pattern and an improvement in this pattern. The capital region of Stockholm had a very favourable inter-sectoral structure, but it lost employment shares in each sector.

Table 5 Metropolitan employment shares and overall employment change in four footloose sub-sectors

Sub-sector	Year	Malmoe region	Gothenburg region	Stockholm region	Employment change in % in all Sweden
Very technical personnel intensive ind.	1975	8,7	16,1	17,9	+ 18
	1965	8,9	15,9	20,2	
Technical personnel intensive ind.	1975	4,3	2,8	7,0	+ 5
	1965	6,8	2,4	9,8	
Technical personnel extensive ind.	1975	12,6	4,6	7,6	- 9
	1965	12,8	7,6	9,4	
Very technical personnel extensive ind.	1975	5,8	7,2	1,4	- 33
	1965	8,6	9,1	3,1	

A favourable change in employment shares may be a result of a better than average development of either the number of

plants in the sector or the plant size (measured by no. of employees/plant). Table 6 presents both these performance indicators. The last row shows the inter-sectoral differences for these indicators for Sweden as a whole. One may observe that the average plant size differs much between the upper two expansive sectors and the lower two sectors with a comparative disadvantage. However, the average plant size differs much between the regions in a way which has no obvious relationship with their employment development. In contrast, the percentage change in this plant size has a close correspondence to this development and more so than the net formation of establishments.

Table 6 Metropolitan development of plant sizes and net plant formation by four footloose sub-sectors. 1965-1975

Sub-sector	Indicator	Malmoe region	Gothenburg region	Stockholm region	Sweden
Very technical personnel int. ind.	Plant size 1975	150	312	138	164
	% change in plant size	+11	+43	+12	+13
	% change in no. of plants	+ 4	-16	- 6	+ 4
Technical personnel int. ind.	Plant size 1975	74	78	90	161
	% change in plant size	-12	+26	- 9	+10
	% change in no. of plants	-24	- 2	- 7	- 5
Technical personnel ext. ind.	Plant size 1975	80	44	35	57
	% change in plant size	-13	-41	-20	-11
	% change in no. of plants	+ 2	- 7	- 9	+ 3
Very technical personnel ext. ind.	Plant size 1975	38	40	12	37
	% change in plant size	-25	-17	-40	- 7
	% change in no. of plants	-40	-37	-45	-22

This table illustrates that one cause of the bad intra-sectoral employment performance of the Malmoe region is the slower than average growth or larger than average decline it has had in its average plant size in all sub-sectors.

Another obvious reason is that this poor performance is in no sub-sector compensated by a better than average change in the number of establishments. This, however, would not have been so bad had Sweden at large experienced a more favourable development of entries. In terms of no. of plants the contrary was the case in the 1965-1975 period. Du Rietz. (1975) has earlier shown that post-war new firm entries gave only little contribution to employment growth in Sweden between 1954 and 1968. Moreover, the entry rate was shown to decline in the early part of our period. Since there are other indications that the northern aid areas have obtained the opposite development (cf. Ohlsson 1979a, 1980) the decline must have been even more pronounced for the rest of Sweden. The Malmoe region stands out as one possible part where this might have happened.

A third negative factor behind the Swedish entry performance is its negative association with the technical personnel intensity within the engineering sector (cf. chapter 7 of Ohlsson, 1980). This finding underlines our result in table 6 that it is the growth rate of the plant size of probably already in 1965 existing, often relatively large plants that have ex post accounted for the main differences in metropolitan employment change. On the other hand the net increase of the number of plants in technical personnel intensive industries is the only favourable deviation for the Malmoe region from the other metropolitan areas.

In what follows our interest will be focussed on the composition within the four sub-sectors. Suffice it to

conclude that the future industrial employment development of the Malmoe region does not look bright in the footloose industry if evaluated by present composition and past performance.

5.2 The Malmoe specialisation in various very technical personnel intensive industries

There are twentyfour industries classified in the rubricated sub-sector, of which sixteen have been evaluated to have especially good comparative advantages in highly developed countries. The remaining part of this sub-sector holds noticable segments that have export potentials for a few developing countries. Table 7 presents the employment composition in 1975 of the Malmoe region in the 25 industries classified with respect to comparative advantages against developed and developing countries as well as the corresponding figures for the two other metropolitan areas and Sweden as a whole.

According to this table 56 % of Sweden's employees in this sub-sector was employed in industries with a good comparative advantage in advanced economies. The Malmoe region did not reach this level (51 %) primarily because of the very pronounced concentration on shipyards. This industry is together with the car industry a potential export industry for populated, capital abundant, coastal developing countries. If the Malmoe region has an unfavourable composition from this point of view, it is still better than that of Gothenburg, which region had more than 70 % of its employees in these two industries.

From this it almost follows that the Stockholm region again favourably deviates from the other two with 79 % of its employees in competitive industries. Another circumstance that is positive for this region is its diversified industrial

Table 7. The employment composition of Sweden and its metropolitan area in 1975 by various very technical personnel intensive industries.

Industry and type of comparative advanced situation	Per cent of sub-sectoral employment for			
	Malmö region	Gothenburg region	Stockholm region	Sweden
<u>Industries with comparative advantages in advanced economies:</u>				
Paint industry	4,0	1,7	2,4	1,3
Pharmaceutical ind.	4,8	0,5	6,3	2,1
Ind. for agric. machinery	2,1	0,0	0,7	3,2
Ind. for metal working mach.	1,3	1,1	1,9	3,3
Ind. for pulp and paper mach.	0,1	0,0	0,4	1,1
Ind. for constr. and minerals mach.	5,1	0,0	1,1	1,5
Misc. goods working mach.	8,9	1,1	7,9	5,7
Computer ind.	3,9	0,9	3,4	1,6
Ind. for lifting equipment	5,5	1,7	1,1	5,7
Ind. for liquid pumps	2,5	0,8	0,9	1,5
Ind. for machinery parts	0,5	10,0	0,3	3,0
Ind. for misc. machinery (incl. turbines)	6,8	1,3	6,6	8,9
Ind. for electr. engines and genera- tors	1,0	0,5	2,5	6,8
Engines for ships and boats	0,0	1,5	0,0	1,2
Air planes ind.	0,6	0,0	3,4	6,1
Instrument ind.	3,9	0,5	8,8	2,9
<u>Industries with segments for semi-industrialised LDC:s:</u>				
Non-organic chem.ind.	5,3	0,0	0,1	1,3
Organic chem.ind.	1,7	2,5	0,1	1,3
Misc. chem.ind.	2,5	0,4	1,2	2,3
Tele communications ind.	0,0	3,3	3,4	13,7
Misc. electr. products ind.	0,8	0,3	2,8	2,4
<u>Industries for DC:s abundant in energy or capital:</u>				
Ind. for non-ferrous metals	0,9	0,1	0,2	1,1
<u>Industries for populated, capital abundant LDC:s:</u>				
Shipyards	35,1	38,4	2,0	11,0
Car industry	2,6	33,1	11,5	11,0
Mean value (standard deviation)	4,1(7,0)	4,2(10,0)	2,9(3,1)	4,2(3,7)

Table 8. Performance indicators of regional and national industries in the very technical personnel-intensive subsector.

Industry	Z change in industrial employment 1965-75 in			Net export ratio		change in net export ratio		import share 1970-75
	Malmö	Gothenburg	Stockholm	Sweden	1975	1970-75		
<u>Industries with comparative advantage in advanced economies:</u>								
Paint	23	-31	-26	-14	-2	5	-1	
Pharmaceuticals	59	441	59	68	-23	0	7	
Agricultural machinery	-15	0	-2	7	-3	-8	8	
Metal working machinery	404	87	27	27	-13	-11	5	
Pulp and paper machinery	*	*	26	13	67	-91	-20	
Constr. and mineral mach.	-33	-28	105	-12	67	44	16	
Other goods working mach.	35	10	34	44	58	23	12	
Computers	*	2194	338	969	-18	14	-7	
Lifting equipment	-29	94	49	51	38	11	7	
Liquid pumps	-30	53	-39	34	-2	-16	9	
Machinparts	-5	-32	12	-11	-6	-26	14	
Misc. machinery	-38	-29	-57	-35	19	14	6	
El. engines and generators	144	-20	324	22				
Engines for ships and boats	0	61	0	138	43	-11	2	
Air planes	-84	-100	0	-1	-16	8	-17	
Instruments	1006	87	42	36	-16	3	4	
<u>Industries with segments for semi-industrialised I.D.C.s:</u>								
Non-organic chemicals	44	13	-44	11	-28	-6	0	
Organic chemicals	38	51	*	109	-35	12	-16	
Misc. chemicals	25	-46	-39	-11	-18	6	11	
Tele communications	-96	30	1	32	23	14	4	
Misc. el. products	610	101	-11	31	8	-4		
<u>Industries for DC:s abundant in energy or capital:</u>								
Non-ferrous metals	26	-70	1	19	-40	4	-4	
<u>Industries for populated, capital abundant I.D.C.s:</u>								
Ships	29	7	-29	10	72	-46	4	
Cars	523	90	48	101	44	-8	2	

* Employment was zero in 1965.

structure (cf. the standard deviation of the employment shares). In this regard, it is even better composed than Sweden as a whole. The Malmoe region has a more diversified structure than the Gothenburg area. It must be observed, however, that an industry which is diversified because of many small establishments in industries with otherwise large establishments must normally be considered as a weak one (cf. the analysis below).

Table 8 presents various performance indicators for the national and regional industries and the periods 1965/70-1975.

As above discussed Sweden's long run balance of payments situation requires an improvement of its trade performance in competitive industries. With the shipyards as the only major exception this suggests that the normal very technical personnel intensive industry should at least not deteriorate its exports compared to the imports it competes with. In 1975, Sweden's most competitive industries among this group were producing machinery for the forest and construction industries and for the miscellaneous goods working machinery industry. In more than half of the potentially best industries for an advanced economy had Sweden then a negative trade balance. Although there were signs of improvement in the 1970-75 period, these signs were neither very large in important industries nor uniformly spread across many industries. Hence, the conclusion must be that there is a considerable growth potential among these industries if the domestic producers are able to better exploit the comparative advantages in the future.

The employment development over the period 1965-75 indicates that these industries are often expansive. With only four exceptions the equivalent industries of the Malmoe region had a worse than average performance. Thus even the intra-

industry adjustment in the actually or potentially best industries has been remarkably poor. The other two metropolitan areas have had a more favourable development in terms of the number of industries with a better than national change in employment. The opposite is true, however, in industries with export potentials in developing countries. Of course, this will remain a favourable deviation for the Malmoe region only to the extent that the intra-industry specialisation lies on products in which the competitiveness will remain strong in high cost economies. At least for the shipyards we know as a fact that it is not the case. Consequently, this industry must throughout the 1980's be a contraction industry especially with regard to its employment.

One of the more important sources of employment growth in competitive production is entries of new plants or firms. It was shown above for the aggregate sectors that the Malmoe region had not been able to expand more or contract less no. of establishments than Sweden at large or indeed other metropolitan areas. Table 9 presents how the metropolitan regions have been able to maintain their shares of the no. of establishments between 1965 and 1975. In each one of the industry groups, the Stockholm region has experienced a declining share. However, it had initially extraordinary high shares in the two groups with an expanding no. of plants. Moreover, the absolute increase it obtained was above or in the neighbourhood of the no. of plants in 1975 of each one of the two other metropolitan areas.

Of particular interest with respect to the Malmoe region is the tendency to have the better performance in industry groups with a declining no. of establishments. Thus, only in one of the two plant expanding groups was it able to increase its share and only because of a small initial no. of plants (from 6 in 1965 to 9 in 1975). This finding strengthens our

Table 9. Changes 1965-75 in the regional shares of number of establishments in certain groups of the very technical personnel intensive industries.

Industry group	Change in regional share of no. of establishments of Sweden for (percentage points)			No. of establishments in Sweden	
	Malmö	Gothenburg	Stockholm	1975	1965
Comparative advantage industries with growing no. of establishments	-0,5	-1,5	-1,6	1 015	738
Comparative advantage industries with declining no. of establishments	1,1	-0,8	-5,2	343	549
Heterog. chem. ind. partially for semi-ind. IDC:s	2,6	-2,6	-1,3	119	145
Heterog. electr. ind. partially for semi-ind. IDC:s	0,6	0,7	-6,9	228	179
Industries for IDC:s abundant in energy or capital	2,5	2,5	-5,0	8	10
Industries for populated capital abundant IDC:s	3,0	-7,1	-4,6	62	84

earlier result for the inter-sectoral comparisons that the Malmoe metropolitan area has historically been unable to renew its industrial composition through new plant formation and growth of existing plants in potentially or actually competitive production. The other two metropolitan areas both managed better to decline non-competitive production faster and had either a good initial composition, it succeeded to uphold (Stockholm) or were able to expand existing plants (Gothenburg). Among these poorly performing dense regions, Malmoe has had the worst type of adjustment behaviour according to our results so far.

5.3 The Malmoe specialisation in various technical personnel intensive industries

Our classification contains twenty technical personnel intensive industries, of which seven have been evaluated to be actual or potential export industries for developing countries, i.e. subject to price competition in at least sizable product segments. Nine of the other industries have relatively high costs of transportation and have for this reason or in combination with other characteristics ¹⁾ been classified as open merely for intracontinental competition. Four industries have been estimated to have a good comparative advantage in industrial countries owing to primarily their technology.

Table 10 reveals the metropolitan employment composition in 1975 in these industry groups. Malmoe stands out as a fairly diversified regional economy in this sub-sector. Moreover, almost 40 % of its workers in this sub-sector are employed in four sectors with a good comparative advantage. Only Gothenburg has a higher (65 %) share. While Sweden as a whole

1) E.g. a high capital/labour ratio or national preferences for design or other attributes.

Table 10. The metropolitan employment composition 1975 by technical personnel intensive industries.

Industry and type of comparative advantage situation	Per cent of sub-sectoral employment for			
	Malmö region	Gothenburg region	Stockholm region	Sweden
<u>Industries with comparative advantages in advanced economies:</u>				
Ind. for fertilizers etc.	12,5	0,0	0,2	1,0
Artificial fiber- and plastic ind.	14,3	28,2	5,0	6,5
Ind. for wood working machinery	1,1	3,2	0,0	2,1
Ind. for car engines and parts	10,1	34,0	5,6	19,0
<u>Industries with mainly intra-continental competition:</u>				
Ind. for soap and detergents	4,9	4,0	10,8	2,0
Oil, asphalt and coal products ind.	8,2	2,7	2,1	0,9
Ind. for bricks and tiles	22,7	0,0	0,5	1,7
Ind. for non-electr. wires and cables	3,7	19,4	1,5	3,1
Ind. for non-electr. household apparatuses	1,9	0,0	9,0	6,8
Ind. for electr. household apparatuses	0,6	1,4	1,0	2,1
Ind. for electr. wires and cables	3,5	5,2	21,6	2,8
Battery and accumulator ind.	0,0	0,0	2,9	1,6
Railroad equipment ind.	0,0	0,0	0,1	0,3
<u>Industries with segments for semi-industrialised LDC:s:</u>				
Industry for handtools etc.	6,4	1,6	10,4	6,3
Misc. office machinery	0,9	0,4	27,8	4,4
Ind. for clocks and watches	0,0	0,0	0,1	0,2
<u>Industries for LDC:s abundant in energy or capital:</u>				
Iron and steelworks	2,8	0,0	1,3	33,9
Ferro alloys works	0,0	0,0	0,0	0,9
Rolling mills etc. for non-ferrous metals	5,7	0,0	0,0	3,6
<u>Industries for LDC:s with semi-skilled labour:</u>				
Ind. for bicycles and motorcycles	0,8	0,0	0,0	0,8
Mean value (standard deviation)	5,0(6,0)	5,0(10,0)	5,0(7,7)	5,0(8,0)

has every second employee of this sub-sector working in industries vulnerable to LDC competition, the corresponding figure for Malmoe is one out of six. All metropolitan areas have a favourable industrial profile in this regard, particularly Gothenburg.

On the other hand, Sweden was with few exceptions not specialised against the world in the industry groups, for which the shares of the metropolitan areas were high (cf. the net export ratio in 1975 in table 11). Nor did Sweden's specialisation trend in 1970-1975 move strongly in favour of these industries. The import share of several industries increased instead rather much. A comparison of the regional employment growth and employment share figures in tables 11 and 10 respectively, gives the impression that it is the decline or worse than average growth of the metropolitan establishments that might account for the poor trade performance of Sweden in these industries. It is note-worthy that the competitiveness of their domestic producers is determined against producers of other advanced economies i.e. other high-cost producers. Also this observation tends to strengthen our earlier results that the adjustment capabilities of Sweden's metropolitan areas have been remarkably poor in production where the country should have a good comparative advantage.

According to table 12 Malmoe's comparative performance with respect to its share of the population of plants was somewhat better for technical personnel intensive industries than for the very technical personnel intensive ones. In two of the three industry groups with expanding no. of establishments did it increase or avoid to decrease its share.

Considering that the exception was the industry group that included two industries (of three) in which Sweden's trade performance was exceptionally good, one should not, however, give too much weight to this somewhat contrasting evidence.

Table 11. Performance indicators of regional and national technical personnel intensive industries.

Industry	Z change in industrial employment 1965-75 in			Sweden	Net export ratio 1975	change in	
	Malmoe	Gothenburg	Stockholm			net export ratio 1970-75	import share 1970-75
<u>Industries with comparative advantages in advanced economies:</u>							
Fertilizers etc.	20	-100	-85	-32	-29	-13	13
Artif. fibers and plast.	2	223	-3	12	-28	10	-5
Wood working machinery	17	-45	*	30	78	25	4
Car engines and parts	383	80	-58	39	-2	14	1
<u>Industries with mainly intra-continental competition:</u>							
Soaps and detergents	-30	27	-6	-11	-22	-6	7
Oil, asphalt and coal prod.	-48	-22	-10	-25	-41	-5	51
Bricks and tiles	-38	*	-76	-58	-37	-10	11
Non-electr. wires and cables	19	25	41	12	-18	-11	23
Non-electr. househ. app.	-59	-100	66	27	26	7	2
Electr. household app.	-22	-39	-94	10	-7	-3	9
Electr. wires and cables	32	201	-27	3	13	14	5
Batteries and ackum.	-100	-100	19	0	6	-8	21
Railroad equipment	*	-100	*	-70	-3	-25	17
<u>Industries with segments for semi-industrialised LDC:s:</u>							
Hand-tools etc.	61	-40	-16	39	60	11	7
Misc. office machines	-97	-97	1	-30	103	55	-22
Clocks and watches	*	*	*	25	-79	6	-4
<u>Industries for LDC:s abundant in energy or capital:</u>							
Iron and steel	31	*	6	3	4	-13	-3
Ferro alloys	*	*	*	-10	-44	-16	15
Rolling mills, non-ferr.	51	*	-100	0	-8	-6	4
<u>Industries for LDC:s with semi-skilled labour:</u>							
Bicycles and motorcycles	-35	*	*	-32	-32	4	5

* Zero employment at least in 1965.

Table 12. Changes 1965-75 in the regional shares of number of establishments in certain groups of technical personnel intensive industries.

Industry group	Change in regional share of no. of establishments of Sweden for (percentage points)			No. of establish- ments in Sweden	
	Malmö	Gothenburg	Stockholm	1975	1965
Comp.adv. ind. with growing no. of establishments	0,0	0,4	-2,1	313	244
Comp.adv. ind. with decl. no. of establishments	2,4	3,5	-3,2	96	103
Intra-contin.ind. with growing no. of establ.	0,8	-1,5	-3,9	105	88
Intra-contin.ind. with decl. no. of establ.	-0,9	0,1	5,8	147	265
Ind. with segm for semi- ind. LDC:s	-3,6	-1,6	-1,9	216	207
Ind. for LDC:s abundant in energy and capital	-0,8	*	-4,7	54	61
Ind. for LDC:s with semi- skilled labour	-6,5	*	*	9	17

* No establishments in 1965 and 1975.

In summary, our conclusion can therefore be specified as follows:

- a) Sweden has failed to specialise sufficiently in industries with a potential comparative advantage in high cost economies
- b) The metropolitan areas must be regarded as especially bad adjusters in this respect. The fact that the Stockholm area had a favourable pattern of specialisation in 1975 can be attributed to historical heritage because its recent behaviour in the 1965-1975 period did not favourably deviate from non-metropolitan Sweden.
- c) The Malmoe region is evaluated to be the worst adjuster of the three metropolitan areas. First, its overall specialisation change was the worst one. Second, it was especially poor in the formation of new establishments (firms?) in competitive sectors. Third, its intra-sectoral specialisation was not deviating positively from both the other metropolitan areas in any one of the two studied sub-sectors of the footloose industry.

In the following sector, the comparative development of Malmoe will be studied for the two footloose sub-sectors in which Sweden has a comparative disadvantage at least as far as the technological conditions are concerned.

5.4 The Malmoe specialisation in the two footloose sub-sectors with the lowest technical personnel intensities

The footloose sector of the Malmoe region was in 1975 substantially smaller than that of Gothenburg (20 % smaller employment) and Stockholm (30 % smaller employment). In

contrast, its employment in the two technical personnel scarce sub-sectors was not far from twice as high. In other words, its specialisation on the level of sub-sectors was then exceptionally weak with respect to the presumed pattern of comparative advantages. As was the case with the above discussed sub-sectors, a given sub-sector is composed of industries with different comparative advantages and other competitive conditions. Therefore, the observed specialisation may be less or more unfavourable if account is taken to the intra-subsectoral composition.

The two sub-sectors that are extensive in technical personnel have been subdivided into six industry groups. A group of five technical personnel extensive industries producing paper packages, miscellaneous paper products, miscellaneous rubber products, plastic products and miscellaneous transport equipment has been classified as production with comparative advantages in highly industrialised countries. It is primarily their demand conditions combined with a relatively rapid product development that is the basis for this classification.

Two other classes of industries are considered to face merely intra-continental competition because of costs of transportation. One class is judged more suitable for the industrialized countries (tire, glass, metal furniture, miscell. building materials and electric bulbs), while the other class is presumably more vulnerable to nearby low cost countries (carpet and rugs, wooden furniture, boats and music instruments). The technical personnel intensity is higher in the former group and several have also higher skilled manual worker and/or capital intensities.

The fourth industry group consists of china and pottery, nail, screw and bolts, household metal goods respectively miscellaneous fabricated metal products. These products are globally tradable and possible export products for developing

countries that become abundant in semi-skilled labour. However, each one of the four industries and especially the fourth one also includes highly expansive products for producers in industrialised countries.

The fifth industry category is comprised of typical present-day exportables of developing countries, namely textiles, clothing, shoes and leather products. These industries are all dominated by standardised products and use therefore little skilled manual and non-manual labour. Also the sixth category is extensive in such labour but the more dynamic demand conditions mean less standardised products and a better competitiveness based on design and proximity advantages.

Table 13 presents the metropolitan employment composition by the six industry groups. Half of the employment of the Malmoe region lied in 1975 in the first industry group i.e. in a group with good comparative advantages. Since this share is considerably higher than the corresponding ones for the other two metropolitan regions, it can be concluded that the specialisation of Malmoe is not as bad as it looked on the basis of the intersub-sectoral pattern. This conclusion is particularly true in comparison with Gothenburg, in which every second employee was working in the industry category with the strongest comparative advantages in developing countries. The high share of the Stockholm region in the fourth industry group which contained product segments for certain DC:s is not as unfavourable as it looks. The reason is the high employment in the expansive miscellaneous fabricated metal product industry.

Table 14 presents the development of employment and no. of establishments by industry group and metropolitan area. The figures make it evident that all three metropolitan areas withdrew more rapid from the least competitive industry groups

Table 13. The metropolitan employment composition in 1975 by groups of technical personnel extensive industries.

Industry group according to comparative advantage situation etc.	Per cent of sub-sectoral employment for			
	Malmoe	Gothenburg	Stockholm	Sweden
Industries with comp.adv. in advanced economies	49,1	9,4	26,5	18,5
Intra-cont. ind. for advanced economies	7,3	10,7	10,5	15,3
Intra-cont. ind. for semi-ind. economies	4,2	13,8	1,8	12,1
Ind. with segm for LDC:s with semi-skilled labour	12,1	13,2	51,2	19,2
Ind. for most low wage LDC:s in textiles, clothing, shoe and leather ind.	25,6	47,6	7,7	29,7
Ind. for many low wage LDC:s (wood products, sport prod. and misc. manuf.	1,7	5,3	2,3	5,3
All technical personnel extensive ind.	100,0	100,0	100,0	100,0

Table 14. Metropolitan employment and establishment development 1965-75 in technical personnel-intensive industries.

Industry group	% change in employment for		% change in no. of establishments for					
	Malmö	Gothenburg	Stockholm	Sweden	Malmö	Gothenburg	Stockholm	Sweden
Ind. with comp. advant. in adv. econ.	-6	-42	-15	17	29	-9	5	27
Intra-cont. ind. for advanced econ.	31	-43	-67	-9	21	-12	-31	2
Intra-cont. ind. for semi-ind. econ.	-3	55	-59	4	-24	-7	-37	-15
Ind. with segm. for I.D.C.'s with semi-skilled labour	9	-13	-9	0	-8	13	-8	6
Ind. for most low wage I.D.C.'s (textiles, clothing, shoe, leather)	-54	-61	-66	-45	-42	-44	-48	-37
Ind. for many low wage misc. manuf. I.D.C.'s (wood prod., sport prod.)	-46	-7	-62	2	-25	-22	-30	3

(no. 5 and 6) than other parts of Sweden. Again it is shown that dense regions with alternative employment opportunities and relatively high costs of labour is most successful with the "adjustment push" part of the industrial adjustment process. The Malmoe region deviates also favourably with respect to its establishment expansion in the two most competitive industry groups (no:s 1 and 2). This deviation is not as clear in employment terms and it also contrasts with the results for the two footloose subsectors with a good comparative advantage. Our conclusion from the analysis of the latter two sub-sector still holds owing to the less clear-cut results of table 14 and the fact that industry groups 1 and 2 have a less favourable comparative advantage than the two mentioned sub-sectors.

The future prospects of the six industry groups will also crucially depend on how the import penetration will develop in the domestic market and whether or not exports will compensate for imports. Of the six groups, the textiles, clothing etc. group is the one in which Sweden is least specialised. Generally medium high or high import shares are combined with negative net export ratios. It is estimated that increased IDC competition will be shared with producers of other industrialised countries (especially Finland and Great Britain) who have earlier substituted for domestic production. Nevertheless this group of industries will continue to contract its employment throughout the next decade.

In the three other industry groups which have prospective export goods from developing countries, Swedish producers have in many industries compensated their domestic market share losses with export increases. Only in such industries as the carpet, musical instrument and miscellaneous manufactures industries is both the import share high and the net export ratio highly negative. This leaves open the

question as to whether or not Sweden is well adjusted in these three types of industries. In turn, the answer on this question will depend on our expectations of the relative wage level and thus the alternatives beforehand in industries where Sweden now has the same comparative advantages as other advanced economies. As was shown above, its historical exploitation of such advantages has not been very successful in the 1960's and 1970's.

6. Future industrial prospects in Malmöhus county

Our analysis has shown that the Malmöhus county is strongly specialised in trade sheltered and trade exposed food industries. The growth prospects of these industries are not promising owing to the almost stable population and an expected low rate of per capita income increase. Also, the trade exposed food industry has not been very competitive in domestic and foreign markets.

In the footloose industry sector, Malmö has had a strong specialisation in chemical industries compared to both the other metropolitan areas. If we group the industries according to comparative advantages, tradability and a couple of other criteria on the competitive situation the following conclusions can be drawn with respect to its industrial composition:

1. The Malmö region is much more strongly specialised in sub-sectors with a comparative disadvantage than primarily the Stockholm region but also Gothenburg.
2. Moreover, its growth performance is also clearly worse with decreasing shares in each comparative advantage sub-sector.

3. Also the adjustment within the competitive sub-sectors has the same characteristic.
4. This poor performance is associable with the inability to sufficiently increase the plant size of the firms combined with a worse than average "net no. of plants" - development. In other words, there are indications that the formation of new firms (and plants) is not satisfactory in the county and especially not in competitive types of industries.

With its unfavourable industrial specialisation and poor historical adjustment performance, one would normally predict bleak industrial growth prospects for Malmoe in the next decade. On the other hand there might be recent internal or external changes that may alter its past standing. One such change is the recent oil price increases combined with the unusually oil dependent Swedish economy. Perhaps through exchange rate adjustments this will cause the relative wages to decline even compared to other industrial countries. Earlier non-competitive production will manage to capture more of domestic and foreign markets. Thus the unfavourable specialisation of Malmoe might not prove to be so bad in the short and medium run.

The more long run prospects will instead depend on whether competitive sectors can expand enough to compensate for (tendencies of) increased imports (or increased competition in foreign markets). It has been observed that Sweden has not been able to specialise much in production with good comparative advantages from a technological point of view. As several traditional export sectors (iron mines, iron and steel industry, pulp industry and shipyards) have experienced a period of contraction, stagnation or declining export growth rates a more successful exploitation of such advantages in the future has to be achieved to keep the country among the most highly developed economies with high relative wages.

If this is in fact achieved, the long run prospects worsen for the Malmoe region unless it can alter its earlier poor adjustment behaviour. Is there any reasons to believe in such an alteration?

First, it must be noted that as a dense, metropolitan region the markets for capital and skilled and unskilled labour should be at least potentially better functioning than in non-metropolitan areas. A few years ago, so called regional development funds were instituted in order to enable small and medium-sized firms within each county to capture growth opportunities. In the county of Malmoehus, this fund was in 1979 complemented by a special investment company with the aim to aid new firm entries. In addition, special funds for product renewal and firm expansion has been allowed under the program for the domestic shipyards. Efforts have been taken to let the University of Lund serve a role as a basis for new firm entries in high technology fields.

There are, in summary, measures taken that might improve the region's capability to exploit Sweden's comparative advantages. Also other policy changes ranging from attitudes towards and rules for risk taking in commercial banks to more active product innovation promotion through the Board of Technical Development should help to improve the situation. However, it cannot be ascertained that these necessary changes will be sufficient for a stable Swedish position in the long run among the most advanced economies and for a corresponding position within the country for the Malmoehus county.

REFERENCES

- Bergman, L. and L. Ohlsson. 1980. Changes in Comparative Advantages and Paths of Structural Adjustment and Growth in Sweden - 1975-2000. WP-80-105. Laxenburg, Austria: International Institute for Applied Systems Analysis.
- Du Rietz, G. 1975. Etabering, nedläggning och industriell tillväxt i Sverige - 1954-1970. Stockholm: The Industrial Institute of Economic and Social Research.
- Ohlsson, L. 1976. Svensk verkstadindustris internationella specialisering. Stockholm: The Industrial Institute for Economic and Social Research.
- Ohlsson, L. 1977. Patterns of engineering trade specialization, 1960-70, and Sweden's Factor Abundance. Journal of Political Economy 85 (2), April.
- Ohlsson, L. 1979a. Components of Urban Industrial Employment Change in a Small Open Economy. WP-79-32. Laxenburg, Austria: International Institute for Applied Systems Analysis.
- Ohlsson, L. 1979b. Tracing Regional Patterns of Industrial Specialization Trends in Sweden. WP-79-33. Laxenburg, Austria: International Institute for Applied Systems Analysis.
- Ohlsson, L. 1980a. Engineering Trade Specialization of Sweden and Other Industrial Countries. Amsterdam: North Holland Publishing Company.
- Ohlsson, L. 1980b. Världshandelsförändringar och Nordens framtida industrisysselsättning. Stockholm: Nordisk Utredningsserie, NU A 1980:2.