

Regional Effects of a Fixed Fehmarn Belt Link

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by Copenhagen Economics Aps and Prognos AG, February 2006

**German Federal Ministry of Transport, Building and Urban Affairs
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Final report

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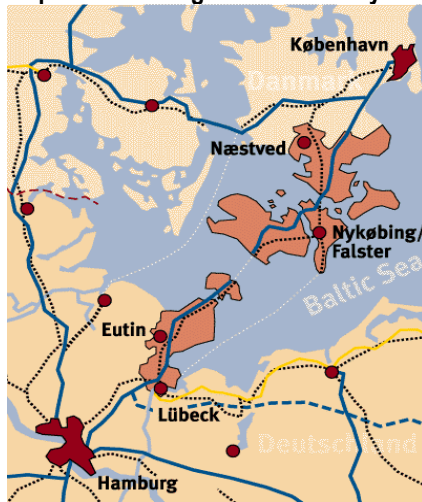
Summary

The purpose of this study is to examine the dynamic and strategic effects of a fixed link across Fehmarn Belt for Storstrøms Amt and Kreis Ostholstein. Of particular interest are the effects that the fixed link will have on the localisation of companies, employment, the tourist industry as well as the cross border cooperation between companies.

We analyse the regional conditions for the two regions and identify how a fixed link can affect the economies in each of the regions. We point out policy areas that need attention in order to make the regions ready for the opportunities that a fixed link can offer. Thus, the study is directed at the regions so that they can start a common strategy process¹.

A fixed link across the Fehmarn Belt will introduce a number of opportunities for the two regions in the immediate vicinity of the proposed link – Storstrøms Amt in Denmark and Kreis Ostholstein in Germany. The fixed link will also imply some challenges to the regional development.

Map 1 The two regions in the analysis



Source: Fehmarn Belt Forum

Today, both Storstrøms Amt and Kreis Ostholstein are situated approximately 1½ hours drive from a dynamic metropolis (Copenhagen and Hamburg respectively). In the future, a fixed link will change the situation in both regions and place them *between* two metropolises. Storstrøms Amt will be about 1½ hours away from both Copenhagen and Hamburg (and likewise with Kreis Ostholstein). This will introduce new opportunities and new challenges for the economic development in the regions due to e.g. easier market access and improved co-operation possibilities.

A fixed link could also make way for increased local economic integration of the two regions. Storstrøms Amt and Kreis Ostholstein could increase their co-operation and develop a joint strategy for defining winning framework conditions for the local industries and businesses.

¹ Therefore the current study is not part of a cost-benefit analysis of a possible fixed link across Fehmarn Belt. For this purpose please refer to COWI (2004) "Economic Assessment of a Fixed Link across the Fehmarn Belt" and Copenhagen Economics and Prognos (2004) "Economy-wide benefits".

The two regions can to a large extent foresee similar opportunities and challenges of a fixed link and there is a large similarity in their strengths and weaknesses. The two regions are at the periphery of their respective countries, and as such, they share a number of common characteristics and challenges in terms of socio-economic development. Both regions are lacking behind the national average in terms of income per capita and both regions have experienced a slower economic growth, than most other regions within their respective countries.

The fixed link will offer opportunities for further development within a range of different activities. Of these opportunities the most promising are evaluated to be:

- Construction, which will be boosted during the construction phase if the proper precautions are taken in due time
- Tourism, where the regions already have important strengths and the fixed link will improve both market potential and the competitiveness relative to other destinations
- Export, especially an increase from small and medium-sized enterprises (SME) and of traditional goods is to be expected on both existing and emerging markets when the infrastructure improvement reduces the costs of exporting
- Medico-health cluster, where the fixed link will make it possible for Storstrøms Amt and Kreis Ostholstein to complement each other and thereby gain competitiveness in both regions.

In order to realise the opportunities some actions are needed. Thus, we propose that the regions develop some principles, structures and strategies that will facilitate the realisation of the necessary policies.

The socio-economic development in Storstrøms Amt and Kreis Ostholstein has been less positive in the last decades than the nation-wide average in Denmark and Germany respectively. A fixed link across the Fehmarn Belt will provide opportunities for the two regions. If the two regions manage to exploit these opportunities the fixed link along with other initiatives can be a catalyst for growth in the two regions.

Chapter 1 Introduction to the analysis

The Danish Ministry of Transport and Energy and the German Federal Ministry of Transport, Building and Housing have asked Copenhagen Economics ApS and Prognos AG to perform an analysis of the regional effects from a fixed link across the Fehmarn Belt.

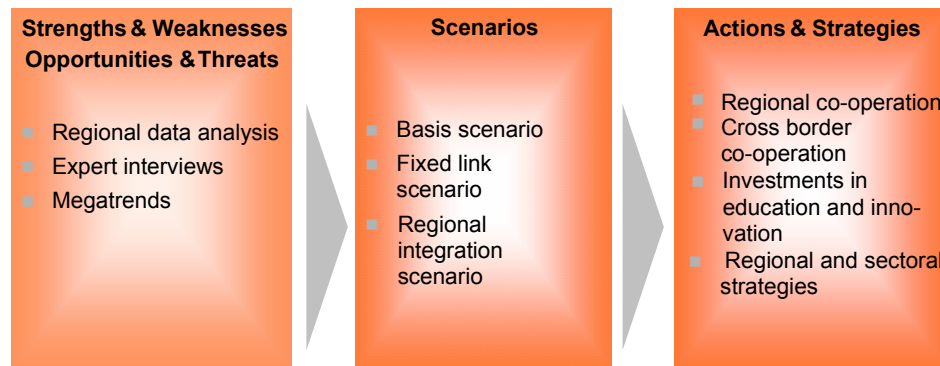
1.1. Purpose of the study

The purpose of the study is to examine the possible dynamic and strategic effects of a fixed link across Fehmarn Belt for Storstrøms Amt and Kreis Ostholstein.

The main objective is to prepare a SWOT-analysis² of the regional economic development in both Storstrøms Amt and in Kreis Ostholstein. The aim of the two SWOT-analyses is to identify the strengths and weaknesses of the regions and to identify possible actions and strategies for the two regions. We will summarise and compare the key strategic challenges to the two regions on the basis of new numerical analyses and on the existing analyses of the two regions.

The focus in the analysis will then be on how a fixed link could change the economic development strategy in each region. Furthermore, we will exploit the potential effects of a number of carefully selected regional integration policies and measures.

Figure 1.1 The use of SWOT-analysis to develop regional strategies



Source: Prognos AG

On the basis of the SWOT-analysis we assess the potential effects of a fixed link across the Fehmarn Belt for the existing companies in Storstrøms Amt and Kreis Ostholstein as well as the localisation of companies and establishment of new companies in the region. The

² Strengths, Weaknesses, Opportunities and Threats.

assessment includes the possibility that business clusters and common competences across the Fehmarn Belt can be developed. The tourism industry is also given attention.

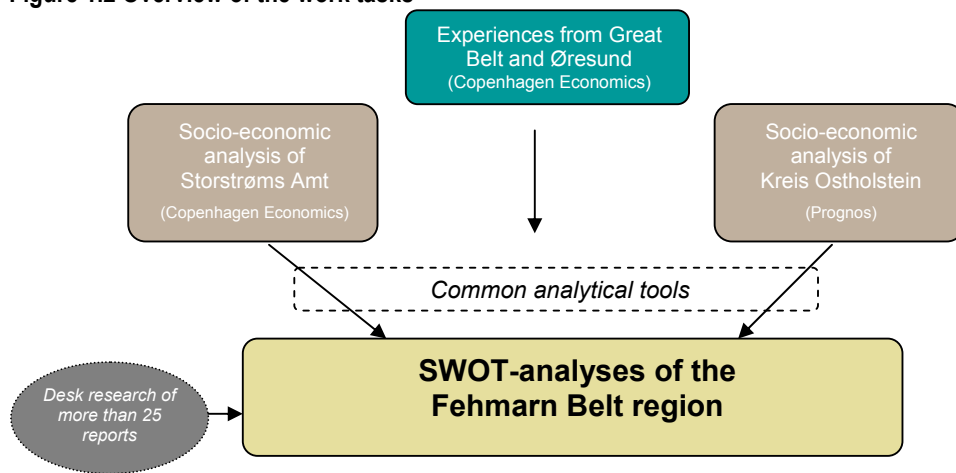
1.2. Overview of the study

The study consists of three tasks:

- *Task 1* *Socio-economic description of Storstrøms Amt and Kreis Ostholstein*
- *Task 2* *Effects of the fixed links across the Great Belt and Øresund*
- *Task 3* *Assessment of the potentials for Storstrøms Amt and Kreis Ostholstein.*

Workshops in both regions have been held. The Danish workshop was held just before Christmas 2004 and the German workshop took place in January 2005. The two workshops were planned in coordination with the relevant local stake holders.

Figure 1.2 Overview of the work tasks



1.3. The structure of the report

The report is structured as follows: In chapters 2 and 3 we analyse the strengths and weaknesses of the two regions (first Storstrøms Amt in chapter 2, and then Kreis Ostholstein in chapter 3).

In chapter 4 we exploit the possible regional economic effects of fixed links by looking at the effects of previous fixed links. First we analyse the effects of the Great Belt fixed link and then the effects in the Øresund region. We use these analyses to point at some likely effects in the case of the Fehmarn Belt, being aware that all three cases are different.

Chapters 5 and 6 are devoted to the opportunities and threats from a fixed link for Storstrøms Amt and Kreis Ostholstein respectively. In chapter 7 we summarise our findings and list a number of policy recommendations based on the SWOT-analyses in the previous chapters.

Five appendices are attached to the report. In appendix 1 we provide a guided graphical tour through the last 5 to 10 years of socio-economic development in Storstrøms Amt. And in appendix 2 you are invited to follow Kreis Ostholstein's development on the same key development indicators. Appendix 3 shows the participation lists from the Danish and German workshops. In appendix 4 and 5 a socio-economic description of the Great Belt and Øresund regions is presented.

Chapter 2 Strengths and weaknesses of Storstrøms Amt

In this chapter we analyse the regional economy on the Northern side of the proposed fixed link across the Fehmarn Belt – in Storstrøms Amt. Storstrøms Amt consists of the southern part of Zealand and the islands of Lolland and Falster. The region is 3,398 km² in size with about 261,000 inhabitants. The region's population density of 77 inhabitants per km² is below the national average (Denmark: 126 inhabitants per km²). In terms of location the region is seen as a Danish periphery region, even though it is only 150 kilometres from the capital.

We now present the strengths and weaknesses of Storstrøms Amt. The chapter starts out with a summary of the results from the socio-economic analysis presented in appendix 1. We then present the detailed results of four new numerical analyses of Storstrøms Amt:

- An **income gap analysis** (decomposition analysis) showing that Storstrøms Amt is currently 12 percent below the average income per capita, and that low productivity and low labour market participation are the two main explanations for this gap.
- A **job growth analysis** (shift-share analysis) of Storstrøms Amt showing that employment has declined by 1 percent from 1993 to 2002 while the total Danish economy produced 7 percent more jobs over the same period. An “inopportune” industry structure only explains about one fifth of this difference. The rest is explained by lower regional job creation sector by sector.
- An **analysis of the industrial strongholds** (bubble-chart analysis) showing that Storstrøms Amt is specialised and gaining specialisation in public sector activities and losing ground in most private sector activities. The construction sector is the only private sector industry where the region at the same time is specialised and gaining specialisation.
- Finally, a **regional competitiveness analysis** showing that Storstrøms Amt has a weak position on most of the new growth drivers. The greatest asset of the region is the labour force, which on average has a high level of working experience and is considered as very reliable. This has in part compensated for a generally low education level.

2.1. A brief socio-economic portrait of Storstrøms Amt

The socio-economic analysis of Storstrøms Amt shows a picture of a region with:

- Slow population growth and a population that is predicted to decline after 2012

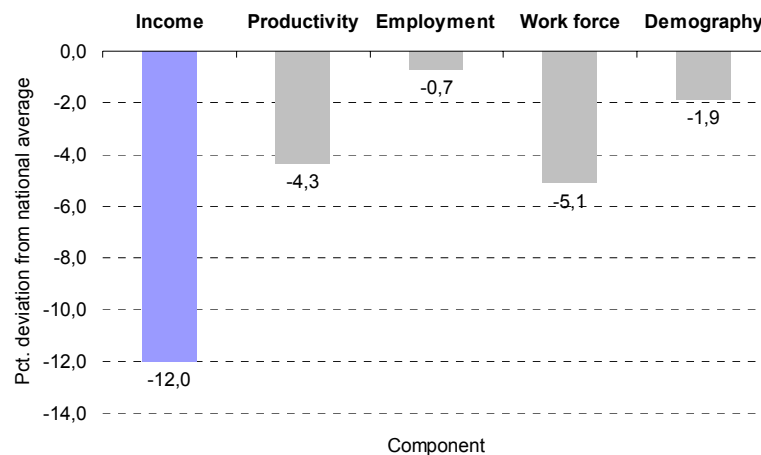
- Many old people, and an age gap to the national average that is predicted to increase until 2040
- An unemployment level – currently at 6% – that is slightly but constantly higher than the Danish nation-wide rate of unemployment
- A population which is increasingly finding jobs outside the region. Therefore, commuting out of the region is increasing faster than commuting in general
- A less well educated work force, also a tendency of a widening educational gap compared to the national development
- A net-inflow of new citizens since 1996 and net-migration is at its highest level since 1980. The migrates are often unskilled and sometimes unavailable for the labour market and the population increases slower than the national average
- More agriculture and less services than the national average – a pattern that did not change over the last ten years
- More tourism than other regions – the number of tourists per year is more than double of the national average compared to its size
- High export dependency – the region is exporting 33 percent more than the average Danish region – when controlling for its size
- 66 percent of its exports are to EU-15 countries and the region's exports are under-represented on the emerging markets and also on the eastern European markets.

The full socio-economic analysis is presented in appendix 1. We now turn to more in-depth analyses of the region's fundamental growth problems.

2.2. Income gap analysis (decomposition analysis)

The income per capita in Storstrøms Amt is around 12 percent less than the Danish national average. We can decompose this income gap into four components: productivity, employment, work force and demography. The four components add up to the total deviation from the national average.

Figure 2.1 Decomposition of the income level deviation from national average 2003



Source: Copenhagen Economics

The first component tells us that out of the 12 percent income gap, 4.3 percentage-points are owed to the fact that the employees have lower overall productivity, i.e. the primary income generated per employee is relatively low. Some of this is due to the sectoral mix in the region. Some is due to the low educational level, and some is due to the region's specialisation in the low end of the value chain. Finally, to some extent poor management and inefficient labour has its share of the result – as in any other region.

The second component “employment” tell us that unemployment is not a major part of the explanation of the income gap since unemployment is not substantially higher than the national average. The employment component only adds 0.7 percentage points to the total deviation.

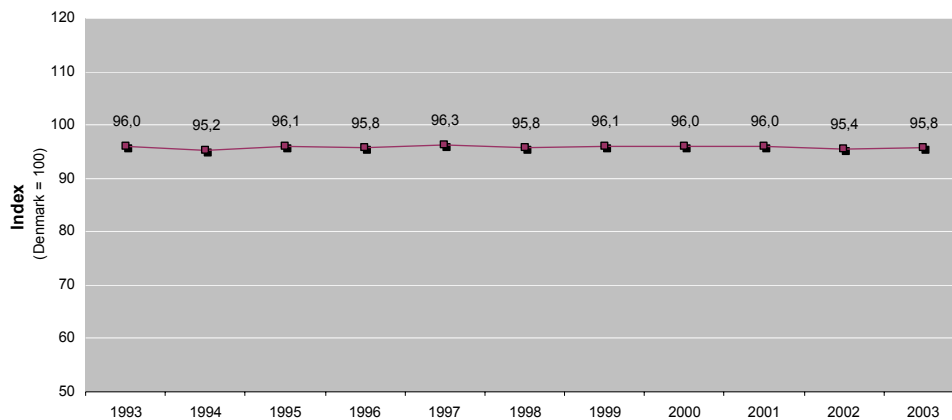
The third component is the labour market participation (or the size of the work force compared to all persons between the age of 16 and 66 years old). Clearly, Storstrøms Amt is challenged by low labour market participation. In other words, a large share of the population between the ages 16 and 66 are outside the labour market, and this is the single most important component in explaining the income gap in the region. The low labour market participation is responsible for 5.1 percentage points of the twelve percent gap.

Finally, demography (the low share of total population aged 16 to 66 years) also adds to the problem with 1.9 percent out of the twelve percentage points.

Looking more closely at the numbers reveals the size of the challenge for the region. We suggest focusing on the two most important elements: the low productivity and the low labour market participation.

Let us first look at the productivity issue. Storstrøms Amt has around 96 percent of the national Danish productivity, here measured as primary income per full-time employee³. The productivity gap of 4-5 percent to the national average has been fairly constant over the last ten years. This means that the productivity growth in the region is about the same as the national average growth, and thus there is no sign of catching up on the productivity.

Figure 2.2 Constant productivity gap in Storstrøms Amt 1993-2003



Source: Copenhagen Economics

The first key challenge for the region is to improve the productivity growth in order to close this important productivity gap. For example, this means a productivity growth that is permanently

³ Measured by place of resident.

half a percentage-point over the national average (+0.5%) for seven or eight years in a row. In section 2.5 we will return to how that can be achieved.

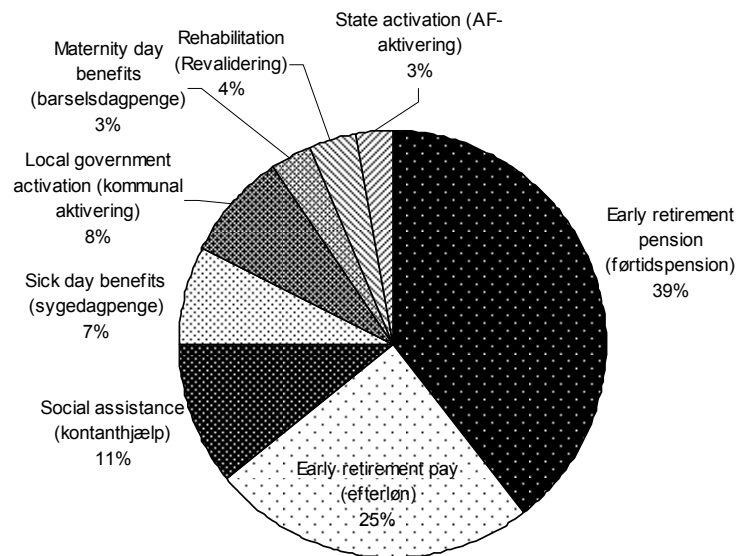
We now turn to the *work force problem*. In 2003, Storstrøms Amt had a population of 260.000 people. Around 172.000 of these were between the ages of 16 to 66 years old. Out of this potential work force, only around 125.000 people participated in the labour market. Of these 117.000 were employed and 8.000 were unemployed (corresponding to an unemployment rate of 6.8 %). In other words 47.000 people in Storstrøms Amt are between 16 and 66 years old, but do not participate in the labour market (calculated as 172.000 minus 125.000 equals 47.000).

According to Figure 2.4, of the 47.000 people outside the labour market:

- Around 30.000 people are on early retirement pay (efterløn) or early retirement pension (førtidspension) corresponding to 63 percent of the 16-66 years old outside the labour market.
- Around 3.500 are on sick leave and 1.500 are on maternity leave, making up about 12 percent of the 16-66 years old outside the labour market.
- Finally, the remaining 12.000 people (or 25 percent) receive other kinds of income transfers (social assistance, job-activation or rehabilitation).

It is primarily the last 12.000 people who potentially can be integrated on the labour market through increased demand for unskilled or low skilled workers as a result of a fixed link across Fehmarn Belt. While such an increase in employment is overall beneficial to the long run economic development, the short run downside is that total labour productivity will become under pressure from the employment of a large share of unskilled people.

Figure 2.3 Distribution by income type for population outside the labour market in age 16-66 years, 2001 Storstrøms Amt



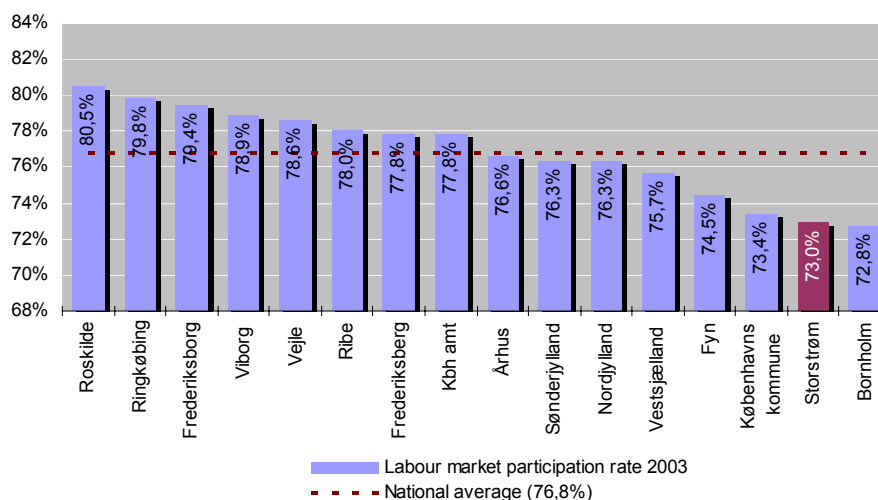
Source: Copenhagen Economics

Note: The change in the shares from 2001 to 2003 has been minor.

The fixed link can reduce the share of non-participation in the labour market. The most likely impact will be through the indirect growth effect, rather than as a direct result of the fixed link.

If for example Storstrøms Amt shall achieve a labour market participation rate as the current level in the rest of Denmark, the region must make 7,000 more people available on the labour market. This corresponds to a labour market participation rate of 77 percent instead of 73 percent today. This would require activating about 1,000 people per year for a period of seven years. This is the second key challenge for the region.

Figure 2.4 Labour market participation rates in Danish counties, 2003



Source: Copenhagen Economics

If these two key challenges – productivity and labour market participation - are dealt with, the region would reduce the income gap by 9.4 percentage-points to a gap of only 2.6 percent below national average income per capita.

Before examining how a fixed link can have an effect on solving these two challenges we need to go a step deeper in understanding the strengths and weaknesses of the region. The next step is to analyse the job creation in the region.

2.3. Job growth and industry structure (shift-share analysis)

The period from 1993 to 2002 was a period of rapid employment growth in Denmark. More than 175.000 jobs were created nationwide, corresponding to a growth of 6.8 percent over the period. During the same period around 920 jobs were lost in Storstrøms Amt, corresponding to a decline of 0.8 percent, cf. Table 2.1.

Table 2.1 Employment and population growth 1993-2002

	1993	2002	Change 1993-2002	Change 1993-2002 (pct.)
Storstrøms county				
Employment	109.731	108.811	-920	-0,8%
Population	257.097	260.498	3.401	1,3%
Denmark				
Employment	2.598.374	2.774.671	176.297	6,8%
Population	5.180.614	5.368.354	187.740	3,6%

Source: Statistics Denmark

The period since 1993 has been characterised by a rapid recovery of the greater Copenhagen region, and those four counties are in top 5 on the list of employment creation until 2002. But

the fourth place goes to Vejle County in Jutland. Furthermore, all counties except Storstrøms county and Bornholm have experienced a period of increased employment.

Table 2.2 Change in employment 1993-2002 in Danish counties

County	Employees	Percentage
Roskilde Amt	10.770	12%
Københavns Amt	37.886	11%
København og Frederiksberg	35.055	10%
Vejle Amt	16.142	10%
Frederiksborg Amt	13.488	9%
Århus Amt	26.572	9%
Nordjyllands Amt	13.761	6%
Ringkøbing Amt	5.960	4%
Viborg Amt	4.869	4%
Ribe Amt	4.216	4%
Fyns Amt	6.891	3%
Vestsjællands Amt	2.492	2%
Sønderjyllands Amt	876	1%
Storstrøms Amt	-920	-1%
Bornholm	-1.761	-8%

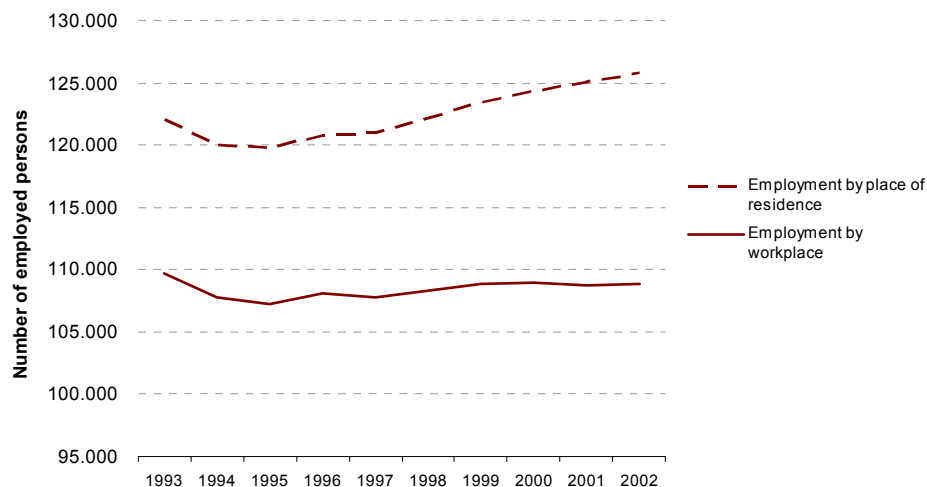
Source: Statistics Denmark

Note: The data are based on workplaces

The above employment numbers are measured by place of work. If we include the employment for residents in Storstrøms county who are employed outside the county (e.g. in the greater Copenhagen Area) the picture looks less pessimistic, cf. Figure 2.5. Since 1993 employment of residents of Storstrøms county in other regions has increased by nearly 5.000.

So in summary it can be said that employment inside the region has gone down, but a dramatic increase in commuting have resulted in higher employment for the regions residents.

Figure 2.5 Employment with and without commuters out of the region, 1993-2002



Source: Statistics Denmark

Projections of demography and the future labour market in Storstrøms Amt has recently been analysed in a report for the Regional Office of the Danish Employment Service (AF-Storstrøm). The report predicts a constant size of the work force until 2011, a five percent increase in employment including net-commuting (+6.000 more employment) from 2005 to 2011, and an increase in the number of workplaces in the region by two percent (+2.500 job openings) in the

same period. Net out-commuting will thus increase by 3.500 or 19 percent. Population is expected to grow by two percent (+6.000 inhabitants).

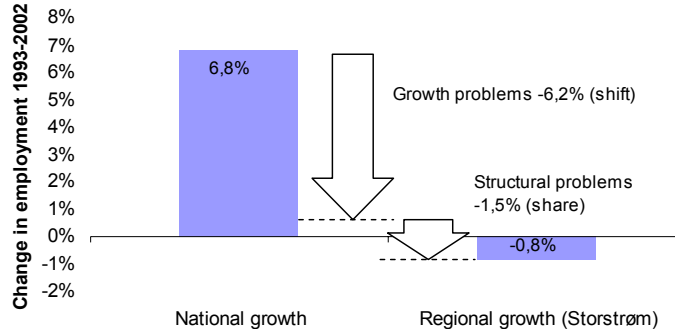
We will now return to the analysis of the historic decrease in employment, and we now ask the question: How much of this lack of new jobs is explained by an “unfortunate” industry structure and how much is due to lower growth in general? A shift-share analysis is the best tool for answering this.

In our *shift-share analysis* we examine the job creation in Storstrøms Amt from 1993 to 2002. By job creation we mean the net-increment in the number of work places in the region. We use the number of work places rather than the number of employees living in the region, because it is the growth of the enterprises in the region that is our key concern.

The analysis separates the growth in employment explained by the mix of industries located within the region (i.e., the region's industrial structure) and the growth attributed to particular regional influences. We accomplish this by comparing the actual growth rate of the region to the growth rate that would have occurred if every industry in the region had grown at the national growth rate for that industry.

The main conclusion is that Storstrøms Amt had a lower growth in employment than the Danish average in the beginning of the 1990s, and that the main explanation for the growth gap is regional factors rather than the structural mix of industries in the region. In other words, the structural mix of industries is responsible for around one fifth of the employment growth gap to the Danish average. Slower job growth within most of the industries in the region is responsible for the remaining large part of the gap, cf. Figure 2.6.

Figure 2.6 Explaining the job decline in Storstrøms Amt 1993-2002

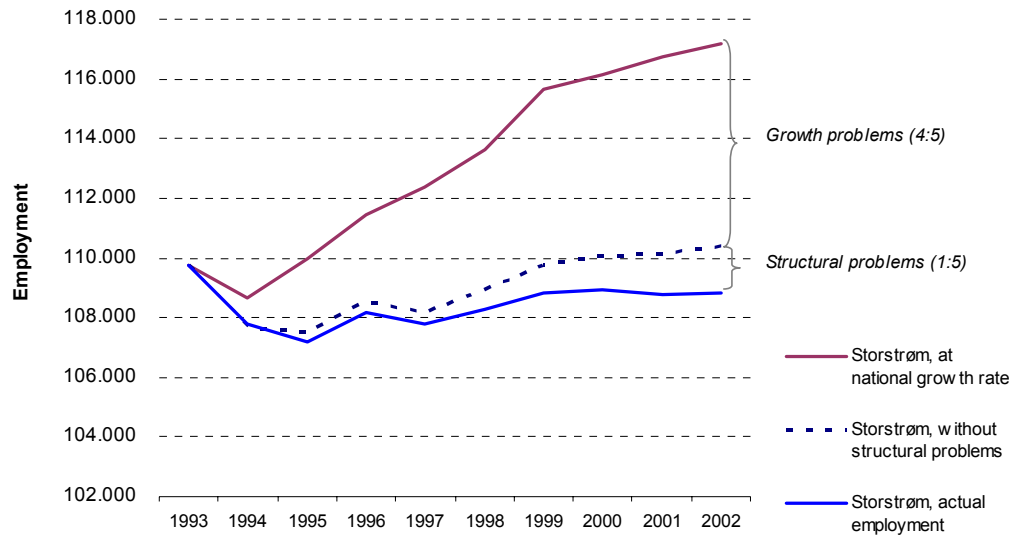


Source: Copenhagen Economics

From Table 2.1 above we can calculate the growth gap between Storstrøms Amt and the national average. This is a gap of 7.7 percentage-points (6.8% minus -0.8%, and after rounding). Our shift-share analysis shows that only one fifth of this gap (or 1.5 percentage points) can be explained by an unfavourable industry structure in the region (*the share-component*). The remaining gap (6.2 percentage points) can be explained by lower job growth in the region when we compare industry by industry (*the shift component*).

In Figure 2.7 we show the development over time. After 1997 the region has caught up to the Danish national average growth and in later years structural problems have become more urgent to solve. The structural problems were rather small at the beginning of the period up till 1997. After 1997 the industry structure has gained importance in explaining the slower job creation in the region.

Figure 2.7 Shift-share analysis Storstrøms Amt, 1993-2002



Source: Copenhagen Economics

The slower job growth in the region is therefore only partly due to an overrepresentation of industries that *per se* has low growth rates. Primarily, Storstrøms Amt experiences lower growth in most industries, when compared with the growth rate in those same industries at a national level.

In total the actual level of employment is almost 7.000 jobs below the hypothetical employment if national growth rate for all industries had applied⁴. A further analysis points at five industries where growth was slower than national average at the industry level. These are: *transport services* “lacking” around 1.500 jobs, *business services* with a “lack” of around 1.300 jobs, *hotels and restaurants* (-962 jobs), *public administration* (-677 jobs) and *wood products and printing* (-506 jobs).

At the other end of the scale sectors like *social institutions*, *construction* and *food industry* points out sectors that grew faster in Storstrøms Amt than in the rest of the country.

⁴ These 7.000 jobs accidentally correspond to the number of persons lacking in the labour force to achieve national labour market participation rates.

Table 2.3 Actual and hypothetical employment in Storstrøms Amt in 2002, sector by sector

Industry	Actual employment 2002	Hypothetical employment if national growth rate for the industry applies	Deviation
Social institutions etc.	16825	16418	407
Construction	8240	7850	390
Mfr. of food, beverages and tobacco	3565	3427	138
Associations, culture and refuse disposal	5842	5781	61
Mfr. of textiles and leather	254	233	21
Fishing	304	285	19
Agriculture, horticulture and forestry	6067	6051	16
Mining and quarrying	202	196	6
Letting and sale of real estate	1470	1499	-29
Human health activities	6707	6748	-41
Finance and insurance	1880	2006	-126
Electricity, gas and water supply	490	616	-126
Wholesale except of motor vehicles	3563	3735	-172
Sale and repair of motor vehicles sale of auto. fuel	2726	2903	-177
Re. trade and repair work exc. of m. vehicles	9097	9281	-184
Mfr. of chemicals and plastic products	1200	1396	-196
Activity not stated	710	936	-226
Mfr. of furniture; manufacturing n.e.c.	695	921	-226
Mfr. of other non-metallic mineral products	1170	1419	-249
Mfr. of basic metals and fabr. metal prod.	6294	6569	-275
Education	8428	8706	-278
Post and telecommunications	1292	1775	-483
Mfr. of wood products, printing and publ.	2619	3125	-506
Public administration	6535	7212	-677
Hotels and restaurants	2961	3923	-962
Business activities	5683	7028	-1345
Transport	3992	5550	-1558
Total	108811	115589	-6778

Source: Copenhagen Economics

In summary we conclude that structure is a small, but increasing part of the explanation for why Storstrøms Amt has experienced a slow job creation. The most important part is that most sectors grew slower in Storstrøms Amt than the national average for the sector (or even declined). This is due to some common regional factors that affect all (or most) types of industries in the region.

Such common factors are often called *territorial dynamics* and depend on specific regional factors like: the capacity of local actors, the level of entrepreneurship, the regional framework conditions, regional identity and on how well the public administration and institutions function.

2.4. Industrial strongholds of the region (bubble chart)

The previous section resulted in a table where Storstrøms Amt's growth by industry was compared to the national average growth. In order to identify the industrial strongholds of the region we need to add one more dimension to the analysis – specialisation. Above we have identified sectors that grew faster in Storstrøms Amt than in the rest of the country. But that is not sufficient. We also need to know whether the region over time have attracted more than average of that industry.

Therefore the vertical axis of Figure 2.8 represents the localisation of an industrial sector proportional to the country⁵. The horizontal axis demonstrates the employment trend within the last 5 years for Storstrøms Amt.

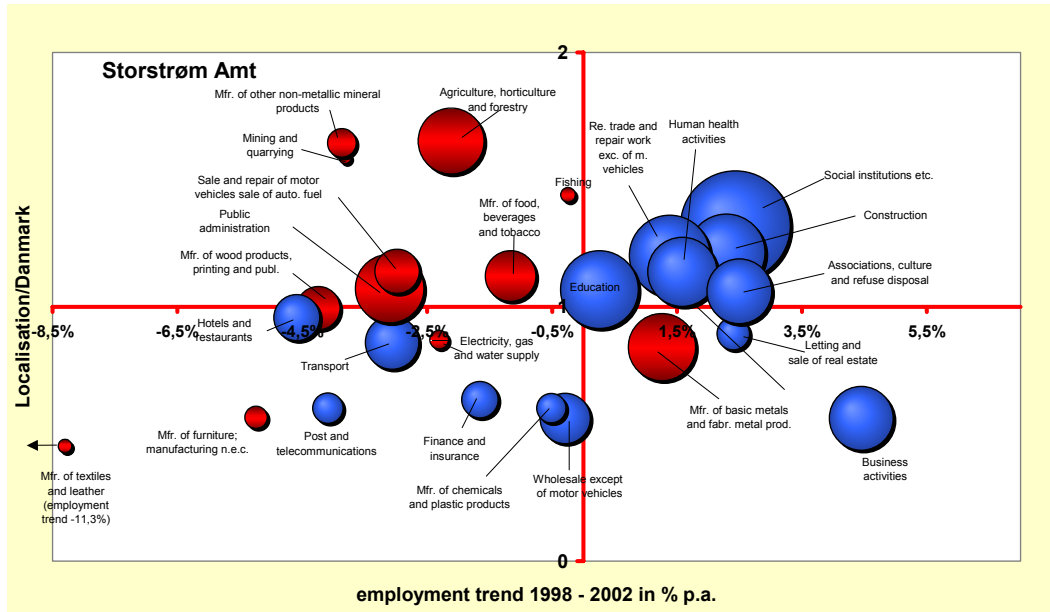
27 industrial sectors are shown in the bubble-chart illustration for Storstrøms Amt. The size of the bubbles indicates the size of the industry (number of jobs). The blue colour represents the industrial sectors, which showed a national increase in employment from 1998 to 2002. The red colour demonstrates the industrial sectors, where a negative employment trend took place.

In 13 industrial sectors the number of jobs in the year 2002 was higher than it was in 1998. Overall, Storstrøms Amt has gained 504 employees, especially in sub areas of social institutions (+1.543 jobs) and in the sector of "business activities" (+908 jobs). The greatest losses have been in the public sector (public administration -878 jobs) and in hotels and restaurants (-612 jobs).

The vertical axis of the illustration shows how Storstrøms Amt is specialised compared to Denmark. Industries above the horizontal line are specialised industries for Storstrøms amt. Industries to the right of the vertical line are industries that grew faster than total employment in the region. Especially relevant are construction and social institutions etc., which represent about a quarter of all jobs. Retail trade and repair work except of motor vehicles is another very important industrial sector with almost 10.000 employees. All of these industries are found in the upper right quadrant of the diagram with both employment and specialisation increasing.

⁵ The so-called localisation quotient expresses the proportion of regional sector-specific employment share in comparison to the national employment share of each sector.

Figure 2.8 Industrial specialisation and employment growth in Storstrøms Amt, 1998-2002



Source: Statistics Denmark, Copenhagen Economics, Prognos AG

The up-coming industries for Storstrøms Amt are found in the bottom right corner. In this quadrant employment is growing, but the region has not (yet) gained sufficient employment to become specialised. Industries like “business activities” and “manufacturing of basic metals” belongs to this category of up-and-coming.

In the upper left corner of the diagram are industries that are still specialised in the region, but which are declining both in absolute terms and compared to other regions. In this section of fading specialisations we find the “agriculture” sector and “public administration”.

Finally in the left bottom corner we find the industries that are neither specialised nor gaining employment. From an economic perspective these are the most challenged.

Important future industrial sectors (coloured in blue) such as “other business activities” and “financial intermediation except insurance and pension funding” are not represented properly in Storstrøms Amt. Especially “business activities” demonstrate a very positive prediction of development.

The central conclusion of the bubble chart analysis for Storstrøms Amt is a positive development of the region. Within the most relevant occupational industrial sectors a positive employment trend has taken place. This positive general view is supported e.g. by the development of other business activities, which produced above-average a 6% increase (in the localisation still lower than the national average) and which will develop furthermore as a “future industrial sector”.

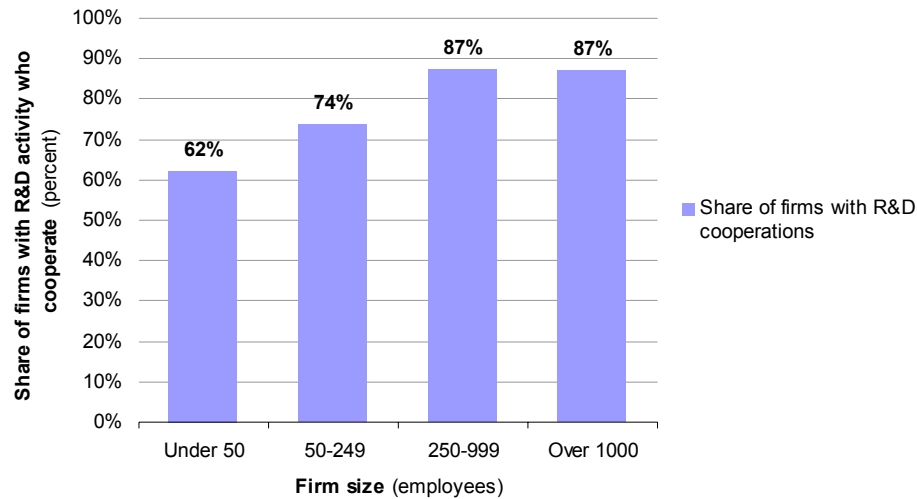
Table 2.4 Recent change in jobs and employment in Storstrøms Amt 1998-2002

	1998	2002	percentage of the persons employed - Storstrøm	percentage of the persons employed - Danmark	localization	employment trend 98-02 % p.a.
Storstrøm county						
Agriculture, horticulture and forestry	6609	6067	5,6%	3,4%	1,65	-2,1%
Fishing	307	304	0,3%	0,2%	1,44	-0,2%
Mining and quarrying	236	202	0,2%	0,1%	1,59	-3,8%
Mfr. of food, beverages and tobacco	3736	3565	3,3%	2,9%	1,12	-1,2%
Mfr. of textiles and leather	410	254	0,2%	0,5%	0,45	-11,3%
Mfr. of wood products, printing and publ.	3115	2619	2,4%	2,4%	0,99	-4,2%
Mfr. of chemicals and plastic products	1.225	1.200	1,1%	1,8%	0,60	-0,5%
Mfr. of other non-metallic mineral products	1.370	1.170	1,1%	0,7%	1,64	-3,9%
Mfr. of basic metals and fabr. metal prod.	5.987	6.294	5,8%	6,9%	0,84	1,3%
Mfr. of furniture; manufacturing n.e.c.	862	695	0,6%	1,1%	0,57	-5,2%
Electricity, gas and water supply	538	490	0,5%	0,5%	0,87	-2,3%
Construction	7.526	8.240	7,6%	6,2%	1,21	2,3%
Sale and repair of motor vehicles sale of auto. fuel	3.077	2.726	2,5%	2,2%	1,14	-3,0%
Wholesale except of motor vehicles	3.605	3.563	3,3%	5,8%	0,56	-0,3%
Re. trade and repair work exc. of m. vehicles	8.611	9.097	8,4%	7,0%	1,20	1,4%
Hotels and restaurants	3.573	2.961	2,7%	2,8%	0,96	-4,6%
Transport	4.521	3.992	3,7%	4,3%	0,86	-3,1%
Post and telecommunications	1.527	1.292	1,2%	2,0%	0,60	-4,1%
Finance and insurance	2.010	1.880	1,7%	2,7%	0,63	-1,7%
Letting and sale of real estate	1.337	1.470	1,4%	1,5%	0,89	2,4%
Business activities	4.775	5.683	5,2%	9,3%	0,56	4,4%
Public administration	7.413	6.535	6,0%	5,6%	1,07	-3,1%
Education	8.342	8.428	7,7%	7,3%	1,07	0,3%
Human health activities	6.298	6.707	6,2%	5,4%	1,14	1,6%
Social institutions etc.	15.282	16.825	15,5%	11,7%	1,32	2,4%
Associations, culture and refuse disposal	5.293	5.842	5,4%	5,1%	1,06	2,5%
Activity not stated	722	710	0,7%	0,5%	1,24	-0,4%
Sum of all industrial sectors	108.307	108.811	100,0%	100,0%	1,00	0,1%

Source: Copenhagen Economics

Note: The column 'percentage persons employed – Storstrøm' shows the change in number of jobs in the region according to the place of work, of which some jobs are held by people not residing in the region. The second column shows the change in number of employees having their place of residence in the region, but who possible work outside the region.

An important thing to notice about the businesses of Storstrøms Amt is the relatively low share of large companies. This point is made clear in appendix 1 and as we will argue later on, this may be important when evaluating the chances of using the opportunities that a fixed link will supply. The low share of large size firms might be a barrier to innovation, since it is known that smaller firms cooperate less than large firms, and that research and development (R&D) cooperation is crucial for the economic impact of R&D activities, cf. Figure 2.9.

Figure 2.9 Share of R&D active firms who cooperate for R&D

Source: The Danish Centre for Studies in Research and Research Policy, Danish Research Statistics 2003.

2.5. Competitiveness of the region

We now turn to the question of how productivity of the regional economy can be improved. A recent analysis of the economic growth in Danish regions⁶ pointed out four new growth drivers as the key to understanding why some Danish regions have grown faster than others, particularly since the mid-nineties (from 1997 and onwards). The four growth drivers are:

- Human resources
- Entrepreneurship
- Innovation and
- Information- and communication technology (ICT)

The growth drivers are derived from a large scale OECD growth study⁷ that showed that these four factors could explain a significant part of the growth differences between OECD-countries since 1995.

In summary, our model of regional competitiveness can explain 70 percent of the productivity growth in the regions from 1997-2002. Based on 45 different indicators for 21 Danish regions covering the whole country an index of the overall competitiveness of each region was assessed.

The overall regional competitiveness index thus shows the aggregated performance of the regions on the four growth drivers. Data for Storstrøms Amt is combined with data for its neighbouring county (West Zealand) in the following analysis. The two regions of Storstrøm and West Zealand share many common characteristics and do already have close cooperation on economic development. Moreover, Storstrøms Amt and West Zealand are to be merged (together with Roskilde Amt) in the coming administrative structure.

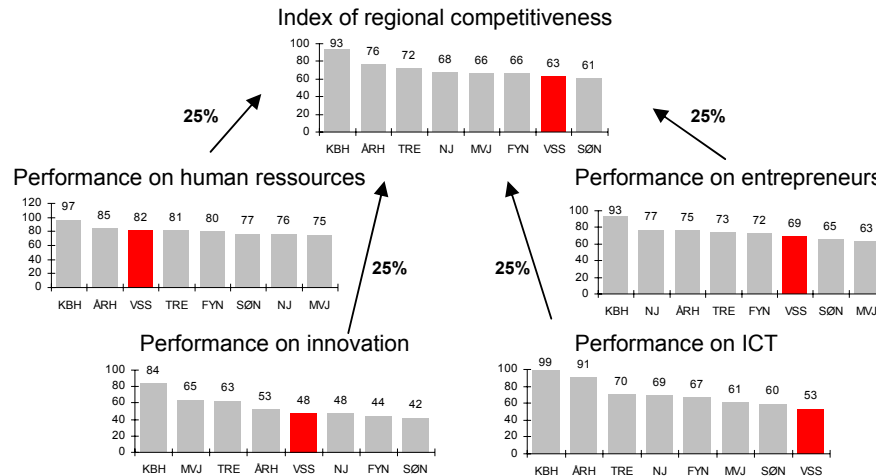
Comparing the standing of Storstrøms Amt (here labelled "VSS") with seven other Danish regions shows that the region is ranged as number seven out of eight on the overall competitiveness, i.e. on the factors that drive productivity growth.

⁶ Copenhagen Economics and Inside Consulting (2004), *Regionernes Konkurrenceevne*, prepared for the Ministry of Interior and Health, Copenhagen, January 2004 [*RegionalCompetitiveness*].

⁷ OECD (2001), *The New Economy – Beyond the Hype. The OECD Growth Study*, OECD – Paris.

The overall index is an equal weight of the four sub-indices for human resources, entrepreneurship, innovation and ICT. The sub-indices (and their detailed components) reveal some interesting insight about the strengths and weaknesses of the region.

Figure 2.9 Index of regional competitiveness



Source: Copenhagen Economics & Inside Consulting, for the Danish Ministry of Interior and Health

The performance on *human resources* is measured as a combination of higher education and the total working experience of the employees in the region (measured by the number of years on the labour market). Storstrøms Amt is in a good position on working experience and in a weak spot measured on formal education. This is a result of a relatively old population (and thereby longer working experience) and an industry structure with a relatively large demand for low skilled or unskilled workers.

The performance on *entrepreneurship* places Storstrøms Amt as number 6 out of 8 regions. This indicates a weakness for the region in renewing and changing the industry structure, since it is through the emergence of new firms and entrepreneurs that the dynamics of the region are initiated. The details show that Storstrøms Amt is not performing so badly on “birth rate of new firms”, but the growth of the new firms is much slower than for new firms in other regions. This indicates a weakness of a lack of innovative entrepreneurs that form the new business on an entirely new idea. Such firms have much higher propensity for growth than new firms on a mature and well known market.

The performance on *innovation* also consists of some more detailed indicators. The ranking as number 5 out of 8 regions is a result of a good performance measured on share for regional firms with some degree of innovation. This indicator, however count small firms just as much as large firms. Therefore another indicator – the private sector research and development (R&D) spending – is needed to fulfil the picture on innovation. Measured on the relative size of the R&D budgets, Storstrøms Amt is last of the 8 regions. Together this indicates both a weakness (in total little money is spent on innovation) and a potential (many small firms are engaged in some form of innovation).

Finally, the region ranks last on the use of the new ICT-technologies. The ranking is both because of a lower general use of ICT in the firms (share of employees with PC and e-mail, use of e-business, ordering etc) and because of fewer specialised ICT-users in the region (e.g. IT-engineers).

2.6. Summary of strengths and weaknesses

Based on our analyses in sections 2.1 to 2.5 and on the workshop in Nykøbing Falster in December 2004 we have summarised the consultant's assessment of the most important strengths and weaknesses. These are listed below.

Strengths	Weaknesses
<ul style="list-style-type: none"> • Catching up on job creation • Construction sector • Social sector and institutions • Food production and agriculture • Specialisation in industries that are less exposed to outsourcing • Tourism • Stable and experienced work force • Spirit of entrepreneurship among the population • A large share of small firms are engaged in some form of innovation • Availability of comparatively cheap land for business activities 	<ul style="list-style-type: none"> • Low productivity growth • Low labour market participation • Some structural problems concerning industry mix • Low entrepreneurship • Decreasing workplaces in big sectors (food production and agriculture) • Very low use of ICT • Slow growth in knowledge intensive services • Large share of public sector employment • Problems with transforming the aspirations of the entrepreneurs <i>in spe</i> into reality • Relatively low level of formal education, candidates with a higher education • Relatively poor position in innovation spending • Relatively low share of large companies

Chapter 3 Strengths and weaknesses of Kreis Ostholstein

In this chapter, we analyse the regional economy of Kreis Ostholstein. The following analysis includes aspects of socio-economy, demographical development and labour markets. Chapter 3 concludes with a summary of strengths and weaknesses.

Kreis Ostholstein, in the eastern centre of the Federal State of Schleswig-Holstein, is a region covering 1,391 km² with about 204,000 inhabitants. The region's population density of 146 inhabitants per km² is significantly below the national average (Germany: 231 inhabitants per km²) and the average of the Federal State of Schleswig-Holstein (178 inhabitants per km²). In terms of the classification of German regions managed by the Federal Office of Building and Regional Planning⁸ the Kreis Ostholstein belongs to the category of rural areas.

3.1. A brief socio-economic portrait of Kreis Ostholstein

The socio-economic analysis of Kreis Ostholstein shows a picture of a region with:

- Fast population growth in 1990s and a population that is predicted to decline slowly until 2020
- A moderately age gap to the national average that is predicted to increase until 2020
- An unemployment level – currently nearly 12% – that is slightly but constantly higher than the German nation-wide unemployment rate
- A population which is in particular finding jobs outside the region. Nearly 60% of all employed commute out
- A less well educated work force, also a tendency of a widening educational gap compared to the national development.
- A net-inflow of new citizens since 1995, which is slightly higher than in Schleswig-Holstein.
- More agriculture and more services than the national average – a pattern that did not change over the last ten years. The workforce in industry has decreased since 1998.
- More tourism than other regions – the number of tourists per year is more than six times higher than the national average compared to its size
- High entrepreneurial activities in Kreis Ostholstein demonstrate new economic growth associated with the ability and activity of creating new jobs in service sectors.

⁸ Bundesamt für Bauwesen und Raumordnung

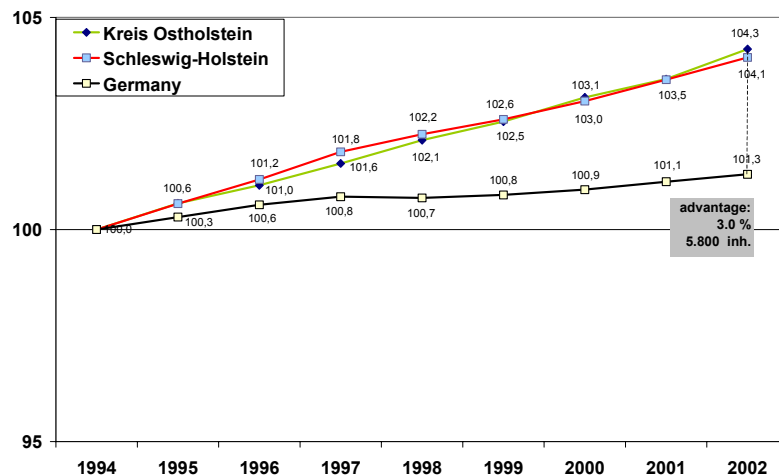
The full socio-economic analysis is presented in appendix 2. We now turn to more in-depth analyses of the region's fundamental growth problems.

3.2. State of the economy

Geographically, Kreis Ostholstein is centrally located between three important large cities of northern Germany. These cities are Lübeck, about 40 km (distance from Eutin - the administrative centre of the region) in the south, Kiel (capital of Schleswig-Holstein) about 45 km in the northwest and the metropolis of Hamburg about 100 km in the southwest.

During the past years, the demographic development of Kreis Ostholstein was very positive. Between 1994 and 2002 about 8,300 new inhabitants have moved to the region. During this period the population development peaked at a 4.3 percent growth rate and the region now outperforms Schleswig-Holstein (4.1 percent) and the general German population development (1.3 percent). However, the growing number of inhabitants was not caused by a high birth rate or by an excess of births over deaths, but rather it was due to a high immigration of elderly people. Other indicators, like the share of population by age and the dynamics of the age structure, show the trend of obsolescence in the region. Kreis Ostholstein and especially its coastal areas with high recreation capacities are becoming locations for retirement homes. The high share of elderly people in the region (share of people over 65 years 2002: 20.4 per cent, Germany: 17.5 per cent) indicates this development. Younger people aged between 18 and 30, who mostly have occupational and educational reasons for changing their place of residence, have left the region on balance during recent years.

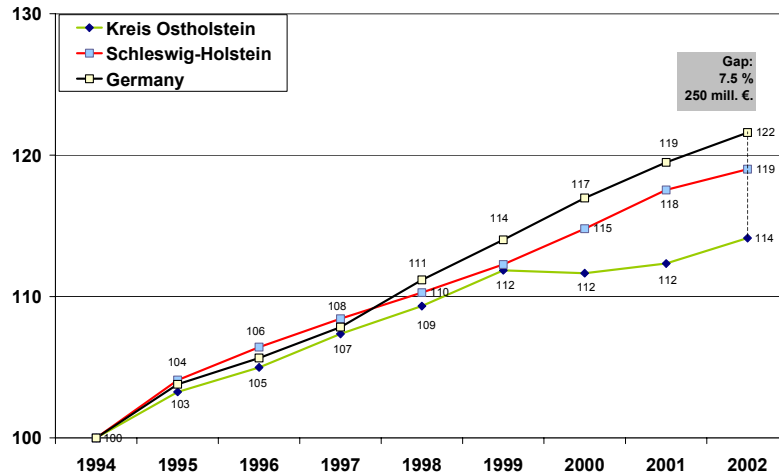
Figure 3.1 Development of population 1994-2002 in the Kreis Ostholstein (Index 100 = 1994)



Source: Landesarbeitsamt Nord, Prognos AG

Kreis Ostholstein reveals a gap of economic growth. Until 1999 Kreis Ostholstein followed the average GDP development of Germany and Schleswig-Holstein. But in 2000 a decoupling from national GDP development appeared as a consequence of troop withdrawals, decreasing economic activity in the building sector and a stagnating tourism sector. Between 1994 and 2002 Kreis Ostholstein has increased the GDP gap to the national average by 7.5 percentage points, and GDP is now one third lower (-31%) than the national reference value.

Figure 3.2 Development of the GDP 1994-2002 in Kreis Ostholstein (Index 100 = 1994)

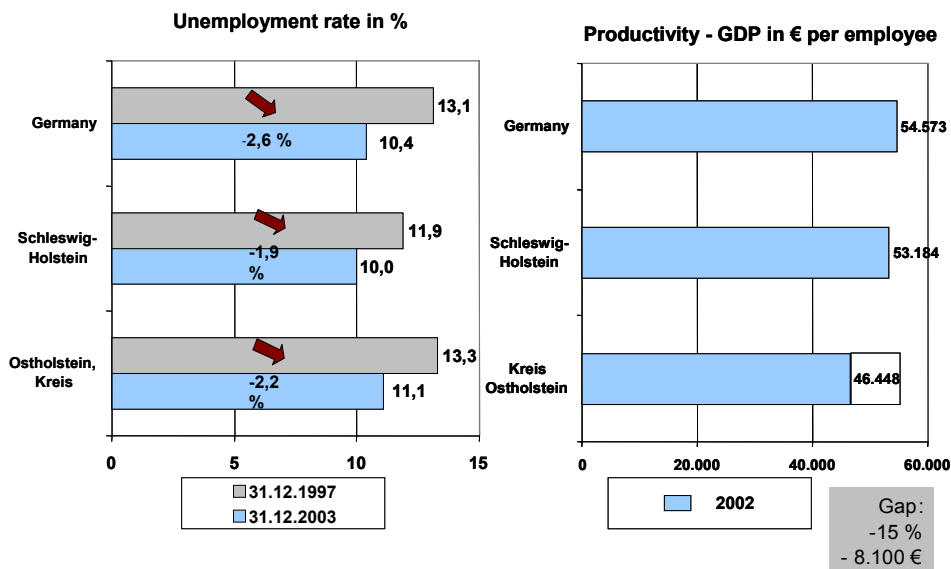


Source: Landesarbeitsamt Nord, Prognos AG

Over the years the employment figure stayed more or less on the same level. About 82,000 people representing about 41 % of population are employed in Kreis Ostholstein. Between 1994 and 1999 employment was increased step-by-step to a level of 84,000 jobs; since 1999 due to the economic slowdown the number of jobs was reduced to 82,000 jobs. In comparison to Germany and Schleswig-Holstein the region did not succeed in creating new additional jobs and improving the opportunities for employment.

The unemployment rate of Kreis Ostholstein (2003: 11.1 %), which is above the national average, was reduced by about 2.2 percentage points from 1997 to 2003. The reduction has been caused by a certain general stimulation of labour force, vocational retraining and early retirements during the last years (cf. Figure 3.6).

Figure 3.3 Level and development of unemployment and productivity per employee



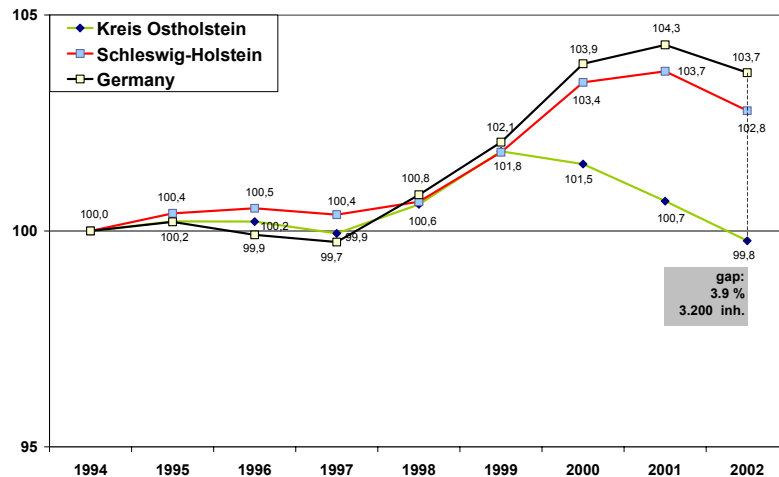
Source: Landesarbeitsamt Nord, Prognos AG

The productivity⁹ in Kreis Ostholstein is about 15 percentage-points or more than 8,100 € per employee lower than the national reference value. In 2002, in Ostholstein the average GDP per employee reached a value of 46,400 €, compared to 54,600 € in Germany.

The comparison with Germany and Schleswig-Holstein indicates the high specialisation of regional economy in service industries. About 78 per cent of total labour force in Kreis Ostholstein (including part-time jobs and self-employed) are employed in service sectors (Germany: 69 per cent). Beside the service sector the employment share in the farming and fishery sector in Kreis Ostholstein is over-represented compared to the national average. Nearly twice as many people are employed in the primary sector of Ostholstein (4.3 per cent) than in Germany (2.4 per cent). In contrast to Germany, Kreis Ostholstein has a significant gap in industrial employment. About 18 per cent of all employment in the region represents industrial jobs, compared to 28 % in Germany. The increase of jobs in the service sector (plus 1,000 employees between 1999 and 2003) could not replace the simultaneous decrease in the manufacturing sector (-1,500 employees) and the agriculture and fishery sector (-200 employees).

The high specialisation in the service sector and low specialisation in the manufacturing sectors, accompanied by other concomitants (like lack of large enterprises, lower professional qualification standard), generates disadvantages in other dimensions. The technological level and innovation rate of processes and products is relatively low. Important innovation drivers that could generate high value added and new jobs by processing new products, like high-tech firms or research institutions, are hardly represented in the region. The low share of employees in R&D at 0.1 per cent (Germany 1.1 per cent) underlines this innovation gap. This also hampers the transformation of more traditional industries into high-value industries.

Figure 3.4 Development of labour force 1994-2002 in Kreis Ostholstein (Index 100 = 1994)



Source: Landesarbeitsamt Nord, Prognos AG

Tourism, the transport sector, as well as health care and social work are major economic activities in Kreis Ostholstein. About 20,000 employees or nearly 40 % of total labour force are engaged in these core sectors. Additionally, during the period 1999-2003 altogether 2,000 new jobs were created in these branches.¹⁰

⁹ Productivity is expressed as GDP per employee.

¹⁰ According to statistics of the "Bundesagentur für Arbeit"

Other sectors, like construction, public administration and business services also make a significant contribution to the region's economic output, but in terms of workforce size they have a lower regional impact in comparison with Germany. These three sectors, which employ about 10,000, or 20 % of regional labour force, have lost about 1,800 jobs during the past years.

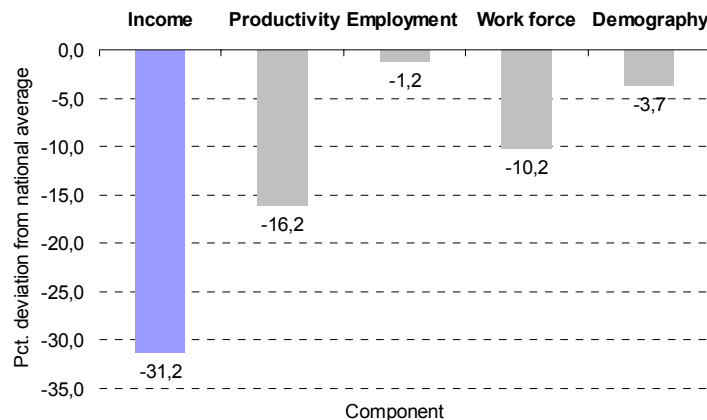
Important growth industries like business services, data processing, and manufacture of high-tech-products are under-represented in the region. These industries are necessary for the future to improve the economic development of Kreis Ostholstein, because these sectors are considered to offer the most growth potential in future. The regional economy of Kreis Ostholstein is handicapped by its pattern of specialisation, which indicates total future growth prospects (for employment and GDP) below the national average.

3.3. Decomposition analysis

As stated in the previous section Kreis Ostholstein has an income gap of around 31 percent compared to the national per capita income. We can break down this income gap into four components: productivity, employment, work force and demography. The four components add up to the total deviation from the national average.

The first component reveals that, out of the 31 percent income gap, 16 percentage-points (or just over half) are due to the fact that those employed in the region have lower overall productivity. The second component "employment" tells us that unemployment is not a major contributor to the income gap and it explains only 1.2 percentage points of the deviation from national income level¹¹. The third component is the labour market participation (or the size of the work force compared to all persons between the age of 16 and 66 years old). Clearly Kreis Ostholstein is challenged by low labour market participation. In other words, a large share of the population aged between 16 and 66 are outside the labour market, and this is the second most important component in explaining the gap in income for the region. The low labour market participation is responsible for 10.2 percentage points of the 31 percent gap. Finally, demography also adds to the problem with 3.7 out of the 31 percentage points.

Figure 3.5 Break-down (decomposition) of the income level deviation from national average



Source: Copenhagen Economics

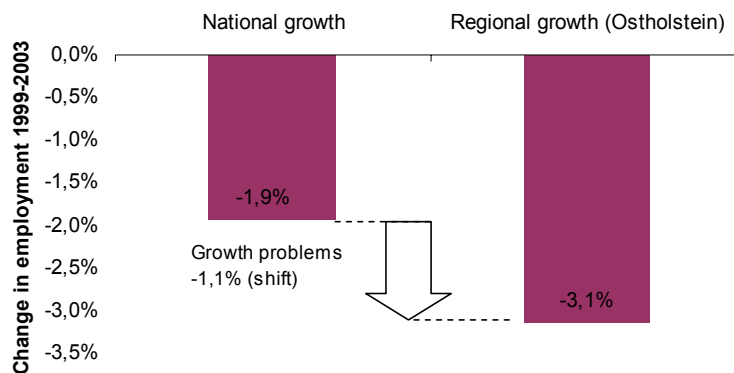
¹¹ According to appendix 2 11.1 percent were unemployed in Kreis Ostholstein, whereas 10.4 percent was the German national unemployment rate for 2003.

We therefore suggest focussing the analysis of the possible effects of a Fehmarn Belt fixed link on the two most important elements: the low productivity and the low labour market participation. This result is similar to the conclusion reached for Storstrøms Amt.

3.4. Job growth and industry structure (shift-share analysis)

The shift-share-analysis of Kreis Ostholstein shows that the region had a negative employment development in the period 1999-2003. On the federal German level there was a reduction in employment of 1.9 percent. The development in Kreis Ostholstein was even worse, with a reduction in employment of 3.1 percent.

Figure 3.6 Explaining the changes in the number of jobs in Kreis Ostholstein, 1999-2003



Source: Copenhagen Economics

Furthermore, the analysis shows no structural effect on employment change in Kreis Ostholstein in the period from 1999 to 2003. This means that even if Kreis Ostholstein had had an average national industry structure employment would still have declined by 3.1 percent. Therefore we can conclude that the large decline in the number of jobs in Kreis Ostholstein can not be explained by an unfortunate industry structure.

This does not mean that there is no potential for Kreis Ostholstein to change the industry structure. Kreis Ostholstein is overrepresented both in industries with large job decline (construction and retail) and in industries with positive job numbers (health care and the hotel industry). Therefore a structural shift towards more health care and tourism could improve the employment situation in the region.

Turning to the comparison of employment changes per industry in Kreis Ostholstein with Germany also shows a mixed picture. Some industries declined much faster in Ostholstein than in Germany (e.g. business services which declined by 8.1 percent in Ostholstein, while national business services went up by an impressive 14.3 percent from 1999 to 2003). However, industries performing better in Kreis Ostholstein than expected compared with national rates can also be identified.

The first part of the following table documents that e.g. the industrial sectors of transport (land transport, water transport, activities of other transport agencies and supporting and auxiliary transport activities) created approximately 500 jobs more than expected from the development in Germany. In health and social work approximately 200 additional jobs have emerged.

Nevertheless, the lower part of the table documents that the development especially within the future industrial sector "other business activities" remained far behind the German

development. More than 600 jobs could have been created with the same development dynamics. The public sector has developed below average as well.

Table 3.1 Actual and hypothetical employment 2003, sector by sector

Industry	Actual employment 2003	Hypothetical employment if national growth rate for the industry applies	Deviation
Sectors with increase above national average (more than +100 jobs)			
Retail trade	5.277	5.151	126
Land transport; transport via pipelines	955	828	127
Water transport	833	686	147
Health and social work	10.394	10.218	176
Supporting of auxiliary transport activities; activities of travel agencies	1.037	804	233
Sectors with decrease more than national average (more than -100 jobs)			
Other business services	2.474	3.088	-614
Public administration and defence; compulsory social security	3.523	3.730	-207
Education	591	776	-185
Total	50.673	51.244	-571

Source: Landesarbeitsamt Nord, Prognos AG

3.5. Industrial specialisation (bubble charts)

The bubble-chart-analysis identifies the industrial strongholds in Kreis Ostholstein in terms of the employment trend within the industrial sectors and the regions specialisation in that industry (the share proportional to the national share of that industry).

The vertical axis of the illustration represents the localisation¹² of an industrial sector proportional to the country. The horizontal axis demonstrates the employment trend within the last 5 years.

The colour "blue" represents the industrial sectors which anticipate increased employment by the year 2020. The red colour demonstrates the industrial sectors where a negative employment trend is expected to take place until 2020.

The central conclusion of the bubble-chart-analysis for Kreis Ostholstein supports the potential of the district in the maritime and tourism sectors, which show positive prospects. The dominance of "health care, veterinarian and social welfare" also becomes tangibly clear (20% of employees). However, the weakness in manufacturing sectors, mechanical engineering and other business activities is pointed out as well.

In the following bubble-chart-illustration for Kreis Ostholstein a total of 22 industrial sectors are shown, which together represent 91% of all employees paying social insurance contributions¹³.

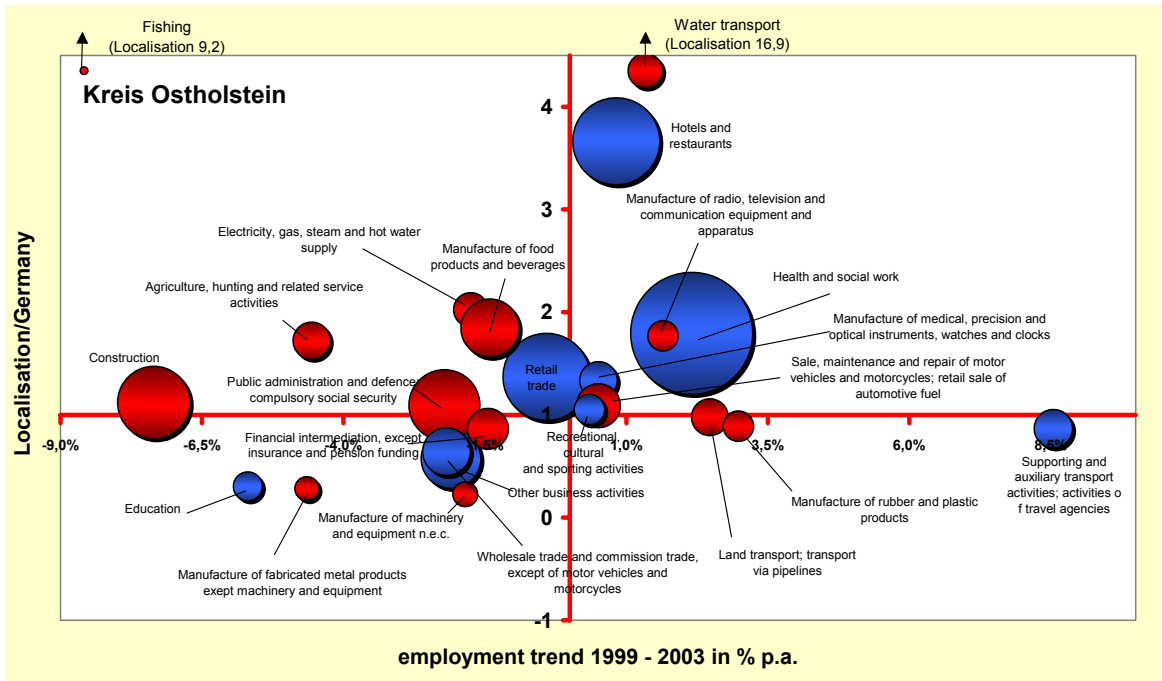
¹² The so-called localisation quotient (LQ) expresses the proportion of regional sector-specific employment share in comparison to the national employment share of each sector. Example "LQ = 1.5": This means if a sector represents a ratio of 1.5 it indicates that its regional importance is 1.5 times higher than the national average.

¹³ The source of employees paying social insurance contribution requests some attention, because self-employed persons are not included in this statistic. That means the data - especially in the industrial sectors of the first sector - are of little significance, because there are not a lot of employees in "agriculture, hunting and related service activities" and "fishing, fish farming and related service activities". However, the source of employees paying social insurance contribution is the only available source which is not based on approximation but defined data.

In 10 industrial sectors the number of employees in the year 2003 was higher than it was in 1999. Overall, the region lost 1,647 jobs, especially in construction industry (-1,313 employees). In contrast, health care and social welfare is the industrial sector with the greatest absolute increase (+849 employees).

The vertical level of the illustration points out the potential of the industrial sectors proportional to Germany. Due to geographical conditions, “water transport” and “fishing” dominate completely. However, “hotels and restaurants”, likewise traditional coastal industries are especially relevant. Still above the national average are the following industrial sectors: “retail trade”, “health, veterinarian and social work”, “manufacture of medical, precision and optical instruments”, „electricity, gas, steam and hot water supply”, “agriculture, hunting and related service activity” and “manufacture of radio, television and communication equipment and apparatus”. Important future industrial sectors like “other business activities”, “financial services, except insurance and pension funding” and “education” are not represented properly within the district.

Figure 3.7 Bubble Chart Kreis Ostholstein, 1999-2003



Source: Landesarbeitsamt Nord, Prognos AG

Additionally, the illustration shows the expected employment trend. The data of the “Prognos-Deutschland report” indicate that an increase of employment within the two industrial sectors with a strong localisation (hotels and health and social work) can be anticipated. Nevertheless, the positive development within the health care sector and social work will not proceed in a comparably positive way as in recent years. The unfavourable development in the services sector (other business activities) is also worrying concerning future perspectives; it is not represented properly and has shown a negative development.

The following table shows the basic principles of the preceding bubble chart.

Table 3.2 Data of employment trend and localisation of industry sectors in Kreis Ostholstein

Industrial sector	1999	2003	percentage of the persons employed - Kreis Ostholstein	percentage of the persons employed - Germany	Localisation	employment trend 99 03 in % p.a.	employment trend 02 20 in % p.a.
Other business activities	2.693	2.474	4,9%	8,5%	0,573	-2,1%	1,4%
Financial intermediation, except insurance and pension funding	1.236	1.166	2,3%	2,7%	0,865	-1,4%	-0,5%
Public administration and defence; compulsory social security	3.853	3.523	7,0%	6,4%	1,094	-2,2%	-0,5%
Water transport	790	833	1,6%	0,1%	4,350	1,3%	-0,4%
Land transport; transport via pipelines	866	955	1,9%	1,9%	0,977	2,5%	-0,3%
Hotels and restaurants	5.107	5.277	10,4%	2,8%	3,664	0,8%	0,5%
Retail trade, except of motor vehicles & -cycles; repair of personal & household goods	5.365	5.277	10,4%	7,6%	1,371	-0,4%	0,1%
Supporting and auxiliary transport activities; activities of travel agencies	747	1.037	2,0%	2,4%	0,867	8,5%	0,9%
Health and social work	9.545	10.394	20,5%	11,4%	1,793	2,2%	0,9%
Wholesale trade and commission trade, except of motor vehicles and motorcycles	1.743	1.596	3,1%	4,9%	0,642	-2,2%	0,0%
Manufacture of medical, precision and optical instruments, watches and clocks	978	998	2,0%	1,5%	1,335	0,5%	-0,5%
Sale, maintenance & repair of motor vehicles and -cycles; retail sale of automotive fuel	1.325	1.352	2,7%	2,4%	1,090	0,5%	-0,3%
Electricity, gas, steam and hot water supply	880	820	1,6%	0,8%	2,025	-1,7%	-1,5%
Construction	4.990	3.677	7,3%	6,5%	1,120	-7,3%	-0,7%
Agriculture, hunting and related service activities	1.168	969	1,9%	1,1%	1,722	-4,6%	-2,6%
Manufacture of food products and beverages	2.520	2.381	4,7%	2,5%	1,846	-1,4%	-1,2%
Manufacture of rubber and plastic products	578	650	1,3%	1,4%	0,891	3,0%	-0,4%
Manufacture of fabricated metal products except machinery and equipment	485	401	0,8%	2,8%	0,282	-4,6%	-0,4%
Manufacture of machinery and equipment n.e.c.	473	439	0,9%	3,8%	0,227	-1,8%	-0,5%
Manufacture of radio, television and communication equipment and apparatus	607	648	1,3%	0,7%	1,770	1,6%	-0,4%
Education	747	591	1,2%	3,8%	0,304	-5,7%	0,2%
Recreational, cultural and sporting activities	642	651	1,3%	1,2%	1,053	0,3%	0,6%
Sum of the selected industrial sectors	47.338	46.109	91,0%	77,4%	1,176	-0,7%	-0,2%
Sum of all industrial sectors	52.320	50.673	100,0%	100,0%	1,000	-0,8%	0,0%

Source: Landesarbeitsamt Nord, Prognos AG

Note: The number of employees covered by the social security from 1999-2003 is displayed for an assortment of industrial sectors. The column "percentage of the persons employed – Kreis Ostholstein" represents the share which a specific industrial sector has in the total number of employees covered by the social security. These data are presented for the district and Federal Germany and add up to the "Localisation" (see footnote 5). The employment trend from 1999-2003 refers to Kreis Ostholstein, whereas the prognosis for 2002-2020 is taken from the "Prognos Germany Report 2002-2020" and points out the sector development throughout the country. The two aggregate lines show first the overall result for the selected industrial sectors and second the result for all industrial sectors.

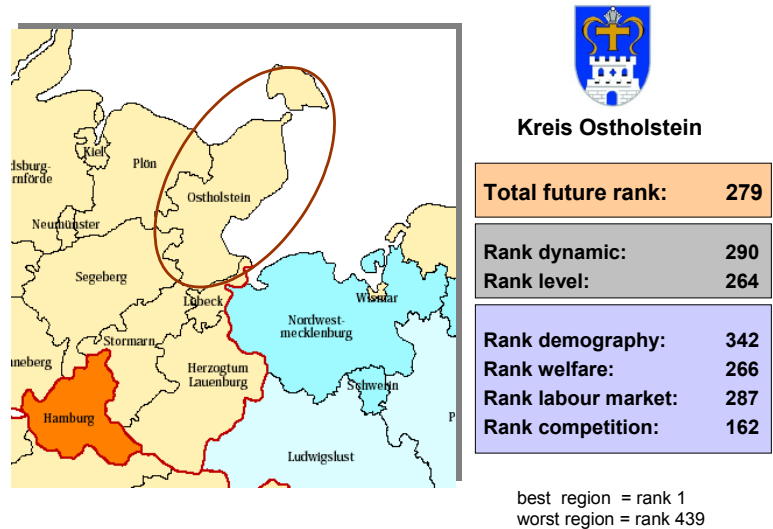
3.6. Indicators of the future in the region

In 2004 Prognos AG organised a regional future survey called "Prognos Zukunftsatlas 2004". Evaluation and benchmarking is the core of the survey, which measures the future index of all 439 German regions based on the set of 29 socio- and macro-economic indicators. The indicators are grouped in the topics: labour market, competitiveness and innovation, welfare and demography. One main result of the study is the awareness that the best future belongs to modern, innovative regions with high specialisation, which are found especially in southern Germany around the metropolis of Munich. Especially larger cities, university towns and their urban sprawl with competitive clusters are well prepared for structural changes in future.

The "Zukunftsatlas" helps to position Kreis Ostholstein's readiness for the future in a German context. Among the 439 regions Kreis Ostholstein reaches the position of number 279 and belongs to the category of regions with an equalised mixture of opportunities and threats. The detailed indicators of the "Zukunftsatlas" reveal a picture of a region with contradictions. On the one hand Kreis Ostholstein achieves high scores regarding the service society (rank 49), the share of employees in branches with high jobs growth (rank 23) and level of entrepreneurship

(134). On the other hand the region performs badly on the industrial investment rate (397), R&D personnel (420), highly skilled workers (382) and the share of young adults (427). Last but not least the availability of sufficient number of young adults is an important precondition for future prospects of regions. Young adults settle down with their families, get children and support the regional labour market by offering a pool of sufficient manpower.

Figure 3.8 Extract of the “Prognos Zukunftsatlas 2004” for the Kreis Ostholstein



Source: Prognos AG

3.7. Summary of strengths and weaknesses

Some socio-economic studies already have been carried out¹⁴. These socio-economic studies and other available information (national and international databases, Internet searches, scientific papers, etc.) have been used for the current report. The results were presented by Prognos at a workshop in Oldenburg in Holstein 13 January 2005. The regional representatives confirmed and ratified the strengths and the weaknesses elaborated by Prognos. There were no essential supplements as a result of the workshop.

The following table summarises these most important strengths and weaknesses.

Strengths	Weaknesses
<ul style="list-style-type: none"> • Multifaceted industry structure • Branches with small and medium sized-enterprises • Entrepreneurial spirit, start-ups • Established tourism region with a broad offer of accommodation, good catering and multifaceted recreational facilities • High turnover and employment accomplished in tourism / hotels and restaurants; • Innovative, future-orientated industrial sectors: health care and social work, manufacture of medical, precision and optical instruments, watches and clocks • Strong position in the industrial sectors of transport, logistics, water transport, • Offer of industrial estates for new settlements and enlargements available • Municipal ports are niched, focusing on water-sports tourism; the Puttgarden "port centre" has been enlarged to a successful shopping centre • Unused port handling capacity so that the ports have capacity to cope with the future development • Population development proceeds more positively than in Germany (0.3-0.4%); the high proportion of settling seniors has a high-spending capacity • High living standard and high quality of recreation; low level of prices • Partially intact traditional villages with solid social structure • Outstanding area of scenic nature potential; positive image factor: nature and environment • Geographical position and transport connection: relative distance to metropolis region Hamburg (North-South decline); good or partially average transport infrastructure 	<ul style="list-style-type: none"> • Weak economic performance and below-average development of GDP; • Low industrial level with weak industrial investment activities and low export rates; low proportion of high-tech companies • Gap of innovation and low rate of other business-orientated services • High dependency on tourism: stagnating due to declining demand; relatively low utilisation; seasonal demand • Partially out-dated infrastructure of leisure infrastructure; specialisation in segments of cure/rehabilitation; offering gaps within business trips/ meetings • Comparatively below-average advertising and marketing activity and professionalism¹⁵; organisational structures hamper co-operation • Small population density; demographic and economic developments weaken rural villages; society of seniors endangers the usage rate of social infrastructure like nursery schools, schools, hospitals ... • Job market and education: problems recruiting skilled labour (specialists, superior qualified labour) • Improvable transport connection with state capital Kiel (east-west)

¹⁴ Kocks Consult GmbH (1998): Untersuchung der sozioökonomischen und regionalen Auswirkungen einer festen Verbindung über den Fehmarn Belt; Wenzel & Partner (1999): Untersuchung touristischer Aspekte einer festen Fehmarnbeltquerung; Convent GmbH (2002): Regionales Entwicklungskonzept Kreis Ostholstein; etc.

¹⁵ Tourismusbeirat Region Plön / Ostholstein in Zusammenarbeit mit dem Institut für Tourismus- und Bäderforschung in Nordeuropa GmbH (N.I.T); 1998; Tourismusentwicklungskonzept für die Region Plön und Ostholstein

Strengths

One main strength of Kreis Ostholstein can definitely be seen in the diversified industry structure and medium-sized businesses, where a high entrepreneurial activity can be observed within the past years. The entrepreneurial spirit, which can be derived from this, appears in the development of some dynamic and future-orientated industrial sectors. Especially the health care sector (ranging from health resorts to the production of special technologies, manufacture of medical, precision and optical instruments, watches and clocks) has developed very successfully.

The transport industry has also been successful. The traditional water transport industry of the Baltic Sea area demonstrates its strength in an above-average development. The development of services for transportation (logistics and auxiliary transport activities), which achieve the highest rates of employment growth of Kreis Ostholstein, should be pointed out.

The regions outstanding and unspoiled nature is another prominent strength. This strength is valued as very favourably for the tourism industry, and hotels and restaurants represent a major share of sales and employment in the region. Especially the trends within the last two years show that there is a large potential in the development of the established holiday region.

This nature is also used by agriculture, cultivating vegetables, horticultural specialities and nursery products, forestry and fishing. Quite apart from this anthropogenic utilisation, the flora and fauna of the region and the bordering Baltic Sea have their own value as well.

The transport and industry infrastructure of the Kreis Ostholstein have to be mentioned likewise affirmatively. The ports with their own ways of development, the extension of the motorway A1 and the different attractive industrial areas - they all represent a region with sufficient preconditions for sustainability and the region offer good general conditions for prosperity. The current extension of the A1 provides a basis for the region to remain integrated in the European transport network. The transport corridor "Vogelfluglinie" symbolizes the connection between Germany and the eastern part of Denmark. It is the shortest connection between Central Europe and Scandinavia. The ports in the county have shifted their role from purely freight traffic to also including tourism, because they offer a special attractiveness to the cities. Economically sustainable structures can develop in this symbiosis.

Also with respect to the social development, the positive population trend indicates that Kreis Ostholstein is an attractive place for living where it is worth spending one's remaining years. Here, too, nature and landscape are two of the greatest assets.

The majority of the settling population are seniors, who tend to have high purchasing power. Besides the high value of living and recreation, seniors use the supply of health care and social work (health, fostering, residences). Thus, as consumers the seniors are of great importance in the region. Besides this important strength, are the partially intact traditional villages with robust social structures which form the image of the region.

Weaknesses

One of the central weaknesses of the region is certainly the below-average economic development. Within the area of classical production as well as in seminal areas of services the county is weakly represented. The qualification level of employees and also the education/training is not ideal. The problem with recruiting specific qualified skilled labour (specialists, superior qualified labour) is troubling the region, because services of higher value cannot be rendered without them.

Due to the small proportion of industry and the low number of production-orientated companies these groups do not use their full employment potential. Furthermore the region has a rather small export share. This weakness in the production and the trade of goods also appears as a low tendency to co-operate with Scandinavian neighbours, and trade from Denmark to Ostholstein is much stronger. Therefore, the lack of co-operation and utilisation of networks with neighbouring countries, but also cooperation between local industries is a weakness of the region.

Another shortcoming shown in the analyses is the small proportion of other business activities which are rendered for production-orientated but also high-tech-companies. An extensive deficit exists in this future market, and the region is crucially challenged by this lack of future growth sectors.

The transport connection with the European railway network is not ideal. On the so-called "Vogelfluglinie" there are stops for passenger trains in Lübeck, Oldenburg and Puttgarden. There has not been any railway freight transport since the opening of the Great Belt fixed link in 1998. The State government plans to improve the connections between the regional locations. The most important improvements waiting are the electrification of the route between Hamburg and Lübeck as well as an improvement for a higher speed on the route between Lübeck and Kiel.

The dependency on tourism can become a weakness for the region. A strong focus on tourism leads to a great dependency on the travel industry and its trends, as well as resulting in a high seasonality of employment. Within the tourism industry the overall marketing of the region can be assessed as rather weak, possibilities of co-operation for increased efficiency are used only inadequately and there are some gaps in the portfolio of tourism activities. Especially the modernisation and extension of the offer towards business tourism is pronounced only weakly.

The structure of the population in Ostholstein is shifted by the demographic change even more strongly into a senior society than in the Federal Republic of Germany, resulting in complex social problems. Apart from the need for adjustment of infrastructure for children and adolescents (e.g. schools), the out-migration of young residents and families is a problem, also for the economy (from production to gastronomy). Moreover, the existing strength of intact villages is challenged by this development.

Chapter 4 Effects of fixed links

In this chapter we review the effects in the regions in the immediate vicinity of the fixed links across the Great Belt and Øresund. At the end of the chapter we use these experiences to form expectations for the effects of a Fehmarn Belt fixed link. The Great Belt and Øresund have been chosen as case studies for improved interregional infrastructure because each of them share some features with the Fehmarn case.

While the more recent of these two links - the Øresund fixed link - has been studied intensively since its opening in 2000, the link across the Great Belt has not been subject to the same level of interest after the opening in 1998.¹⁶ Several ex-post evaluations of the Øresund link have been carried out, and most of them focus on the aspects of regional economic integration as we shall see in section 4.2. Conversely, there are few ex-post studies of the regional economy of the Great Belt link. The exceptions, Sund & Bælt (1999a), Sund & Bælt (2002) and Sven Allan Jensen & PLS Rambøll (2003), are of some value. The lack of ex-post studies of the Great Belt link with focus on regional effects is in contrast to the vast number of ex-ante studies of the expected regional economic effects (see e.g. Illeris, Jakobsen & Madsen (1990), Jakobsen (1991), and COWI (1998)).

We analyse the effects of the Great Belt link in more detail in section 4.1.¹⁷ The section on the Øresund fixed link, section 4.2, is devoted to a summary of the many ex-post studies.

In both cases we analyse the socio-economic conditions before and after the opening of the fixed link by the use of key indicators such as: population, income, employment, commuting and the number of companies.¹⁸

Regional and local measures to promote the potential socio-economic effects are also described. For the Great Belt link this has been done by interviewing civil servants on level of head of divisions and regional development agencies in the area. For the Øresund fixed link we have relied on desk research to describe the measures taken.

¹⁶ The Great Belt link was opened for trains 1 June 1997 whereas road vehicles could pass the bridge for the first time 14 June 1998.

¹⁷ However, this should not be mistaken for an ex-post evaluation of the regional economic effects of the Great Belt link. It is only meant to as a supplement to the two ex-post studies (Sund & Bælt (1999a) and Sund & Bælt (2002)) so that we can subtract general indications of how the area around the Great Belt has been influenced by the fixed link across the Great Belt.

¹⁸ This part of the study does not include a quantification of the specific effects of these measures. It is inherently difficult to isolate the exact effect of the fixed link from changes in other explanatory variables. To do so require detailed modelling of the regional economies and their complex interdependence. Moreover, there are vital problems with isolating effects from construction phase (boost to local economy) and the time after opening (changes in the structure e.g. transport and commuting). These analyses are not included in the current study.

We use our findings from the development in the vicinity of respectively the Great Belt and the Øresund to form expectations for the development with a fixed link across the Fehmarn Belt for Storstrøms Amt and Kreis Ostholstein. Thus, in section 4.3, the experiences from the two fixed links are used to illustrate what could be, and perhaps indicate, what will most likely not be, the effects of a fixed link across the Fehmarn Belt.

4.1. Effects of the Great Belt link

The expected regional effects of the Great Belt link has been widely studied in an ex-ante perspective (see Illeris, Jakobsen & Madsen (1990), Jakobsen (1991), Groes & Maskell (1991), COWI (1998)). These studies discuss the expected regional effects before the opening of the fixed link. Therefore they are speculative by nature and do not provide as useful information as the ex-post studies. We therefore concentrate on examining the available ex-post studies. Furthermore we review the regional policy measures taken to enhance the regional impact of the fixed link. Then, we supplement the analyses by looking at the interregional commuting and employment development in the municipalities near the Great Belt Bridge in particular and socio-economic development in general. Finally, we summarize the expected regional effects of a recent reduction in the toll for the Great Belt link.

Ex-post studies

Sund & Bælt (1999a) was an interview based study. It mainly looked at what changes the Great Belt Bridge has caused for companies. It is worth mentioning that the study was carried out relatively short after the opening. Thus, one would expect that not all businesses had adjusted to the new infrastructure.

Despite of this, 18 percent of the companies had increased the volume of goods transported across the Great Belt and 32 percent had changed transport route. There were differences between sectors, however. Among the sectors that were most affected were: Goods services, wholesale, inland transport and insurance. In contrast to the first three sectors, insurance is characterised by a high degree of passenger traffic. Another conclusion was that not only the regions in the vicinity of the Great Belt benefit from the fixed link. In fact some regions were better off than Vestsjællands Amt when it comes to the effects of the improved infrastructure (e.g. Sønderjyllands Amt and the Copenhagen area). This can partly be explained by the relatively low share of large companies in Vestsjællands Amt. Larger companies are in general better at benefiting from the Great Belt Bridge. It was also shown that it makes a difference whether the companies make an effort to benefit from the fixed link or not.

Sund & Bælt (2002) was based on a mixture of data analyses and interviews. It described the development in the traffic across the Great Belt from 1996 to 2001. In addition, the different users of the Great Belt Bridge were examined. Even though this study only consists of a traffic analysis it may be very relevant when looking at effects from infrastructure improvements. One could see the traffic level as a proxy for regional integration and regional integration makes business develop through various economic effects.

It was found that the passenger traffic had doubled from 1996 to 2001. While 9 percent of the travellers in 2001 were due to economic growth in the period, 10 percent steamed from other ferry or air routes. The rest of the new travels across the Great Belt (31 percent of the users in 2001) were caused by the so-called traffic jump – new travels. These travels only take place because of the improved infrastructure. The study also answered what the most important factors were for both private and business that used the fixed link. 83 percent of the business travellers reported that saved travelling time and increased flexibility is most important when choosing the Great Belt Bridge. Also for private travellers, time saved and flexibility were the most important reasons for choosing the bridge (69 percent). The study also stated that commuting across the Great Belt by car only constituted 1 percent of the total traffic by car. The goods traffic had increased even more than the passenger traffic: about 138 percent.

Sven Allan Jensen & PLS Rambøll (2003) produced a SWOT analysis of Fyns Amt. Thus, the study did not focus on the specific effects of the Great Belt fixed link. However, there are some comments in the evaluation of internal and external influences on the development that are relevant in this context. The authors shed light on the possible influence of the Great Belt fixed link on the less fortunate development with respect to e.g. population and employment in Fyns Amt. At the same time, the areas of Copenhagen and Århus, plus the so-called Triangle area (*Trekantområdet*) in the South of Jutland had continued with a good performance.

It was noted in the SWOT-report for Fyn that the Great Belt fixed link may have worsened the relative competitiveness of Fyns Amt with respect to migration and business establishment patterns compared to other areas. There is a lack of arguments supporting this view in Sven Allan Jensen & PLS Rambøll (2003) but the assessment may be correct. Why should one establish a business in Fyns Amt when it is possible to have a larger local market in other regions (e.g. the Triangle area or the Copenhagen area) and still be able to cover the whole national (and maybe even international) market because of the improved access that the Great Belt fixed link facilitates? Put otherwise, it may be easier to cover the market of Fyns Amt without having a business located there when there is a fixed link across the Great Belt.

Policy measures taken

In connection with the fixed link across the Great Belt (and the following shut-down of the maritime services) some institutions were placed in Vestsjællands Amt. In the years 1992 to 1993 the naval station of Korsør expanded significantly at the expense of Holmen in Copenhagen. Also in the early 1990s, the business centre of Vestsjællands Amt was established to facilitate the business development in the region.¹⁹ A department of Technological Institute was placed in Vestsjællands Amt. After a few years, however, all the departments were moved out of the region and placed in Tåstrup (the Greater Copenhagen Area) as a part of a re-organisation plan. Lastly, the Institute of Quality for the Service Sector was established in August 1996.²⁰

With respect to Fyns Amt, not many policy measures were taken.²¹ The Great Belt Bridge has triggered a development of the former railway areas into attractive housing estates in Nyborg. However, this improvement has come long after the opening of the fixed link. This development of the city of Nyborg is more a secondary effect of the fixed link than a direct policy measure. The municipalities of Nyborg (from Fyns Amt) and Korsør (from Vestsjællands Amt) co-operated on some occasions in their efforts to market themselves as attractive residential areas for people working in Odense and the Copenhagen area. Fyns Amt as a whole and the municipality of Nyborg in particular have later on followed up on these efforts e.g. with events in Copenhagen.

The regional effects in general

The overall effects on Vestsjællands Amt and Fyns Amt seem to be smaller than initially expected by the regional actors.²² This applies to both the positive and the negative effects. Even though the Great Belt Bridge is a traffic success, it is difficult to see large effects from the increased regional integration. The socio-economic description of the Great Belt area supports

¹⁹ In the year 2000 the business centre was partly put under the administration of Vestsjællands Amt and partly merged with TIC (Technological Information Centre). TIC is from 1 January 2004 closed and the competences are placed in the local business service centres.

²⁰ In the year 1999 the Institute of Quality for the Service Sector was merged with two other institutions and thus became a part of the Institute of Service Development with head quarter in Odense. All activities have since 1999 moved to Odense.

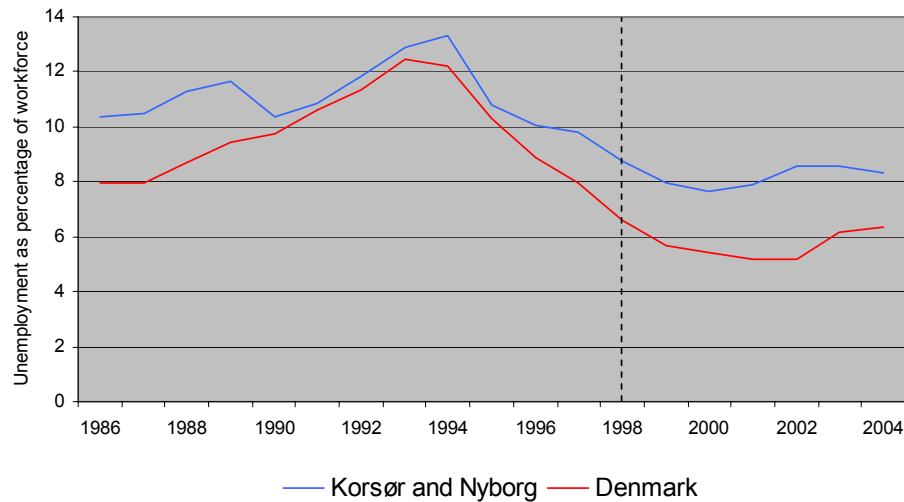
²¹ According to head of the Business Council of Eastern Funen, Kjeld Livoni.

²² This is based on interviews with Per Anders Foss, Business consultant from the administrative unit of Vestsjællands Amt and Rune Stig Mortensen, head of Division of Regional Development in the administrative unit of Fyns Amt.

this view.²³ Any large-scale socio-economic changes in the Great Belt area (compared to Denmark as a whole) cannot be detected. This is also the case when focusing on unemployment development in the municipalities near the Great Belt Bridge.

From Figure 4.1 we can see that the difference between the unemployment rate for Korsør and Nyborg and for Denmark has been increasing from 1995 to 2002. After this period the difference has decreased. As it is not possible to isolate other effects that could have influenced the unemployment rates, we cannot deduct from Figure 4.1 alone whether the Great Belt Bridge has reduced or increased the unemployment rate more or less than it is the case for Denmark as a whole.

Figure 4.1 Unemployment rates for Nyborg and Korsør and for Denmark 1986 to 2004

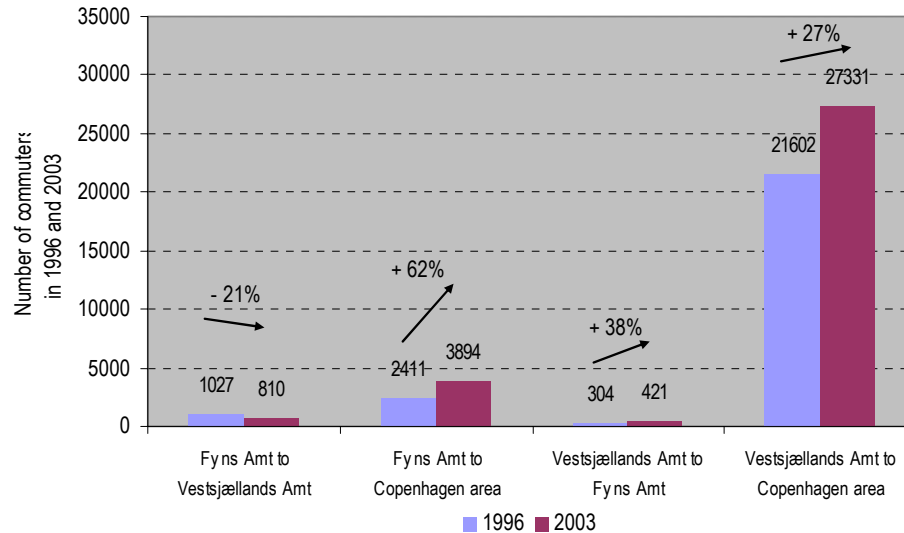


Source: Statistics Denmark

It seems like other Danish regions have been influenced just as much as the Great Belt area. To be certain of this conclusion, a thorough econometric investigation of this specific issue is needed though.

One could also question the scale of regional integration between the regions on each side of the Great Belt. For instance the interregional commuting is still low between Vestsjællands Amt and Fyns Amt – especially compared with commuting from Vestsjælland to the Copenhagen area and commuting between Fyns Amt and the Greater Copenhagen Area.

²³ For a description of the socio-economic development in the Great Belt area see appendix 4.

Figure 4.2 Interregional commuting in 1996 and 2003 – Levels and developments

Source: Statistics Denmark

Note: The Copenhagen area is defined as Københavns Kommune, Frederiksberg Kommune, Københavns Amt, Frederiksberg Amt and Roskilde Amt.

As Figure 4.2 shows, there has been an increase in the number of commuters from Vestsjællands Amt to Fyns Amt. However, the 38 percent increase only constitutes 117 commuters. If we compare this with the development in commuters from Vestsjællands Amt to the Copenhagen area then we see an absolute increase of a whole different order. The number of commuters has increased by more than 5,700 from 1996 to a total of 27,331 in 2003, i.e. an increase of 27 percent. Thus, the relative importance of the connection to the large labour market of the Copenhagen area is far greater than the improved access to the labour market on the other side of the Great Belt. It is more surprising that this is also true for Fyns Amt considering the distance between e.g. Odense and Copenhagen (about 160 kilometres). An increase of impressing 62 percent to 3,894 in 2003 from Fyns Amt to the Copenhagen area indicate that workers from Fyns Amt can find better matches with companies in the Greater Copenhagen Area than with the ones placed in Vestsjællands Amt. Thus it seems like the Great Belt Bridge has improved the possibilities for people from Funen to find a job and for the companies in the Copenhagen Area to find good employees.

Figure 4.2 shows that there was a decline in the number of commuters from Fyns Amt to Vestsjælland from 1996 to 2003. However, the absolute decline was only 217. One of the reasons for this development could be that the Great Belt Bridge has made it possible to live in Fyns Amt and commute to attractive workplaces east of Vestsjællands Amt (e.g. in Copenhagen) instead of in Vestsjællands Amt. Before a hasty conclusion is made, it should be noted that the decline very well could be a result of the shutdown of the ferry routes across the Great Belt.

The analysis indicates that the influence of the Great Belt Bridge on integration of the labour markets has been limited compared to the development between the two Great Belt regions and the Copenhagen area. Sven Allan Jensen & PLS Rambøll (2003) complement the analysis by pointing out that although the commuting level is increasing across the Great Belt, Jutland is by far the most important commuting target for Fyns Amt. Furthermore, the increase in commuting to Jutland is approximately the same as to Zealand. All in all, the overall effects of the fixed link on regional development are assessed to be limited.

Regional impact of the recent toll reduction

In May 2005 the political parties behind the Great Belt agreement decided to reduce the toll for cars by 20 percent and the toll for trucks by 5 percent. Copenhagen Economics studied the regional transport cost effects in two scenarios²⁴. In the first scenario (scenario 1) we reduced both the toll on the fixed link and the price for ferries on the alternative routes (Mols-Linien and Spodsbjerg-Taars). In this scenario the price for all alternative routes were reduced by the same monetary amount.

In the other scenario (scenario 2) the price of the alternative routes were kept at their initial levels, and only the toll on the fixed link were reduced. The actual outcome is somewhere between the two scenarios, since the alternative route with the largest market share (Mols-Linien) did reduce prices, but not to the extent analysed in the scenarios.

The study concluded that in either scenario the toll reductions have positive regional effects in all Danish regions²⁵. For cars, aggregate travel costs between East and West Denmark are reduced by 5 to 7.5 percent in scenario 1 (both bridge and ferries prices reduced). For trucks the effect is a little smaller; between 2 and 3 percent. Cost savings are largest for regions close to the fixed link, and smaller – but positive – for regions farther away. Furthermore, more benefits accrue to those who make extensive use of the fixed link.

The analysis also shows that scenario 1 implies less regional differences than scenario 2. In scenario 2 costs for cars are reduced by 3 to 5 percent, and 1 to 3 percent for trucks. When only the bridge toll is reduced (and the alternative routes charge initial prices) users for whom the alternative route (e.g. Mols-Linien) still constitutes the best alternative will experience no gain. The analysis shows that even for the northern part of Jutland (Region North Jutland) some users will benefit, even with a uniform reduction of the Great Belt toll alone.

4.2. Effects of the Øresund fixed link

In this section we rely on the ex-post studies to explain and evaluate the regional effects of the fixed link across Øresund. Hereafter we describe the regional policy measures that were taken in connection with the fixed link. As a supplement, we make some general considerations based on the socio-economic description from appendix 5.

Ex-post studies

OECD (2003) looked at the process of economic integration in the Øresund region. In the paper some attention was given to the Øresund Bridge as improvements in the infrastructure between two regions is often seen as the start of deeper integration efforts.

The study found that there is a gap between the ex-ante and the ex-post evaluations with respect to the road traffic across Øresund.²⁶ The lower car traffic was explained by two main factors:

- The 'curiosity' traffic disappeared after September 2000, and the holiday and leisure traffic in 2001 was lower than expected (because of economic slowdown in Sweden and a decline in the Swedish currency).
- Slower integration process.

²⁴ Cf. the study 'Regionale effekter af takstnedsættelsen på Storebæltsbroen', March 2005. The study was carried out for the Danish Ministry of Transport and Energy.

²⁵ The regions in the study were Northern Jutland, Mid-Jutland, South Jutland (including Funen), the Greater Copenhagen Area and the rest of the Eastern part of Denmark.

²⁶ With respect to the railway traffic, however, another report (Trafikministeriet, Finansministeriet and Sund & Bælt (2002) "Udredning af økonomien i A/S Øresundsforbindelsen") shows that the actual traffic has exceeded the ex-ante expectations.

OECD (2003) listed a number of main effects that are likely to be relevant. These main effects of integration were expected to come from increased accessibility in the Øresund region, from improved competitiveness (locally, nationally and internationally attractiveness), from urban development initiatives (e.g. initiatives in 'Ørestaden'), from an increase in the trans-border trade, and from extra tourism. Of these, the fixed link across Øresund especially influences the accessibility. As mentioned, the short term expectations before the opening of the bridge were not fulfilled. However, since 2003 traffic growth has been higher than the revised forecasts.

Even though there are great potentials, the cross-border commuting level was low and so was the cross-border migration level. This indicates that the labour markets on each side of Øresund were still not successfully integrated. Even though some of the reasons can be found in technical start-up problems and a weak system of supporting infrastructure, there are more fundamental problems with integrating the labour markets. Some of the most important problems are probably those concerning the differences in national institutions and laws (e.g. legislation frameworks, administrative procedures, mutual recognition of education and qualifications, and welfare benefit systems). Also the toll, the different currencies and the regulation of the housing markets are believed to hold back integration. Mental barriers and to a lesser extent linguistic barriers were also believed to restrain the two labour markets from becoming one (OECD (2003)).

According to the study, numerous initiatives trying to cope with the problems of integration have been taken and in many respects the projects can work as examples for other cross-border regions trying to integrate economically. Where the attempts have been successful there have been many efforts besides the fixed link:

"The new region has great potential but increased physical accessibility per se is not sufficient to reap the benefits of cross-border integration" OECD (2003, p. 16)

Mathiessen & Andersson (2002) was carried out at an early stage and the empirical evidence on the effects of the fixed link across the Øresund is therefore rather weak. However, the authors were in line with OECD (2003) in emphasising public, private and shared initiatives as a crucial part of exploiting the benefits of the fixed link.

The integration process of business was advancing fast according to Mathiessen & Andersson (2002). The driving forces behind this development were believed to be that the fixed link across Øresund increases market access and the available labour force without larger investments. Also the economies of scale potential within some operations (e.g. logistics) contribute to positive integration prospects.

Øresundskompass (2004) concluded that the regional integration process in the Øresund region only has developed slowly. There has been an increase in the number of commuters from Skåne to Zealand. However, this is not so much because Swedes are employed in Denmark. It is more because a number of Danes have moved to Sweden (e.g. because of lower living costs) and kept their jobs in Denmark. The migration from Denmark to Skåne has more than quadrupled from 1998 to 2002 whereas migration the other way around is stable. Even though the total number of moves across Øresund has increased since the opening of the fixed link the scale was still found to be low compared to interregional relocation within the two countries.

With respect to business integration there were signs of improvements (especially within interregional establishments) but the study showed a relatively slow development in this field. A part of the explanation for this could be the less visible barriers to integration. Øresundskompass (2004) found that linguistic and cultural barriers in fact have a relatively large impact on the cross-border contacts of both persons and companies. Having this in mind

it leaves room for optimism that the attitude towards people from the other side of Øresund is generally positive.

Culture and tourism are in many respects the front-runners when it comes to the cross-border integration in the Øresund region (Øresundskompass (2004)). The general tendency was a slow but steady increase in the contact frequency.

Copenhagen Economics (2001, 2002, 2003, 2004 and 2005) has constructed an integration index that works as a benchmark model for the integration in the Øresund region. The idea is to compare integration between the regions on each side of the border with the level of integration if there was no border.²⁷ It is problematic that the first full-scale benchmark for the Øresund region was made after the bridge was opened. As a result one cannot determine the exact magnitude of the 'integration shock' from the fixed link. The overall index for 2001 was 53 and the index was probably between 48 and 52 in 1999.²⁸ Index 53 was estimated to be equivalent to a physical distance of about 300 kilometres. From 2001 to 2005 the index increased by 9 percentage points to index 62 (Copenhagen Economics (2005)). Thus, the regions have been integrating during the observed period, but at a slower pace than anticipated. There were, however, large differences in the sub-indexes behind these numbers. Integration was most prominent within the area of business costs, but also traffic was improving with index 66 in 2005. If we look at the development from 2001 to 2005 we will see that the largest percentage point increases has been for traffic with 14. After a slow start labour market integration improved a lot from 2003 to 2005, and thus gets an index increase of 12 percentage points for the five-year period to 45 in 2005.

Policy measures taken

Numerous initiatives were taken in the Øresund region by a great variety of regional players. Thus, a detailed description of the individual projects would be a large-scale study in itself. Some general comments about the organisation and specific projects are, however, worth mentioning. Many of the projects have been financed or co-financed as parts of INTERREG IIA or INTERREG IIIA programmes. The two EU programmes have raised € 29 million and € 61.8 million, respectively. The first programme had a vast number of objectives and only the Copenhagen Area and Skåne was included. The INTERREG IIIA, on the other hand, was directed at the whole Øresund region (including Vestsjællands Amt and Storstrøms Amt). It sought more local involvement and was more focused with respect to objectives but included environmental concerns. Among the flagship projects were industrial platforms, tourism and media. Additionally, there have been possibilities for concrete projects to join INTERREG IIIB and INTERREG IIIC (OECD (2003)).

Øresundskomiteen was given the general responsibility of enhancing the integration process. 'Birth of a Region' was a project that should identify the common values of the Øresund region, make a brand book for the region, find a name for the region and plan the future marketing activities (Mathiessen & Andersson (2002)). 'Øresundsuniversitetet' was a co-operation initiative, creating coherence in the supply of educations in the higher education institutions of the Øresund region. The Medicon Valley Academy and the Maritime Development Centre of Europe are two important sector specific institutions for co-operation that were also established.

²⁷ When using it to evaluate the effects of the fixed link across Øresund one has to be aware of the problems with isolating the effects on integration of the fixed link alone. Many initiatives to promote integration have been taken and of course these will also affect the degree of integration. This is, however, just as relevant for the other ex post studies discussed in this chapter.

²⁸ Index 100 is equivalent with a situation where there is no border. Thus, the index compares cross-border integration with interregional integration within countries.

There were also some public initiatives that supported the integration of the Øresund region but have other purposes too. 'Ørestaden' is a Danish example. Here, cross-border integration was not the main purpose of the project but as a consequence of the project, especially businesses will move physically, and probably also mentally, closer to Malmö.

The regional effects in general

It is not possible to detect clear effects of the Øresund fixed link on the Øresund region based on the socio-economic description in appendix 5. As it was the case with the Great Belt fixed link, we cannot isolate the economic effects of the improved infrastructure on the Øresund region or on e.g. Denmark. Thus, it remains an open question whether and how the fixed link has affected the economy. What we can do is to follow the integration process of the Øresund region. Here, the general conclusion is that the business integration is evolving steady but slowly.

4.3. Possible effects of the Fehmarn Belt link

The review of the regional effects of the Great Belt link and the Øresund fixed link give us some indications of what to expect of the fixed link across the Fehmarn Belt for Storstrøms Amt and Kreis Ostholstein. Regions near a new fixed link have shown to be influenced by the infrastructure change in a number of ways. These effects have been described differently in the available papers for the Øresund and Great Belt fixed links. The reasons for these differences are that the studies vary in their focus and that each of them has taken into account the special circumstances of the regions that they are looking at. We follow the literature in this approach when we evaluate the possible effects of the Fehmarn Belt fixed link on Storstrøms Amt and Kreis Ostholstein. As a result, we infer the relevant experiences with regional effects of the Great Belt link and the Øresund fixed link and use these in connection with the specific circumstances of Storstrøms Amt and Kreis Ostholstein. This enable us to identify the effects, and thereby the opportunities and threats, to be expected. Thus, we take the strengths and weaknesses from chapter 2 and chapter 3 into consideration when the focus areas for opportunities and threats are established.

At this point we would like to mention that Storstrøms Amt for the last 5-10 years have initiated actions etc. to prepare the companies, people etc. for a fixed link across Fehmarn Belt.

Relevance of the Great Belt and Øresund experiences

The two regions in the Great Belt area can in some respects be compared to the regions in the Fehmarn Belt area: They have had a relatively weak economic performance and are to some extent dependent on the development in 'strong' neighbour regions but also on tourism. Thus one could expect a somewhat similar development in the Fehmarn Belt area with a fixed link as the Great Belt area has experienced with the fixed link across the Great Belt. However, there are also differences worth mentioning. The mental, cultural and certainly linguistic barriers are certainly much higher between Storstrøms Amt and Kreis Ostholstein because we are dealing with a cross-border area. Hence, the regional integration effects of a fixed link could be smaller in Storstrøms Amt and in Kreis Ostholstein than they have been in the Great Belt area. On the other hand, differences may also imply more potential.

In order to assess the effects of cross-border barriers on integration and the following economic effects, we supplement with experiences from the Øresund fixed link where cross-border issues have been and still are relevant. Here, however, the comparability comes short with respect to the socio-economic conditions in both Storstrøms Amt and Kreis Ostholstein. The Øresund region is characterised by high performance on all growth drivers and a high economic growth whereas the regions in the vicinity of the Fehmarn Belt have a relatively poor performance. Therefore, the comparability of the Øresund region on the one side and Storstrøms Amt and Kreis Ostholstein on the other side has its limits.

Combined, the experiences from the Great Belt area and Øresund, with respect to a fixed link, can be used to uncover the regional effects we are likely to see in Storstrøms Amt and Kreis Ostholstein if the two regions are connected to each other with a fixed link.

Lessons from the Great Belt and Øresund

Advantageously, the expected effects can be put under some headings that give an overview of the different channels the effects work through. The effects are divided in:

1. Transport and logistics.
2. Trade, export and competition.
3. Tourism and environment.
4. Commuting and migration.
5. Increased integration of the Fehmarn Belt regions.

These will form the base of our assessment of opportunities and threats of Storstrøms Amt and Kreis Ostholstein in connection with a fixed link across the Fehmarn Belt. Before we turn to the opportunities and threats in chapter 5 and 6, it is made clear how past experiences influence the anticipated effects on the Fehmarn Belt regions of a fixed link across the Fehmarn Belt. In relation to this, we first explain how the specific economic dynamics are expected to work.

Transport and logistics

The fixed link will lower the costs associated with goods transportation across the Fehmarn Belt. This will redirect some of the transport from the Great Belt Bridge and the ferries on the Baltic Sea. As a result, the fixed link carries the potential of growth in the non-maritime transport sector in Storstrøms Amt and Kreis Ostholstein. It is a tempting scenario for the Fehmarn Belt regions to aim for a major transport hub. If such a transport hub is realized the region will attract investments and new companies will arise. Thereby jobs will be created. While some of these will have a high-tech profile, a lot of the jobs will be for low-skilled workers who are more exposed to unemployment than the average. This can improve the rate of employment in the region.

With respect to businesses in the Great Belt area, especially within transport and logistics, Illeris, Jakobsen & Madsen (1990) expected very limited effects on the localization of firms from the decline in transport costs of goods. Sund & Bælt (1999a) supported this view as the Great Belt link has benefited Vestsjællands Amt little. And this is even though Sund & Bælt (2002) concluded that the link has proven to be a traffic success. As this indicates, an increase in traffic does not necessarily materialize in many jobs.

Storstrøms Amt and Kreis Ostholstein will, however, be influenced by the change in transport conditions. Mathiessen & Anderson (2002) note that the operations may be subject to a higher degree of economies of scale for the business area of logistics in the Øresund region. This could attract investments and create growth in these businesses. This scenario could also be relevant for Storstrøms Amt and Kreis Ostholstein as some transport services companies are already placed in these regions.

For the Øresund region, OECD (2003) also mentions trans-border trade as a source to important effects. A network of airport, harbours and land transport services can improve the competitiveness of the Øresund region. For Storstrøms Amt and Kreis Ostholstein the same facilities are not present at all or to a lesser extent. This will influence the expected benefits from improved infrastructure for the businesses within transport and logistics in the Fehmarn region.

According to Øresundskomiteen (2004), the Øresund region can develop into the greatest transport hub in the Nordic region because of its strengths. Only the harbours of Copenhagen, Helsingborg, Trelleborg, Ystad and Køge are mentioned though. The harbours of Storstrøms

Amt are not considered with respect to the future development! Because of the full-fledged, well-developed infrastructure (with bridge, roads, railways and airport), the harbours around Copenhagen and Malmö will most probably be the significant harbours of the future, cf. Øresundskomiteen (2004).

Trade, export and competition

The second channel works through trade, export and competition. With the fixed link across the Fehmarn Belt the export market will have an increased influence on the economies in the vicinity of the Fehmarn Belt. Lower transport costs for final products and especially lower costs of business travels will make the export markets more available for companies in Storstrøms Amt and Kreis Ostholstein. However, it will also increase competition as it is also cheaper to import final goods to the regions.

The market for intermediate products is also affected by the fixed link for the same reasons as with the final goods. Frequent physical contacts with sub-suppliers from across the belt is made less costly with increased transport flexibility and saved travel time. The market for intermediate products is important to mention because head-to-head competition will make prices of intermediate products fall and increase the variety. Thereby the final goods get cheaper to produce and, in turn, cheaper to buy. The activity in the regions will thus increase if business and industry is strong enough to engage in harder competition, and to make use of the increasing potential market. This last sentence thus points out the positive scenario for increased trade, export and competition.

The increased access to markets can help firms in the vicinity of the Fehmarn Belt to exploit their potentials. With increased sales, this may in turn improve productivity of the individual company because of economies of scale. Other sources of productivity improvements could be a greater variety of sub-suppliers because of the increased access and enhanced contact with the sub-suppliers (which can be crucial e.g. with Just-In-Time production). All these effects have the potential of job creation if the companies are competitive.

The largest effects, from the area of trade, export and competition, are in many of the studies believed to origin from improved access to other regions. Physical contact with interested parties is important for companies. Therefore, the effects stem from especially time/cost reductions for passengers. In connection with this, it is noted by Sund & Bælt (1999a) that effort is critical for benefiting from the improved access to customers and business partners.

What does this mean for Storstrøms Amt and Kreis Ostholstein in connection with a fixed link? In contrast to the regions near the Great Belt, there are different (e.g. linguistic and cultural) barriers between the regions in the vicinity of the Fehmarn Belt. Thus, the efforts for exploiting the new markets could show out to be lower for companies in the Fehmarn regions. Therefore, the positive effects of improved market access may also be smaller.

Improved access to large markets can also create head to head competition with a metropolis nearby. As Groes & Maskell (1991) note for the case of Fyns Amt vs. the Copenhagen area, it may be a better strategy to support the metropolis by division of regional tasks and forces. This observation could apply for Storstrøms Amt and Kreis Ostholstein too. COWI (1998) also makes clear that, compared to local integration, other things, like the development in the Øresund region, are more important for the development in the vicinity of the Great Belt.

For the regions near the Fehmarn Belt, the assessment could be the same. OECD (2003) emphasises an improvement in the attractiveness for companies (or regional competitiveness) as one of the main effects of the fixed link across Øresund for the Øresund region. Regional competitiveness is improved through three channels: Increased dynamics, more national focus on the regions near the link, and increased competitiveness on the international scene for the

whole Øresund region. For the regions in the vicinity of the Fehmarn Belt, the first and the last points may be less relevant. Increased national focus on development strategies for Storstrøms Amt and Kreis Ostholstein, on the other hand, may be of even greater importance than it is in the Øresund region. According to Copenhagen Economics & Prognos (2004) a fixed link across the Fehmarn Belt will however have strategic and dynamic effects in the Fehmarn Belt region.

Tourism and environment

The areas of tourism and environment are in focus as the third channel of influence. This is because both Kreis Ostholstein and Storstrøms Amt to some extent are economically dependent on tourism, and because the regions have significant environmental resources. Furthermore, the inherent competences within this field and the features in nature (e.g. a lot of prominent coastal areas) make the tourist industry an area with a promising future.

If we turn to the probable effects on tourism that a fixed link across the Fehmarn Belt will create, we find the following effects. The relative prices of a holiday or business trip will decrease with a fixed link thereby making Storstrøms Amt and Kreis Ostholstein more attractive for potential tourists from the other side of the belt. Furthermore, the potential benefits of cross-border co-operation will increase as the coherence of the two regions will become more obvious for tourists.

However, the fixed link will also increase competition in the tourist industry because it becomes easier to leave or pass through the specific region in order to get to the other side of the Fehmarn Belt. Taking the environment assets of the Fehmarn regions and projections of the general transformation into an experience economy into account, the prospects seem promising. It should be possible to target a multitude of price-categories through well-organised targeting of sub-groups. If the efforts are successful then the result will be jobs – especially for low-skilled workers. A precondition for this to happen is, however, that the environment will continue to be a distinctive feature and asset of the regions.

When it comes to the environment there are some study results from the Great Belt to base the expected effects on. There have been evaluations of the environmental effects of the Great Belt Bridge and the Øresund fixed link. They generally show results that are better than expected and even environmental improvements have occurred because of the fixed links (Sund & Bælt (1999b), Øresundsbro Konsortiet (2001, 2002, 2003)). If one takes the past experiences and environmental restrictions (e.g. zero effect on water flow) of the Great Belt Bridge and Øresund fixed link into consideration then a very limited change of the environment would be a likely outcome of a fixed link across the Fehmarn Belt.

For tourism, there is also a lack of evaluations focussing on the effects of the fixed links. Sund & Bælt (1999a) reports that around 70 percent of the companies in the hotel and restaurant businesses in Fyns Amt and Vestsjællands Amt have experienced a positive effect on turnover from the fixed link across the Great Belt. There is no reason to believe that there will be a smaller effect on tourism in the case of the Fehmarn Belt fixed link.

For business conferences and meeting activities, the regions in the vicinity of the Fehmarn Belt can offer alternative surroundings compared to the ones in the metropolitan areas and e.g. the coastal areas make the regions suitable for holiday. Thus, better access to these regions will most probably be beneficial. Øresundskompass (2004) sees culture and tourism as a front-runner of regional integration. Also for the Fehmarn Belt regions tourism could turn out to be one of parts of the economy that is affected most (in a positive direction) if a fixed link is constructed.

Commuting and migration

The scenario of commuting and migration is the fourth heading of channels, through which a fixed link can influence the Fehmarn Belt regions. The fixed link can in itself create the possibility for Storstrøms Amt and Kreis Ostholstein of becoming large scale commuting regions. It will be easier to commute across the Fehmarn Belt, and some persons may choose to migrate from Denmark to Kreis Ostholstein and keep their initial jobs. The same is of course true from Germany to Storstrøms Amt.

Furthermore, the fixed link increases the growth potential for metropolitan areas like Copenhagen-Malmö and Hamburg. This will, in turn, affect the regions of our concern. The increased growth in the metropolitan areas could increase real estate prices, and thereby make Storstrøms Amt and Kreis Ostholstein relatively more attractive as residential places for persons working in the centres. The last effect is thus indirect through economic growth in the centres.

The scenario is attractive in the way that the non-business activities and supporting businesses of the region can be kept and even expanded without relying on job creation in industries challenged by globalisation. Thereby, the regions will be able to improve their demographic developments and attract people with high wages and many resources.

The area of commuting and migration is seen as one of the most important, for the regional development for Vestsjællands Amt, in Groes & Maskell's (1990) evaluation of future development strategies for the Great Belt area. Offering affordable housing in attractive surroundings will in itself create spill-over effects from the growth in the Copenhagen area.²⁹ As mentioned earlier, COWI (1998) also put weight on the development in the Øresund region when looking at the most influential factors for the development in Vestsjællands Amt.

The growth in the number of commuters from Vestsjællands Amt to the Copenhagen area that we saw in Figure 4.2 verifies the increased dependence on Copenhagen. Thus, it would be wrong to ignore the secondary effects of a Fehmarn Belt fixed link on Storstrøms Amt and Kreis Ostholstein stemming from a probable growth in e.g. the Øresund region and Hamburg.

Storstrøms Amt and Kreis Ostholstein are facing some typical growth problems of peripheral regions, and in this respect, the regions are somewhat alike Vestsjællands Amt. For the Øresund region, one should bear in mind that this also includes Storstrøms Amt in the referred studies. Thus, an implicit assumption behind the expected effects from the Øresund fixed link was that the development in the Copenhagen area and Malmö also will benefit Vestsjællands Amt, Storstrøms Amt and the eastern part of Skåne (e.g. through job creation and increased productivity). Storstrøms Amt is dependent on the development in the Copenhagen area and so is Kreis Ostholstein on e.g. Hamburg.

Increased integration of the Fehmarn regions

The fifth area is Storstrøms Amt and Kreis Ostholstein as parts of a more integrated Fehmarn Belt region. The idea is that the fixed link will increase the competitiveness in Storstrøms Amt and Kreis Ostholstein through successful economic integration. The integration could maybe also include the clusters of Copenhagen for Kreis Ostholstein as well as Schleswig-Holstein and Hamburg for Storstrøms Amt if the prospects of co-operation are good. The regions could supplement each other through e.g. knowledge sharing if the regions have common competences. Thus, the effects considered here are not connected with increased market

²⁹ According to Lars Hansen, real estate agent in Home Nordfalster, there has been a significant increase in the number of house buyers that work in the Copenhagen area. In fact, he takes the view that recent price increases on real estate in the north part of Falster is solely driven by the extra demand from the people working in the Copenhagen area. The raise in mileage allowance for some municipalities and public childcare guaranty has contributed to the attractiveness of the northern part of Falster.

access. Nor are the effects steaming from people working outside the specific region who settle themselves in the region. The effects considered here origin from improved conditions for businesses that will increase the competitiveness and thereby create jobs and wage increases.

The integration of regions can, in general, result in mutual improvements in the performance on human resources, on entrepreneurs, on innovation and on information and communication technologies (ICT). An increase in the local labour market will, for instance, increase the competitiveness of companies in the regions because they get a better chance of hiring the 'right' employee. With respect to the performance on entrepreneurs, innovation and ICT, the integration will give the regions the possibility of attracting resources and to learn from the other side of the Fehmarn Belt and thereby improve the competitiveness.

Here, an analysis of the existing clusters could give important insight on the prospects of exploring synergies through co-operation because it would make it possible to predict whether Kreis Ostholstein has enough in common with the business clusters of Copenhagen-Malmö to make close co-operation valuable for both parties. The same analysis for Storstrøms Amt versus Schleswig-Holstein and Hamburg will give indications of the potentials for the future co-operation between the business clusters of these regions. If common competences are present then the co-operation can boost e.g. the knowledge level in the specific region. This will increase the economic activity in the long run.

The Great Belt experiences with a fixed link do not give good predictions with respect to interregional cluster co-operations for the regions near the Fehmarn Belt. However, there are things worth mentioning with respect to the interregional integration. Labour market integration is in focus in many of the studies. The reason for this is that labour market integration is believed to deliver the main effects of integration with a fixed link (see e.g. Illeris, Jakobsen & Madsen (1990) and COWI (1998)). Even though one would expect a relatively high degree of integration when there are no linguistic or major cultural barriers, the integration has been slow across the Great Belt.

The labour markets, for example, still seem to be relatively separated when looking at the commuting level. Thus, the labour market integration effects on competitiveness are less prominent. From other studies (e.g. Hansen & Schank (1997)) we know that many of the cross-border commuters have a higher education and this could explain some of the lack in integration. It is also worth mentioning that integration of labour markets only is beneficial if the two labour markets have distinct characteristics and thus supplement each other.

Two labour forces with a low level of education do not become one well-educated labour force just because they integrate! For the regions in the vicinity of the Fehmarn Belt, exactly the low share with a higher education but also the cross-border barriers limit expected integration. If we turn to the experiences from the Øresund region, the big differences in economic development between the regions near Øresund and those near the Fehmarn Belt leave room for few comparisons. For instance, there have been a wide variety of cross-border co-operation initiatives where some of these are very knowledge-intensive. Øresundsuniversitetet is the most prominent example.

However, it is important to note that other parts, like the labour market, only have integrated slowly. The index for commuting has more than doubled from 2001 to 2004 but is still only at 52 percentage point (Copenhagen Economics (2004)). OECD (2003) states that the differences in national institutions and laws, the linguistic differences, the toll, the different currencies, and the regulated housing markets are the main reasons for the slow labour market integration. These things are just as important, and some even more important, obstacles for regional integration across the Fehmarn Belt.

Summing up

We have now outlined, explained and discussed the five areas with the most probable effects that Kreis Ostholstein and Storstrøms Amt will experience with a fixed link across the Fehmarn Belt. *Transport and logistics* looks at the prospects of a transport hub. *Trade, export and competition* focuses on the effects on business of increased market access.

The scenario of *tourism and environment* sheds light on the influences of the fixed link construction on the environment and of the increased access on the development of the tourist industry. *Commuting and migration* gives attention to the possibilities of attracting people with work elsewhere as a regional strategy.

Lastly, *increased integration of the Fehmarn Belt regions* is evaluated. Here, cross-border co-operation of e.g. related business clusters and labour market integration are looked at as a way of improving the regional competitiveness. The five areas mentioned above form the structure of chapter 5 and 6 where the opportunities and threats of respectively Storstrøms Amt and Kreis Ostholstein are evaluated.

Chapter 5 Opportunities and threats for Storstrøms Amt with a fixed link across Fehmarn Belt

In this chapter we will discuss the opportunities offered to Storstrøms Amt if a fixed Fehmarn Belt link is constructed. We will also discuss some of the new threats that the region would need to consider and tackle in order to reap the benefits of a fixed link.

5.1. Possible effects of the fixed Fehmarn Belt link on Storstrøms Amt

On the basis of the strengths and weaknesses from chapter 2 we have identified the opportunities and threats for Storstrøms Amt in connection with a Fehmarn Belt fixed link.

As it was made clear in section 4.3 we have identified five key channels through which the fixed link across Fehmarn Belt can influence Storstrøms Amt. The identified channels of influence are:

1. Transport and logistics.
2. Trade, export and competition.
3. Tourism and environment.
4. Commuting and migration.
5. Increased integration of the Fehmarn Belt regions.

Common to all areas is therefore that they each bear a potential for Storstrøms Amt to make use of the Fehmarn Belt fixed link. The potentials are analysed through scenarios. The scenarios in each area represent a projection of what can happen - not what will necessarily happen. In other words, the scenarios do not necessarily represent what we think is the most likely outcome in the five areas. Nor does it take into account how the different effects in the key areas interact. The main purpose of the scenarios is to get rough estimates of the relative importance of the different areas. The scenarios are all feasible and based on the best available assumptions. However, projection of this kind is an extremely difficult task, requiring knowledge about all the dynamics in the economy. This information is not available at present.

In the end, the analysis enables us to assess the relative importance based on two criteria:

1. The scenario has a large potential.
2. The scenario is likely to happen.

In sections 5.2 to 5.6 we describe the mechanisms at work for each of the five channels. Second, the potential of the specific scenario will be evaluated with a numerical example. A discussion of the probability of realizing the given scenario and afterwards a threat assessment will end the analysis of each scenario.

5.2. Transport and logistics

The most evident effect of a fixed link on local employment is the reduction of jobs in the ferry service. One central question is whether this decrease can be offset by newly created jobs in the local transport sector.

Earlier analyses, AKF (1999), argued that a fixed link would not increase employment in the region, because the employment in the ferry service industry would decline (or disappear) and would not be directly replaced by employment in other activities in direct relation to the fixed link (ticketing, maintenance etc). In this section we discuss this result and investigate the opportunities and threats for the transport and logistics sector in the region.

The mechanisms at work

We agree that the net direct employment effects in the transport sector are negative for the region, as stated in the AKF analysis. What has not been analysed in the previous reports is the potential changes in the location of the transport and logistics firms as a result of the fixed link. We therefore take a look at what might happen to the transport sector in Storstrøms Amt after the establishment of the fixed link.

When looking at the transport related effects of the fixed link we find that compared to the ferry service across Fehmarn Belt a fixed link would imply:

- shorter travelling time
- higher travelling frequencies
- lower risk of delay.

This will lower the transport costs associated with the transportation across Fehmarn Belt, and the transport and logistics firms in the region that transports goods to Germany and Eastern Europe will certainly gain from the lower costs. And the cost reductions will be relatively larger for firms close to the fixed link than for firms far away from the link.

The relative decline in the cost of a specific transport link will redirect some of the transport from the Great Belt Bridge and the ferries on the Baltic Sea to Fehmarn Belt. This carries the potential of growth in the non-maritime transport sector in Storstrøms Amt. The question is how large this potential might be.

The improved hinterland connections, i.e. the railway infrastructure between Ringsted and Rødby are not regarded as part of the analysis. However, these investments are real opportunities for the region whether or not they are included in the cost-benefit analysis of the fixed link or not.

The potential of the scenario

Storstrøms Amt employed approximately 5.600 people within the transport sector in 2004 of which around 600 jobs are related to the ferry service.

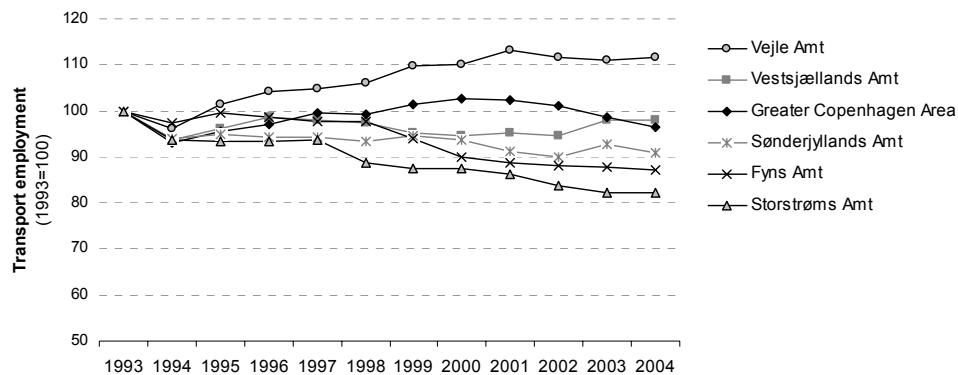
Sønderjyllands Amt in the Southern part of Jutland makes up the Danish border with Germany. The region is a national centre for export and import for historical reasons, and a large part of the road freight industry is concentrated here. Sønderjyllands Amt has had roughly the same number of jobs in the transport sector as Storstrøms Amt over the last ten years. Over that period Storstrøms Amt has lost 18 percent of its transport employment and the region is not specialised in the transport sector (see chart in Figure 2.8 in chapter 2). Sønderjyllands Amt has lost 9 percent of its transport employment. This is partly due to national decrease in transport employment (decreased by 4 percent over the same period), but a regional restructuring of the sector is the main explanation. As shown in Figure 5.1 most regions have lost employment in the transport sector (also the regions not shown in the graph, with the

exception of Viborg Amt where transport employment increased by 4 percent from 1993 to 2004).

Vejle Amt, and in particular the so-called Triangle area, has gained an increasing share of the Danish transport sector. This is the result of a regional restructuring of the sector resulting from the agglomerative forces set loose by both technological and other factors within the sector.

This means that the transport industry will continue to concentrate in a fewer locations that will become even more attractive over the years. This development will also influence the transport sector in Storstrøms Amt, and it is questionable whether a fixed link to Germany will enable Storstrøms Amt to change this pattern.

Figure 5.1 Regional restructuring of the transport sector in Denmark



Source: own calculations based on Statistics Denmark

We have also included the regions of Fyns Amt and Vestsjællands Amt in the chart (these are the two regions connected by the Great Belt link in 1998). Of the two only Vestsjællands Amt has been able to sustain its employment in the transport sector and a small increase since 2002 can be detected. Fyns Amt on the other side has not seen any increase in the transport sector since the fixed link opened in 1998.

With this in mind it does not appear plausible that Storstrøms Amt will create more than 500 extra transport related jobs with a fixed link across Fehmarn Belt. This is more than double the increase seen in Vestsjælland since the Great Belt fixed link opened.

Furthermore, a number of well-documented trends within the transport sector supports this conclusion and may even put doubt on the scenario where 500 extra jobs are created in Storstrøms Amt³⁰:

- The transport sector tends to concentrate close to large markets and not between large markets. Therefore the “new centrality” of Storstrøms amt after a fixed Fehmarn Belt link is a weak argument.
- There is no strong efficiency argument (any more) for placing transport firms close to a border.³¹
- There is a continuing trend of centralization in the transport distribution and forwarding businesses for efficiency reasons.

³⁰ The arguments are based on a phone interview with Lars Dagnæs, head of development at Institut for Transportstudier, but Copenhagen Economics alone is responsible for the conclusions.

³¹ After the introduction of the Schengen agreement there is no need for custom facilities and services from the transport sector that makes it easier and less costly to clear through the customs e.g. distribution and logistic centres.

- For East-Denmark this trend has resulted in a cluster in the central part of Zealand where a growing share of the transport sector is located.
- The largest part of the freight to Germany that origin from Denmark is currently passing the border in Schleswig-Holstein and a large part of this origin from Jutland. And this pattern will not be altered by a fixed Fehmarn Belt link.

Before the potential can be evaluated it is worth mentioning that jobs in the transport sector will also disappear with the Fehmarn Belt fixed link because it will eliminate some of the maritime activities. The loss of maritime related jobs in Storstrøms Amt as a result of a fixed link is estimated to 630. 140 jobs are, however, created because of operation and maintenance of the bridge. The net loss of jobs because of a fixed link is therefore estimated to 490 jobs (AKF 1999). If we take a scenario where about 500 jobs are created within the transport sector, then the result with respect to people employed will only be status quo. The effect on Storstrøms Amt of the fixed link will therefore be (close to) zero in our best case scenario. If the scenario is not obtainable the effect is negative.

Discussion of the scenario

The transport and logistics scenario is evaluated as having at best no effect on Storstrøms Amt because of the job losses in the maritime sector.

It surely makes the positive effects more plausible to occur that Denmark and in particular Storstrøms Amt has strong labour market policies curbing unemployment. Also the stable and experienced work force together with low costs land suitable for transport and storage facilities will be seen as relative advantages of the region. On the other hand weaknesses like the low level of entrepreneurship and the low utilization of ICT may hinder the sectors development. Also the low share of large companies could constitute a problem if the companies are too small to make effectively use of the fixed link which would influence the demand for transport services.

Threats

The obvious threats to Storstrøms Amt with respect to transport and logistics are that the railway stops will be reduced in order to cut the travelling time between the metropolises and that the extra traffic just will pass through Storstrøms Amt.

With respect to the last point, it does not seem plausible that Storstrøms Amt will automatically become a transport and logistics cluster just because a Fehmarn Belt fixed link makes it a part of a transport corridor. The relative attractiveness of placing a distribution centre in the region is likely to increase but things must be seen in perspective. Why should a company specialized in transport and logistics place itself in Storstrøms Amt instead of in the Copenhagen-Malmö area or in one of the German business centres? The location in Copenhagen provides a large local demand, while locating in Storstrøm would imply less local demand. The shortage of areas for business purposes in the Greater Copenhagen area could, however, make some companies choose to locate in Storstrøms Amt in order to reduce costs if the infrastructure is well-developed.

With recent years development in the transport sector in mind a more realistic scenario may be that the net jobs lost in the maritime transport business will not be offset by extra job creations in the rest of the transport sector.

5.3. Trade, export and competition

The analysis of the dynamic and strategic effects of a fixed link across Fehmarn Belt (Copenhagen Economics and Prognos, 2004) indicated that other sectors than transport could be the driving force for the dynamic effects from the fixed link. Firms might change location

choice because of the fixed link. They might increase trade and revise their internal logistics system. This could lead to:

- Increased trade
- Increased productivity
- Changed location choice of businesses
- Cross-border co-operation between companies.

Mechanisms at work

Earlier analyses suggested that the most significant economic effects are found outside the transport sector. Therefore the following effects and sub-effects are at work in the Storstrøms Amt economy:

- Reductions of overall logistic costs
- Trade (short run effects)
- Relocation of firms, firm creation and firm closures (long run effects).

Increased trade and the dynamics from relocation, entry and exit can bring about increased productivity, increased job mobility and cross-border co-operation between companies. All of which can lead to economic growth, the creation of new jobs and gains in welfare or socio-economic benefits. The line of effects can be summarised as:

1. The reduction in transport costs from the infrastructure project directly affects prices of products in different regions, which, in turn, changes firm sales and profits.
2. In response to these changes in profits, entry and exit of firms may occur, causing a further round of effects.
3. Entries of firms increase competition, which reduces profits, and bids up factor prices, further reducing profits.
4. Entries of firms also increase demands for intermediates, which increases suppliers' profits.
5. This, in turn, may cause supplier firms to enter.

The different regulations and conditions concerning the labour market in Germany and Denmark have not been included in the analysis. The reason is that these are fundamental preconditions that are not altered by the fixed link and therefore are outside the scope of the report.

The potential of the scenario

The largest growth effects in relative terms are found close to the fixed link. These regions are in relative terms the most affected regions in Europe from the fixed link across the Fehmarn Belt. The region of Storstrøms Amt gets a share of the Fehmarn Belt effects that exceeds its share of Danish GDP by more than a factor of 4. The regional growth effect for Storstrøms Amt is around 0.15% of regional GDP. This is a combination of the following effects:

- **Substitution effect:** The fixed link means that the cost of exports is decreasing in some regions, thus firms can export more leading to a gain for firms in that region. Profits will therefore shift towards regions that experience the highest decrease in transport costs.
- **Income-effect:** As firms expand their activity (because of the above effect) they buy more products and services in the region, including products and services from other regions. Regions that are not directly affected by the new link can therefore benefit through these indirect and induced effects.
- **Pro-competitive effect:** Increased exposure to competition decreases the price-cost margin leading to welfare gains. Competition will lower profit rates for companies and lower prices for the consumers. Economic theory tells us that there is a true welfare economic gain from increased competition, because the value to consumers of

greater variety and lower prices more than offset the loss in terms of profits to the producers.

The gains from increased exports will appear in those sectors that are expected to get the largest relative decline in cost of supply. The cost of supply is the production cost plus the transport cost. This means that products like paper and metals are expected to see the largest opportunities from the fixed link, but also agricultural products are expected to be affected.

Both agriculture and metals are some of the existing and future industrial strongholds of Storstrøms Amt (see section 2.4), and therefore the regional industry structure is well suited for harvesting the benefits of improved international transport links.

Furthermore, the export potential of small and medium sized enterprises in the region has been highlighted in a recent report which also concludes that the region has the largest export potential from export in machinery, metals, agriculture and wood industry³².

The report estimates that the employment effect of the full export potential is between 3.100 and 4.500 jobs. Comparing this to threats of creating new jobs mentioned in chapter 2, this will cover around half of the gap to the national average. However it shall be underlined that while a fixed link will help the region reaching its export potential there are other barriers that need to be dealt with as well.

Discussion of the scenario

It is important to note that the welfare gains from the fixed link in the area of business and employment from increased trade are of a small order of magnitude compared to regional GDP. Thus the improvement in business and employment development from the fixed link will not in itself be of a magnitude that allows Storstrøms Amt to make a significant catch-up on economic performance.

If the region shall benefit from the increased exports via the fixed link it is essential to deal with the internal and external barriers that potential exporters encounter. The external barriers to export can be lack of market information and lack networks to potential trading partners. The internal barriers relate to the lack of competences of and knowledge in international trade within the firms in the region. Here the ability to attract specialists and internationally oriented management becomes a key threat for the region to fulfil the export potential.

Threats

If we look at the current weaknesses of Storstrøms Amt then the threats are apparent. The increased competition from abroad will in general put pressure on Storstrøms Amt. The relatively low share of large companies could be a problem if business is not geared to exploit the new opportunities. The low productivity growth and the underlying poor performances in use of ICT, entrepreneurship, venture capital availability, innovation spending and education level may also hinder some of the potential for regional economic growth and thus growth in employment.

5.4. Tourism and environment

Tourism has been selected in the terms of reference as a sector which should devoted special attention. This does not imply that we have assessed whether the sector is the most important

³² See Sørensen O J & D Serles (2005), "Eksportpotentialet i Storstrøms Amt's Mål2-kommuner: En empirisk undersøgelse" report prepared for Storstrøms Erhvervscenter and Danmarks Eksportråd by Department of Business Studies, Aalborg University, June 2005 ("Export Potential of Storstrøms Amt objective 2 regions - An empirical assesment")

sector for the economic growth or not. It certainly has great attention. So the purpose of this section is to discuss what might happen to the tourist sector when a fixed link is constructed.

The mechanisms at work

The first mechanism through which a fixed link will influence the tourism sector has to do with the tourists originating from Germany (and other countries south of the fixed link). These potential tourists will experience a shorter travelling time and higher travelling frequencies associated with crossing Fehmarn Belt. The result is that it is less costly for tourists to get to Storstrøms Amt. When the relative price of a vacation or business trip fall, then the demand for nights and other tourist related products increase. The effect could be supported by total product development in Storstrøms Amt and co-operation with Kreis Ostholstein concerning e.g. branding.

Second, the fixed link makes it even more relevant to offer and brand a total vacation package of Fehmarn Belt products in co-operation with Kreis Ostholstein. The lower cost of crossing Fehmarn Belt will make it even more possible for people vacating in Kreis Ostholstein to take a day trip to Storstrøms Amt visiting sights. It will of course also be cheaper for tourists in Storstrøms Amt to go to Kreis Ostholstein but it will at the same time increase the relative attractiveness of the region as a vacation destination because more sights and activities are within reach. In order to compete with other destinations co-operation with Kreis Ostholstein could make a difference in people's choices of vacation product. This possibility is more feasible and more obvious with the fixed link across Fehmarn Belt.

Lower costs for tourists to explore destinations on the other side of Storstrøms Amt, is the last effect on the tourist industry by the fixed link. This especially applies for tourists from north of Storstrøms Amt. For these people a wider range of vacation destinations will be within reach (measured in time) when potential tourists look at their possibilities. Thus, the competition between regions for the tourists will increase.

The potential of the scenario

The scenario is based on the following assumptions:

- Estimated effect on tourism related turnover in Storstrøms Amt of a fixed link across Fehmarn Belt by director of Østdansk Turisme, Glen Polano: 20% increase.
- Estimated effect of tourism in Storstrøms Amt on employment in 2003 through LINE-turismemodell modelling: around 3,300 people.
- Estimated effect of tourism in Storstrøms Amt on gross value added in 2003 through LINE-turismemodell (in 2003 prices): around DKK. 1.1 billion (Danmarks Turistråd 2004).
- Many of the people employed will be among the unemployed in the existing population of Storstrøms Amt.
- A change in the overall tourism activity will result in the same percent change in gross added value and employment through direct and indirect (multiplier) effects.

If the scenario is realized under the given assumptions then employment will increase with 20 percent which equals just above 650. The value added will increase with the same percentage and the change will thus be around DKK 220 million for Storstrøms Amt (in 2003 prices).³³

We use these figures (transformed to 2001 prices) to analyse the impact on the income level in Storstrøms Amt compared to Denmark as a whole and find that the total income deviation of 11.8 percent is reduced to 11.2. If the result is decomposed then it can be shown that employment is still dragging down income compared with the national average but only with

³³ Note that we add the change in gross value added to the primary income even though the primary income is only a part of the gross value added. As a result the effect of the scenario is overestimated.

0.9 percentage points out of the new total of 11.2 percent. The productivity, work force and demography are unaffected by the potential increase in tourism in our scenario as only the employment will be affected in a direct way.

Discussion of the scenario

The possibility of growth in the tourist industry is certainly there if Storstrøms Amt takes measures in order to becoming an, even more, attractive place for tourists (and business conferences). The limited access to coastal areas in Germany has made the west coast of Jutland a large scale attraction for Germans. If the fixed link can create the same development in the tourist industry of Storstrøms Amt by breaking down some of the cost barriers, not to mention the psychological barriers, for Germans of crossing the Fehmarn Belt then the scenario is plausible. In this respect the nature and abundance of coastal areas is an important strength that in itself makes Storstrøms Amt able to attract tourists. How much effort and what kind of efforts will be needed in order to realize the potential is, however, uncertain and needs examination by professionals in the field of tourism. However, the co-operation with Kreis Ostholstein seems important for realizing the scenario and these efforts have long started.

Threats

When looking at the threats the tourist industry will face with a Fehmarn Belt fixed link, one has to notice that the link will increase the vacation destinations that are within reasonable reach for people. Put otherwise, the competition between vacation destinations will increase. As in every other business areas competition will only benefit those with a competitive product. Whether the tourist industry in Storstrøms Amt can deliver and thereby prosper from the fixed link is hard to predict. Furthermore, it is worth mentioning a problem that the tourist industry generally faces: The year to year variation in tourism constitutes a problem for everybody in the business. Growth in the sector can make the aggregate income of Storstrøms Amt more volatile.³⁴

5.5. Commuting and migration

The mechanisms at work

The scenario implies both a direct and an indirect effect. The first mechanism is direct. The fixed link across Fehmarn Belt will shorten travelling time for commuters to Germany and the commuters will also experience more frequent travels. As a result, the possibility of attracting people who work in Germany increases with a fixed link. However, the opposite is also likely to occur.

The second way that a fixed link can influence the number of out-commuters in Storstrøms Amt is indirect through higher growth in the Copenhagen-Malmö area and German growth centres such as Hamburg. Theoretical and empirical work shows that lower transport cost creates stronger competition and that this competition is in favour of existing large-scale business clusters for various reasons. The reasons include that firms want to place themselves where, amongst other things:

- there is a relatively large home market with a considerable income base
- there is a certain minimum amount of specific and non-specific sub-contractors (including services within finance, accounting etc.)
- there is a large and well functioning labour market
- there are similar firms to get inspiration from both with regard to products and production processes.

In short, there is evidence that firms situated in large-scale business clusters can tackle the threats of increased competition in a better way because they have advantages over the firm

³⁴ As a result, bad weather and pollution e.g. from oil tankers constitute real threats to the aggregate economy of the region and unfortunately it is not easy to eliminate these risks effectively.

outside the economic core areas. Thus, it is reasonable to expect a higher economic growth in e.g. Copenhagen and Hamburg as a result of the fixed link across Fehmarn Belt. The increased growth in these economic core areas will increase real estate prices and thereby make Storstrøms Amt relatively attractive as a residential place for people working in the growth centres.³⁵

The potential of the scenario

The scenario is divided into two parts following each of the outlined ways a fixed link can influence the level of out-commuting in Storstrøms Amt. First we will look at the potential of the direct effect where people live in Storstrøms Amt and commute to Germany. Afterwards we evaluate the potential of the indirect effect of the fixed link which eventually results in growth in the number of people who live in Storstrøms Amt and commute to the Copenhagen area.

The first part of the scenario is based on the following assumptions:

- An increase in the number of out-commuters from Storstrøms Amt to Germany so that the total number of out-commuters is equivalent to two third of that from Sønderjyllands Amt to Schleswig-Holstein.³⁶
- An increase in the number of in-commuters to Storstrøms Amt from Germany so that the total number of in-commuters is equivalent to one third of that to Sønderjyllands Amt from Schleswig-Holstein.³⁷
- Number of out-commuters from Sønderjyllands Amt to Schleswig-Holstein in 1995: around 1,300 persons.³⁸
- Number of in-commuters to Sønderjyllands Amt from Schleswig-Holstein in 1995: around 1,000 persons.³⁹
- Current level of out-commuters from Storstrøms Amt to foreign country is set to zero.⁴⁰
- The new out-commuters are people from Germany who work outside Storstrøms Amt but choose to move to Storstrøms Amt.
- The new in-commuters are people from Storstrøms Amt who will still work in Storstrøms Amt but choose to move to Germany.
- All the new commuters have the same primary income per employed as the average in Storstrøms Amt in 2001 (in 2001 prices): around DKK 256,000.

If the first part of the scenario is realized under the given assumptions then employment in the population living in Storstrøms Amt will increase with $(1300 * 2/3 =) 867$ minus $(1000 * 1/3 =) 333$ which equals 534 jobs. This means that the primary income of the region will increase with around DKK $(534 * 256,000 \approx) 137$ million if dynamic effects are disregarded.

This will lead to a just above 0.2 percentage point change in the deviation from the national income level which will narrow down the difference to 11.6 percent. The change can be decomposed into a 0.1 percentage point decrease in the deviation in the performance of both the work force and in demography of Storstrøms Amt compared to the national performance.

³⁵ The argument can in principal also be used for different businesses as the business areas are cheaper too.

³⁶ Hansen & Schanck (1997) reports (in a study on cross-border commuting in the Danish-German border region) that around two third of a total out-commuters from Sønderjyllands Amt to Schleswig-Holstein are people who have moved to Sønderjylland and kept their original jobs. The last third are typically Danes who have been working in Germany for many years and a considerable larger share of them have a higher education compared to the labour force of the region as a whole.

³⁷ Around one third of the total in-commuters to Sønderjyllands Amt from Schleswig-Holstein are people who have moved to Schleswig-Holstein and kept their jobs in Sønderjylland.

³⁸ Hansen & Schank (1997)

³⁹ Hansen & Schank (1997)

⁴⁰ The assumption on the number of current out-commuters from Storstrøms Amt to Germany is for sure underestimated as is the in-commuters to Sønderjyllands Amt from Germany. There are, however, no studies available that can shed light on the actual numbers.

The second part of the scenario is based on the following assumptions:

- An increase in the number of people who migrate to Storstrøms Amt from København, Frederiksberg, Københavns Amt and Frederiksborg Amt according to the increase from 1993 to 2003: 866 persons.⁴¹
- The new migrants are people from København, Frederiksberg, Københavns Amt and Frederiksborg Amt who work outside Storstrøms Amt but choose to move to Storstrøms Amt because it is relatively cheaper to live there.
- All the new commuters have the same primary income per employed as the average in Storstrøms Amt in 2001 (in 2001 prices): around DKK 256,000.

The second part of the scenario will increase primary income with around DKK (866 * 256,000 ≈) 222 million in Storstrøms Amt without dynamic effects.

The result on the deviation from the national income level will be that Storstrøms Amt is still 11.5 percent below. Again the performance of the work force and the demography shares the improvement equally. This time the change is just above 0.3 percentage points.

The total potential of development in demographics and living as it has been proposed here in two parts is just enough to lower the total percentage income deviation from the national level with 0.6 to 11.2.

Discussion of the scenario

When looking at the realism of the first effect in the scenario then one has to notice the problems with using assumptions based on the local integration of Sønderjyllands Amt and Schleswig-Holstein. These two regions have had a long and eventful history together and with a bridge to overcome the commuting level will probably not be as high as assumed. The initial level of commuting is also underestimated in our scenario. However, there are things that pull in the other direction. Commuting by train is hardly an option between Schleswig-Holstein and Sønderjylland because of the low frequency and relatively bad time compliance of the connections. With a fixed train link across the Fehmarn Belt commuting via public transportation will be an actual option that makes cross border commuting endurable.

It is uncertain how big the dynamic effects of the Fehmarn Belt fixed link will be on the surrounding world. This alone makes estimates of the spill over effects from the Copenhagen area such as those in the second part of the scenario questionable.⁴²

Threats

There is a possibility that more people from Storstrøms Amt will move to Germany than people from Germany will move to Storstrøms Amt because of the lower transport costs. In this way the first effect may give a negative result for Storstrøms Amt instead of a positive. Whether this threat deserves any attention is uncertain and the effects on the regions primary income per employed is – as with the positive effect - not big.

⁴¹ If we assume that this increase is due to increasing housing costs from 1993 to 2003 and that the dynamic effects of the fixed link across Fehmarn Belt will create an equivalent increase in the housing costs in København, Frederiksberg, Københavns Amt and Frederiksborg Amt, then the absolute increase in migration to Storstrøms Amt from this area will be 866.

⁴² When examining the potential of the scenario where Storstrøms Amt develop into an out-commuting area for e.g. Copenhagen it is important to notice that there is an effect that is not incorporated in the analysis. The effects of the infrastructure improvements between Storstrøms Amt and the rest of Denmark are not analysed. The reason is that these improvements have already been decided on. Due to this it is possible that some of the deviation in average income between Storstrøms Amt and the Danish nation-wide average will diminish in the years to come. This, however, has nothing to do with the fixed link across Fehmarn Belt.

In the argumentation for the second effect economic development in the metropolises spills over on Storstrøms Amt because of its relatively attractive house prices and nature. However, if the metropolises experience a better economic development than Storstrøms Amt and curb the congestion externalities then the net moving of employed people may be reversed to the advantage of the metropolises.

5.6. Increased integration of the Fehmarn Belt regions

The mechanisms at work

Co-operating with and, in turn, maybe joining clusters located in Schleswig-Holstein and Hamburg is facilitated by the fixed link across the Fehmarn Belt for two reasons. First, the faster business travels to German clusters makes it easier to attract knowledgeable Germans either to work or to live in Storstrøms Amt. Thereby industry relevant knowledge from Germans can be available in Storstrøms Amt.

Second, fast travelling from/to German clusters can create new opportunities of inter-company co-operation as cross water business meetings will be less costly. The same is the case for institutions of higher learning where researchers can exchange knowledge with each other and with companies.

Both the above mentioned effects will lead to more local integration in the border area. Closer co-operation with clusters in Schleswig-Holstein and Hamburg is beneficial for companies in Storstrøms Amt because there are situations where industry specific knowledge is crucial for a company's future development. This knowledge is profound in business clusters, and a way to secure the future development in Storstrøms Amt is, therefore, to make use of the German clusters. In this context, it is important to realize that a basis for such cross-water inter-company co-operation is that the knowledge in the clusters is relevant for the companies in Storstrøms Amt. Moreover, both parties must have an interest in the co-operation. In short, there is a need of common competences for the co-operation with the German clusters to any chance of developing.

In analysing the overall competitiveness of a region four main growth drivers can be identified as first mentioned in section 2.5. The performances of a specific region on these growth drivers is essential to how well the region is doing economically compared to other regions.

A region's competitiveness can be measured by the performance on

- Human resources
- Entrepreneurship
- Innovation
- Information and communication technology (ICT).

It is these growth drivers that the integration across the Fehmarn Belt can influence in a positive way. Improvements in human capital will mainly steam from increased labour market integration whereas progress in the regional performances within the areas of innovation and ICT are more likely to come from interregional co-operation between various companies and education and research institutions.

The potential of the scenario

The relevant channels of the long run effect on business development in Storstrøms Amt are not tangible. Knowledge sharing, innovation spill over and networks cannot be estimated and neither can the influence of them on the economic performance in companies. As a result, calculations on the potential of local integration are subject to a great deal of uncertainties. However, this does not mean that the scenario should be disregarded.

Discussion of the scenario

As stated above, closer economic integration has the potential of improving the performance on both sides of Fehmarn Belt. A precondition for this, however, is that labour market integration is successful and that the involved labour markets complement each other where there are weaknesses. For the labour market of Storstrøms Amt, the main weakness is the low level of education. Also, there must be common interests and overlapping forces for integration to happen through co-operation. The competences of Storstrøms Amt are:⁴³

- Seeds
- Vegetable fibres and composites
- Environment/energy/waste disposal
- Environmentally sound building.

To a lesser extent there are also competences within:

- Medico/health and
- Food processing.

The potentials in interregional integration will depend on how well the labour markets and competences in Schleswig-Holstein and Hamburg complement the conditions in Storstrøms Amt.

Threats

When looking at the prospects of closer economic integration it is important to notice that in time there could be advantages for companies to locate closer to each other. For Storstrøms Amt this possibility constitutes both an opportunity to attract more companies and a threat that existing companies will move out of the region.

5.7. Summary of opportunities and threats

Some benefits will accrue to the existing transport and logistics firms in Storstrøms Amt as a result of the fixed link. However, our analysis shows that the transport and logistics industry appears to have limited possibilities to develop into a large transport and logistics cluster in the region. This is due to the threats formed by the tendency to concentrate the transport and logistics in central locations (i.e the greater Copenhagen area and the Triangle area).

Business and employment in other sectors are more likely to represent a promising opportunity for Storstrøms Amt. The decline in transport costs will have largest impacts on metal industry, paper industry and agriculture, but other sectors in the region can utilise the fixed link to increase exports to Germany and Eastern Europe. In order to obtain these benefits the region shall consider reducing some of the barriers that hampers the export potential of the small and medium sized enterprises in the region.

The tourist sector represents another opportunity for Storstrøms Amt to be exploited. The fixed link will reduce some of the cost barriers, not to mention the psychological barriers, for Germans to cross the Fehmarn Belt and visit Storstrøms Amt. Also a close cooperation with Kreis Ostholstein to develop a common "package" for tourists will greatly enhance the region's attractiveness vis a vis other regions. Forecasts by the regional tourism organisation say that tourism might increase by 20 percent as a result of the fixed link, but compared to the potential gains from export of traditional products the scope a tourism strategy seems smaller measured in terms of jobs created. Still the opportunity might very well be worth pursuing.

The fixed Fehmarn Belt link will connect two peripheral regions without large urban concentrations and furthermore the Danish-German border will still represent an important

⁴³ According to Sekretariatet for Vestsjælland-Storstrøm Erhvervssamarbejde (2002).

mental barrier. Therefore the increase in commuting seen in the Øresund region and across the Great Belt link (see chapter 4) is not expected to reach a significant level in the Fehmarn Belt region. Therefore we see very limited potential in targeting the barriers to increase commuting across the fixed link.

Finally, the fixed link could initiate closer cooperation between the strong clusters in Storstrøms Amt with partners e.g. at research universities in the northern part of Germany. Very detailed industry specific knowledge is crucial for cluster companies future development. Therefore an important opportunity exists for Storstrøms Amt to make use of the German clusters and knowledge institution within the areas of seeds, vegetable fibres and composites, environment/energy/waste disposal and environmentally sound buildings. And to a lesser extent within medico/health and food processing.

Chapter 6 Opportunities and threats for Kreis Ostholstein with a fixed link across Fehmarn Belt

In this chapter we identify the key opportunities and threats for Kreis Ostholstein. Particular attention is paid to identifying opportunities in order to channel resources to those activities where significant economic benefits from the fixed link are to be realised.

The derivation of opportunities and threats is carried out by a reconciliation of the regional strengths and weaknesses with the most important effects of a possible fixed Fehmarn Belt link as described in chapter 4. For that purpose the first step is to analyse whether there are any interrelations between the strengths/weaknesses and the fixed link in the first place. And secondly to analyse where the most important interrelations are to be expected. In doing so it is only necessary to know whether general interrelations exist, without evaluating their negative or positive influence. We then worked out focal points, where interrelations appear particularly intense. The discussion of the opportunities and threats of the effects of a fixed link in the respective strengths and weaknesses align with these main threats.

From this we derive the following central topics of interest; within those we evaluate the opportunities and threats for Kreis Ostholstein:

- Transport and logistics
- Trade, export and competition
- Tourism and environment
- Commuting and migration
- Increased integration in the Fehmarn Belt regions.

6.1. Transport and logistics

Today Europe is being divided into regions, and the Fehmarn Belt region has a strategic location as the gateway to the northern European region, which comprises the Nordic countries, the Baltic countries, and partly Poland and Russia. This is a market with more than 250 million consumers. The region has good links to the dynamic economies of the Baltic countries and Scandinavia, which are growth regions within Europe. This might put the focus even more on the Fehmarn Belt region.

Table 6.1 Opportunities and threats for transport and logistics

Opportunities	Threats
<ul style="list-style-type: none"> • Possibility to achieve an excellent traffic infrastructure; improved accessibility (extension of the motorway up to Puttgarden) • Improved connections to the metropolises Hamburg and Copenhagen. • Improved connections to the railway high-speed network (stations Oldenburg, Puttgarden). • Construction of a transshipment centre in Puttgarden (ship/road/rail); Bridging function between Scandinavia, Baltic Sea area and Western Europe). • Improved connection to the regional network, e.g. station Burg/Fehmarn (appr. Mid 2007) 	<ul style="list-style-type: none"> • Possibly the additional transportation volume develops only as through traffic. This would occur in a scenario with no relocations, because then only redirections of international transportation routes have to be expected.

Better transport routes would have an impact on the competitiveness of businesses in the Kreis Ostholstein, because they would experience an improvement in foreign markets especially in Denmark and the other Scandinavian countries. In addition, it is to be expected that therefore also positive effects take place in the form of relocations and expansions of enterprises due to improved accessibility.

The possible fixed Fehmarn Belt link in reality consists of two parts:

1. The construction of a fixed link across the Fehmarn Belt and the establishment of a direct and shorter rail link between Copenhagen and Hamburg
2. Improvements to the existing rail networks in both countries.

From the point of view of Kreis Ostholstein, an upgraded rail service will probably have more significant effects in the long term, as the region will become markedly more attractive as a residential area for commuters to Hamburg or Copenhagen, offering cheap housing and a green environment. In the very long term, improved rail transport and a growing labour force could prove to be attractive for firms which find advantage in a central location between the cities of Copenhagen, Hamburg and Berlin, whilst at the same time being able to choose an attractive environment and a reasonable and qualified labour supply.

The construction of a transshipment centre in Puttgarden (ship/road/rail) could facilitate the bridging function of Kreis Ostholstein between Scandinavia, the Baltic Sea area and Western Europe. Though, feasibility studies have to show the sustainability of such an idea. In addition the traffic infrastructure in Kreis Ostholstein has to be improved and be adapted to the increased traffic volume.

In contrast to these opportunities, it is assumed that the ferry service in Puttgarden is to be closed down. Besides the fixed link across Fehmarn Belt, the traffic to and from Sweden will concentrate on Lübeck and Rostock (for passenger cars and rail freight also Sassnitz). For a longer term the rail connection between Gedser and Rostock will not be attractive for persons travelling by train. These persons would use the constructed Fehmarn Belt fixed link.

6.2. Trade, export and competition

The effects of the possible fixed Fehmarn Belt link on economics and employment appear economically in growth as well as turnover and are relevant for the population in the form of

jobs. The possible increase in employment is expected in growth industries and modern tourism (trends, sports, business), and losses are mainly expected in ferry services.

In summary, a selection of the opportunities and the threats are shown in the following table:

Table 6.2 Opportunities and threats in the topic field trade, export and competition

Opportunities	Threats
<ul style="list-style-type: none"> • Improvement of location conditions (construction of efficient hinterland connections, new commercial/industrial estates, motorway service area, image). • Implementing a health care cluster strategy (e.g. tourism, health resorts, medical engineering) and positioning Ostholstein as a link between the North German Life Science Cluster and the Nordic Medicon Valley. • Promotion of the structural change in economy by business development and new enterprises. • High capacity utilisation of existing and/or possible new industrial estates. • New markets, such as wind energy and maritime biotechnology, could be tapped. Thus opportunities for new economic clusters exist. • Construction Phase: Large employment effects in the construction industry and their supplier sectors. Reinforcements by multiplier effects. • Possibility of the realization of net employment effects during operating phase. • Decrease of the strong dependence on tourism. • New jobs due to tollgate and maintenance work. • Due to the fast connection with the metropolis and less mobility problems, the recruiting of highly qualified employees and managers becomes simplified. 	<ul style="list-style-type: none"> • Local and temporary loss of fishing grounds during construction work⁴⁴. • Loss of employment by reducing ferry services. (though according to Kocks (1999): estimated net effect for the Kreis Ostholstein: +325) • There are anticipated possible losses of regular guests in tourism by negative impacts during the construction phase. This effect is not anticipated during the operation phase⁴⁵.

With a fixed Fehmarn Belt link the local conditions for economic development in Kreis Ostholstein will improve. This improvement results from the effects like e.g. saving of travelling time, integration of markets, psychological effects of togetherness or also the increased potential of specialists and highly qualified staff.

A structural change can be realized with the settlement of companies from knowledge-based, new markets, implementing the new image as a modern, future-orientated and European region. A reorientation of the industrial estates (aspect of marketing) or e.g. the settlement of central restaurants in the district can offer opportunities.

The growth in knowledge-based industries in Germany is forecast to continue, and although Kreis Ostholstein is currently under-represented in some sectors, the key ingredients to increase business and employment activity are present in the region. These include a high

⁴⁴ According to the study "Regionales Entwicklungskonzept Ostholstein" from June 2002, page 79. This impact is also mentioned in the Environmental Consultation Report (based on the feasibility studies). But it is also stated that no severe or irreversible impacts on fisheries are anticipated.

⁴⁵ According to the study "gutachterlicher Fachbeitrag zur regionalen Tourismuswirtschaft" from November 1999.

quality of life, a positive investment climate arising from a fixed Fehmarn Belt link, access especially to the Scandinavian market and a supportive business development network.

Further opportunities result from the combined strengths in the tourism industry, linking the health resorts and medical technology to a cluster strategy in the health care market. The Kreis Ostholstein is in particular suitable for a comprehensive development of the health care market, as besides the customers (tourists from the target groups seniors, cure, health) numerous companies and resorts are located in the district.

Ostholstein fulfils outstanding requirements to place emphasis on the health care industry – which can be conceptualised in a broader sense in the key word “Life Sciences”. The existing companies in the region, the existing facilities of health care, the development of costs within this market and the future growth path as well as the demographic development of the district, which clearly demonstrates the risen and further rising proportion of older people within the total population of Ostholstein, are evidence and basic requirements for a successful positioning of the health care industry in the district. The life science sector’s high long-term potential for development on both sides of the Fehmarn Belt allows this branch to be developed as a common future-cluster in both national regions as well as in an aggregated region “Fehmarn Belt”. Furthermore the life science sector in the Fehmarn Belt region can be embedded in the North German Life Science Cluster and the Nordic Medicin Valley.

For the tourism industry various opportunities align with a possible fixed link, which can support the position of the hotel and restaurant industry. On the one hand there is the necessity and possibility of expanding the range of services in the business and conference services. On the other hand there is the above mentioned adjustment to the needs of the health care sector. With additional adjustment on these segments, the tourism industry can act less seasonally, since both types of services provide all-season employment and turnover.

We would also like to point out the aspect of marketing. A bridge in architecturally high-quality design can determine the title pages in media and thus determine the brand of Fehmarn. Offers such as an information centre on the building site, trips on the bridge or exhibitions are able to convert even the construction phase into a special event.

Related to the construction phase, another opportunity should be addressed. Regional construction companies should do their utmost to be involved in the construction process. This can be realised by cooperation with firms that can handle a project of such a dimension, and thus the regional firms participate in the distribution of the “contract sections”. Finally the regional construction industry will experience a boom phase for approximately one decade. At least for this period, positive job-creating effects in the construction sector can be realized and help all supply sectors. The developed know-how in the construction industry will in itself increase the competitiveness of the firms, relevant in related businesses.

Apart from the opportunities for the economy and the employment in Kreis Ostholstein various threats are to be expected:

It must be taken into account that during the construction of a bridge some fisheries will be locally and temporarily affected. Number of fishery vessels registered in the harbours is given in the Environmental Consultation Report (ECR) for 2004: 61 on Fehmarn and 70 vessels on the German mainland. Therefore it might be that the essential basis for gaining a livelihood for the fishermen is lost. Accordingly, the limited catch quotas must be arranged as compensation for the respective consequences. For local fishermen in Puttgarden there could be a need for individual solutions or compensation during the construction work.

A further risk for the regional employment situation is the anticipated loss of regular customers in the tourism industry due to constraints during the construction phase, the changed image of the region and by higher overall traffic volume. The nature-loving tourist might be frightened off and could choose a new destination. This perception might be traced back to the high importance of tourism in Ostholstein. 90% of the population of Fehmarn is directly or indirectly dependent from tourism according to the "gutachterlicher Fachbeitrag". As this group of tourists represents a "unique selling point" of the island Fehmarn, a solution to countermand this threat must be formulated. It is important to state that any disturbances caused by the construction work are dealt with in the Environmental Impact Assessment (EIA).

The expected job losses when Scandlines AG stops its ferry service between Puttgarden and Rødby are the largest risk for the employment situation. In the north of Fehmarn jobs are expected to be lost.

These last two aspects are discussed in detail in the sections on "nature and tourism" as well as "transport and logistics", also in their non employment-relevant aspects.

6.3. Tourism and environment

For the Fehmarn Belt region tourism is very important. Ostholstein is one of the most outstanding regions in Germany for tourism. Measured in terms of bedding capacities and overnight stays the Kreis Ostholstein is the seventh most relevant tourism region of Germany with about 28 overnight stays per inhabitant. This is about four times higher than the country-wide average in Schleswig-Holstein. About one third of all sales volume is generated by the tourism, either directly or indirectly.

Tourism, the world's top growth industry, is the main economic engine in the region. There are opportunities to develop a number of segments of the tourist trade, including: day trips, the passing traffic along a possible fixed Fehmarn Belt link, congresses, and eco-tourism.

Table 6.3 Opportunities and threats in the field tourism and environment

Opportunities	Threats
<ul style="list-style-type: none"> • Target-group-specific creation of new touristy offers (congresses /conference). • Reduction of high seasonality by new touristy offers. • Building site/bridge inclusive info- centre or, later on, sightseeing tours as attraction. • Additional numbers of visitors from Scandinavia (short vacation), because the organizational expenses of the ship journey cease to exist. • Increasing overnight accommodation (Topic: Bridge tourist); increasing traffic volume increases the potential of intermediate stops. • Additionally impulses due to the shortest connection of Schleswig-Holstein to the economically dynamic Øresundregion. • Marketing by presence in media. • Due to its singularness the bridge represents a special landmark and can be used in such a way for tourism marketing (Loreley, Cologne cathedral) • Additionally the development of a joint marketing of tourism in Kreis Ostholstein and Storstrøms Amt might open up new target groups 	<ul style="list-style-type: none"> • Conflict with the tourist image as nature and a recreation destination. A changing Brand „Fehmarn-Tourism“ addresses other customer groups leading to fluctuations in tourist demand (kind and extent of accommodations and services) • Due to the possibility of a loss of regular guests, income losses by decreases in the overnight accommodation numbers might be a consequence. A changing demand may possibly lead to financial penalties with regard to accommodations specialised on ferry tourists. • Environmental impacts during the construction phase (sediment flags, beach quality, bird world, angling possibilities)

The experiences of other infrastructure projects (Channel Tunnel, Great Belt) show that the fixed link might have largely positive effects for the tourism industry. For tourism the fixed link means mostly a better accessibility and reduction of the travelling time. The new infrastructure provides an opportunity for new target groups like day tourists or short-break holidaymakers.

Increasing demand for tourism presents a major opportunity for the Kreis Ostholstein. Forecasts for long term growth offer an opportunity to secure an increased share of the market. The emphasis is likely to be on quality and higher value-added tourism. The growth market **wellness/fitness holiday** is strongly represented in the Kreis Ostholstein. Also the aging population will have a positive consequence for the region with regard to increasing demand. Actually the Kreis Ostholstein is well prepared in the area of tourist attractions and services for older people.

But despite promising perspectives for tourism, **improvements** could be necessary for the region to be more active in the long-term view. The image of the Kreis Ostholstein and its tourist attractions could be brought better to market by a common launch in Denmark and Germany. The attractions and tourist offers in the region and its hinterland (combined programme of city trips, e.g. in Hamburg, Lübeck, Copenhagen) should be integrated into a better network. The coastal tourist offers should be linked with adverse weather programmes (museums and city trips).

The bridge in itself will be a **unique attraction**. During the construction phase tourists could be attracted by visiting an information centre, showing details about the high-tech bridge. After the construction phase the centre could be converted into a durably profitable, attractive and weather-independent leisure facility.

Additional numbers of visitors from Scandinavia are expected to visit the Kreis Ostholstein, either as intermediate stops within a larger journey or as a short trip destination. In addition, the retail trade could benefit from the fact that the area could become a popular holiday destination for Danes living farther away from the border, partly due to the opportunity to go cross-border shopping. The experiences of other infrastructure projects (Channel Tunnel, Øresund Bridge) show the intensification of cross-border trade activities and shopping behaviour. The experiences of the Channel Tunnel have shown a slightly increasing emergence of shopping trips in a radius of a travel time from 1 to 1.5 hours. Nevertheless, the relative share of shopping trips is seen at 1.0 up to 1.5 percent of all trips, according to the traffic forecasts.

Increased competition for tourism-related expenditure presents a major threat to the region. The introduction of more low cost flight operators from regional airports and increased consumer expectations make foreign holidays more attractive than ever, including short break holidays which many people would traditionally have taken in Germany. Independent from a fixed link across the Fehmarn Belt these changes require the tourism industry in the region to improve the quality of the product, and to develop demand led services, which cater for higher value-added visitors.

The previous comments point out that the tourist image as nature and recreation destination might change and therewith the kind of tourists who visit the region might alter, too. For this a strategic decision is needed as to what kind of direction the region will take concerning its target groups in tourism.

6.4. Commuting and migration

The demographic development represents for the Kreis Ostholstein, as for Germany as a whole, one of the central threats of the future. Overall, the population trend is positive in Kreis

Ostholstein. However the age structure is shifting to an aging society, since an influx of seniors comes along with a low birth rate.

Table 6.4 Opportunities and threats in the field commuting and migration

Opportunities	Threats
<ul style="list-style-type: none"> • The better accessibility of the metropolitan regions improves commuter possibilities, thereby living attractiveness increases and decreases migration of job-seeking persons. • Exceptional landscape attractive for housing. Attractiveness as housing location for families should be highlighted, not least in order to keep the age composition of the population young and vital. 	<ul style="list-style-type: none"> • Inhabitants of Fehmarn partly see the bridge as a troubling factor and partly as a threat to move, which is a subjective perception of the regional population and therefore has to take seriously.

Whilst a certain number of young people will inevitably leave to go to universities or other educational establishments, a significant number do so because of the lack of appropriate employment opportunities. Further **loss of young people from the rural areas** will undermine the economic and social viability of rural communities, as communities are increasingly comprised of those commuting to urban centres, and of older persons no longer economically active.

With the possible fixed Fehmarn Belt link and the accompanying expansions of the traffic infrastructure the Kreis Ostholstein is better linked to the metropolis areas Hamburg and Copenhagen. Due to this intensified commuter interrelationships can result, which might give inhabitants the opportunity to work outside the region but still live there; a very important aspect for the social stability in the Kreis Ostholstein. On the other hand, the possibility that job opportunities in the region will be enhanced could reduce the present lack of highly-qualified employees.

The high living and leisure quality of the Kreis Ostholstein together represent a chance, since families choosing their place of residence search for soft location factors like the residential environment. With regard to regional development the bridge is an opportunity, since the settlement development will benefit from this and village life remains vital. Also the divergent economic resources between the southern and the northern part of the district can be partly defused in the context of this development, so that a more homogeneous district could arise.

For many inhabitants of the Kreis Ostholstein the bridge is a disturbing factor, which could induce them to relocate. Therefore the negative impacts of traffic have to be minimized as far as possible. The dimension of possible disturbances must be clarified with the EIA. Examples, like the motorway A1 near Oldenburg show that speed limits and preventive measures can reduce the disturbance. However a rising (transit) traffic volume remains a disturbing factor in the perception of the regional population in the Kreis Ostholstein.

6.5. Increased integration in the Fehmarn Belt regions

In times of unified Europe, a fixed Fehmarn Belt link represents a symbol of convergence, and both neighbours Kreis Ostholstein and Storstrøms Amt might accrete to a common region. Already today the discussion about the bridge reconciles both regions.

Table 6.5 Opportunities and threats in the topic field increased integration in the Fehmarn Belt regions

Opportunities	Threats
<ul style="list-style-type: none"> • The bridge could be used for the constitution of extended transnational networks; Development and intensification of the potentials already exist (within education system and between companies networks already exist) • Promoting cross-border cooperation can trigger synergies and possibly open new markets. Political collaboration at all levels could help to solve the inherent problems of the region. • Stronger interrelationship with Denmark reduces the language barrier and strengthens the bridging function of the Kreis Ostholstein • European Union funds (e.g. INTERREG) make additional projects possible (in the context of the formation of a Fehmarn Belt region). 	<ul style="list-style-type: none"> • Concerning a closer economic integration it is important to notice that in time there could be advantages for companies to locate closer to each other. Besides the opportunity to attract more companies this also may lead existing companies to move out of the region.

The fixed link will close the gap of the international transportation network between the European mainland and Scandinavia on the shortest connection. Apart from this symbolic dimension, Storstrøms Amt and Kreis Ostholstein can grow together to one single region, in which the interrelationship is a central element.

The fixed link will ease co-operation in all areas of society - education, tourism, economy, etc. Co-operation can establish synergies and open new markets. Also political co-operation can achieve a new quality, which can enhance the region on basis of endogenous potentials and grants of the European Union.

On the sub-regional level there is the possibility to enhance the structurally disadvantaged and economically weak parts in the south of Storstrøms Amt and the north of Kreis Ostholstein and to decrease the orientation of the Storstrøms Amt towards Copenhagen and Ostholstein towards Lübeck and Hamburg. In such a way both could take on a bridging function for their respective neighbour - Storstrøms Amt towards Germany and Central Europe and Kreis Ostholstein towards Scandinavia - in order to open new markets and generate dynamic impulses.

6.6. Summary of opportunities and threats

In the following abstract the opportunities and threats of Kreis Ostholstein are evaluated and condensed to action fields from the consultant's view. We distinguish two types of opportunities: First, the potentials and action fields, which have a large potential for Kreis Ostholstein and can be realised independently of the construction of a fixed link across the Fehmarn Belt (e.g. cluster strategy, health care). Second, the potentials and fields of action which depend directly on the bridge connection and cannot be realised without the realization of a fixed Fehmarn Belt link (e.g. using the construction period for a boom in the construction industry).

The following table summarises the potentials in connection to the bridge.

	<i>Low effect dependence</i>	<i>High effect dependence</i>
Cluster analysis and strategy - health care industry	X	
Cluster analysis and strategy - transport and logistics		X
Opportunities of cooperation and networks	X	
Integrated traffic development		X
Using construction period – building boom		X
Development and protection of nature	X	
Development strategy for tourism	X	
Attract companies; positioning of location		X
Cope with demographic change	X	

Below the different impacts of the fixed link on the action fields are discussed.

Low interdependence

1. Cluster analysis and strategy health care industry
2. Tourism development strategy - in both cases with and without connection and with consideration of harbour strategies
3. Cope with demographic change
4. Development of a German-Danish industry network and regional governance
5. Protection and conservation of the outstanding nature potentials

Kreis Ostholstein is especially predestined for a broad development in the health care market as there are customers (tourists from target group of seniors, regimen and health) as well as many suppliers. The latest scientific conclusions and the implementation of modern technology have changed the health care resort. For instance, the sector of medical technology has been influenced by a revolutionary change during the last couple of years. This has been caused by the development of components and methods in the areas of information technology, optics and biotechnology. But not only the constantly growing market for medical products is of importance for companies in the health care industry located in Kreis Ostholstein. E.g. technical aids are needed for disabled people in the field of rehabilitation. Products for job adjustment are demanded to improve mobility and complex individual solutions which range from a wheel chair to amputation appliance.

Kreis Ostholstein is very well equipped with pre-conditions and has the potential to develop a regional health care industry cluster. In a more modern way it could be summarised under the keyword "Life Science". The existing companies in the region, the existing facilities belonging

to the health care sector, as well as the demographic development in the region are indicators and basic requirements for a successful positioning of the health care industry in Kreis Ostholstein.

A comprehensive cluster strategy puts focus on the building of networks after reviewing the situation to develop the branch strategy in perspective of the following years. The latter part of the cluster strategy identifies the existing strengths and gaps. As a matter of course tourism (leisure time facilities) has to be integrated in this comprehensive approach.

Tourism and the hotel and restaurant industry are the economic base for Kreis Ostholstein. Nevertheless it is necessary to develop the outstanding potentials steadily to keep today's position in tourism. It is essential to take care of the customer's demands and to include the market development.

A closed concept has to make a quotation history which is target group orientated. The concept has to answer and refer to the question on which main target groups should be addressed in the following years. The elderly, business people and guests who are interested in health or nature, younger people, families etc. These groups can have the same interests but there can be very specific demands as well. A bridge will have effects on the tourism industry – but the development of a concept is a necessity independently from the construction of the bridge.

Elderly people are an important target group for the development in Kreis Ostholstein. The expanding moving in of elderly people and the low fertility rate as well as the moving out of younger families cause an unbalanced proportion in the community in a long-term perspective. The development of cities/towns and infrastructure as well as the financial situation of towns have to be discussed in connection with the phenomenon of demographic change. It would make sense to get into contact with other towns and districts to find proper solutions for this development.

By discussing the potentials and action fields it becomes obvious that the aspects named above are connected with each other. Elderly people are the main customers of the health care and tourism industry. And they also take an essential part in the discussion of the demographic change.

The development of the German-Danish co-operation can reveal synergies and open new markets. Co-operation and networks can exist on the society level. The keyword is Regional Governance, in which for example the Fehmarn Belt Forum should be continual exerted to intensify contacts. On the other hand there are economic networks for the development of the region. Efficiency, new markets and know-how transfer are only some examples of those networks' use.

The protection and conservation of the natural resources is essential for both Storstrøms Amt and Kreis Ostholstein.

The environment and the natural resources form the basis of the tourism industry and the high living quality for the population. This image has to be secured on a long-term basis, since otherwise the basis for guests and inhabitants will be undermined. The environmental impacts will be dealt with in the EIA.

High interdependence

1. Cluster analysis and cluster strategy "logistics and transport"
2. Integrated planning of transport development: road, rail and commuter trains
3. Strategy to derive benefits from construction phase
4. Relocation of enterprises; positioning of business location

Similarly to the point “cluster analysis and strategy of the health care sector” the analysis of the strengths and opportunities showed that the logistics and transport sector contains a large development potential. The “tri-modal” nature of the Fehmarn Belt region, at a crossroad of road, rail and sea transport, is already today visible in terms of total transports, but also in terms of transport related services.

A fixed Fehmarn Belt link provides a basis for a strategic positioning of the port in Puttgarden in a central situation. The port of Puttgarden is located at the crossing of the Kiel-Baltic seaway and furthermore the “Vogelfluglinie” offers large prospects for the future. Co-operation with the existing ports in Kiel and Lübeck and in Rødby and Nakskov can arise to a competitive maritime business location. The international cooperation between the Port of Copenhagen and the Port of Malmö can serve as an example (however on a larger scale). Also the development of the transport facilities on road and rail along the upgraded motorway A1 and at the bridgeheads (logistics centres) represent extensive potentials.

However, it is very important to integrate the elements and chances of a cluster strategy in “logistics and transport” into the region’s integrated transport planning. The linkage of the regional and local area network is very important, since a pure transit function has negative consequences. Motorway exits, critical points of the high-speed net and the tuning with the regional traffic is of interest for the economy, tourism and the population equally.

During the construction phase, at least temporarily, there should be a substantial boom of the construction sector. It is necessary to be prepared in time for these possibilities and develop a strategy, which is suitable to derive benefits from construction phase (e.g. also accommodations for building workers)⁴⁶. A regional proportion of construction contracts is an important factor. For this European guidelines and possible compensations must be brought in agreement.

The construction of the fixed link is also an architectural monument that can be used effectively in terms of media presence and also as an object attracting tourism in itself.

Beside these rather short term effects, medium-term potentials consist of relocating more enterprises to the region, because the extended market chances (transparency, networks, and infrastructure improvement) offer substantial opportunities. Utilizing the cluster strategies in the sectors health care and logistics and transport, there are promising chances to relocate growth-orientated enterprises.

⁴⁶ A recent example is the Fehmarn Belt Forum report mapping the possible locations for construction sites and harbour facilities suited for the construction phase, Cowi (2004), *Konsulentundersøgelse, Havne i Storstrøms Amt*, for Fehmarn Belt Forum, December 2004.

Chapter 7 Summary of results and policy recommendations

In this final chapter we sum up the results from the SWOT analysis of the two regions. We analyse the similarities and differences of Kreis Ostholstein and Storstrøms Amt. This makes it possible to find the areas where the regions can support each other's strengths and reduce the weaknesses where there are differences. The analysis will be based on the specific opportunities and threats of the regions in order to deduct some policy areas for coordinated action.

7.1. Main SWOT results

Strengths

Kreis Ostholstein and Storstrøms Amt have some common strengths:

- Both regions have natural conditions that make them ideal for tourism. This has also allowed them to develop important competences within the tourist industry that could help in a further development process.
- With well-developed social welfare system, strength within health care and a prepared construction industry, the regions have specialised in industries which are less exposed to outsourcing.
- The primary sector is relatively important in both regions and this has led to competences within food production.
- There is a spirit of entrepreneurship in the regions which is crucial for the creation of the future employment.

Specific strengths for Storstrøms Amt:

- The region already has considerable exports and there is focus on the prospects of further export development.
- A relatively large part of the SME's are engaged in some sort of innovation activity.

Specific strengths for Kreis Ostholstein:

- Due to its geographical position, businesses within transport, logistics and water transport have a relatively strong position in the region and this has strengthened the competences within the industry.

Weaknesses

Kreis Ostholstein and Storstrøms Amt have some common weaknesses:

- Generally weak economic performance. The main reasons are the low labour market participation rates and the productivity problems. The last part is related to the low educational level and the relatively few specialists in the regions.
- The mixture of industries is not fortunate as there are low shares of growth industries in general and low proportions of ICT related and High-tech businesses in particular.
- There is a general lack of investments which leads to an innovation gap and a lack of future oriented activities.

Specific weaknesses for Storstrøms Amt:

- The relatively high proportion of export related income makes the region dependant on foreign markets and there may be problems with keeping the good position on exports as the region is weak on emerging markets. A probable cause could be the relatively few large companies as it is costly to explore new markets.
- Although Storstrøms Amt is doing well on the entrepreneurial spirit there seem to be problems with realising the ideas as there is a low level of actual entrepreneurs.

Specific weaknesses for Kreis Ostholstein:

- The level of export is relatively low which also indicates that the region is not strong in the businesses in the globalised economy.
- The tourist industry has problems with e.g. partially outdated infrastructure of leisure, below-average professionalism, advertising and marketing activities and un-optimal organisation structure for co-operation.

Opportunities

Kreis Ostholstein and Storstrøms Amt have some common opportunities:

- A fixed link will provide an opportunity during the construction phase to improve employment in the two regions. Subcontracts to local companies could also develop competences in the sector that will last longer than to the end of the construction phase.
- The increased accessibility to the regions will provide important opportunities within the tourist industry as it will be possible to attract new tourist groups. A fixed link will also make it possible for tourist to make day-trips to the other side of Fehmarn Belt and thereby the overall competitiveness of both regions improves. Furthermore, the strong position within the health care markets could be coupled with the tourist industry targeting special patient groups and the two regions supplement each other very well in this respect.
- The exporting business will get better conditions for their activities as the fixed link will make the markets come closer (measured in time, flexibility, transport costs etc.)
- Within transport and logistics there are unique possibilities for exploiting the improved infrastructure and position a competitive transport hub in the Fehmarn Belt regions. Most of the value-added in the transport sector lies within reloading.
- There may be prospects in co-operating between clusters in Storstrøms Amt and Kreis Ostholstein in order to intensify the cluster synergies. Relevant industries could for instance be medico-health, food production and windmills.

Threats

Kreis Ostholstein and Storstrøms Amt have some common threats:

- Within the tourist industry, transport and logistics and industries in general the fixed link will also increase competition. In the tourist industry, other destinations will also be more accessible due to the fixed link. Within transport and logistics the competition will increase from e.g. the distribution hub in Copenhagen which will also have an increased business range. Foreign companies will also have an increased accessibility to Storstrøms Amt and Kreis Ostholstein as a result of a fixed link. Thereby the local competition will increase.
- The probable increase in tourism will also increase the low utilisation and income volatility in the regions if these issues are not handled by e.g. targeting different tourist groups.
- Co-operation between clusters can improve the competitiveness of the companies in the regions but for both Storstrøms Amt and Kreis Ostholstein there is a threat that some firms could relocate to the other region in order to exploit the cluster synergies.

7.2. Common development potentials

The summary of the SWOT analysis points towards five common action fields:

1. Cluster analysis and strategy – in health care
2. Cluster analysis and strategy - transport and logistics
3. Development strategy for tourism
4. Using construction period – building boom
5. Attract companies; positioning of location

Cluster analysis and strategy – in health care

Both Storstrøms Amt and Kreis Ostholstein are especially predestined for a broad development in the health care market as there are customers (tourists from target group of seniors, regimen and health) as well as many suppliers. The latest scientific conclusions and the implementation of modern technology have changed the health care resort. For instance, the sector of medical technology has been influenced by a revolutionary change during the last couple of years. This has been caused by the development of components and methods in the areas of information technology, optics and biotechnology. But not only the permanent growing market for medical products is of importance for companies in the health care industry (e.g. technical aids are needed for disabled people in the field of rehabilitation). Products for job adjustment are demanded to improve mobility and complex individual solutions which range from a wheel chair to amputation appliance.

In Storstrøms Amt several health care firms are present, and some of them are even German subsidiaries. Other medico firms in Storstrøm are specialised in segments of the industry that are not present in Ostholstein or Schleswig-Holstein (e.g. Melitek on Falster producing special tubing for the health care industry and relying on the cluster in Storstrøms Amt on composite materials and plastics).

Kreis Ostholstein is also well equipped with pre-conditions and has the potential to develop a regional health care industry cluster. The existing companies in the region, the existing facilities in the health care sector, as well as the demographic development in the region are indicators and basic requirements for a successful positioning of a common health care industry in the Fehmarn Belt region.

Cluster analysis and strategy - transport and logistics

Similarly to the point “cluster analysis and strategy of the health care sector” the analysis of the strengths and opportunities showed that in the logistics and transport sector there is a large development potential. The “tri-modal” nature of the Fehmarn Belt region, at a crossroad of road, rail and sea transport, is already today visible in terms of competitive physical transport, but also in terms of transport related services.

A fixed Fehmarn Belt link provides a basis for a strategic positioning of the port in Puttgarden in a central situation. The port of Puttgarden is at the crossing of the Kiel-Baltic seaway and furthermore the “Vogelfluglinie” offers large prospects for the future. Co-operation with the existing ports in Kiel and Lübeck and in Rødby and Nakskov can arise to a competitive maritime business location. The international cooperation between the Port of Copenhagen and the Port of Malmö can serve as an example (however on a larger scale). Also the development of the transport facilities on road and rail along the upgraded motorway A1 and at the bridgeheads (logistics centres) represent large potentials.

However, it is very important to integrate the possibilities of a cluster strategy in “logistics and transport” into an integrated transport planning of the region. The linkage of the regional and local area network is very important, since a pure transit function has negative consequences. Motorway exits, critical points of the rail network and the tuning with the regional traffic is of interest for the economy, tourism and the population equally.

Common strategy for tourism

Tourism and the hotel and restaurant industry is the economic base for Ostholstein. Nevertheless it is necessary to develop the outstanding potentials steadily to keep today’s position in tourism. It is essential to take care of the customer’s demands and to include the market development.

A closed concept has to make a quotation history which is target group orientated. The concept has to answer and refer to the question on which main target groups should be addressed in the following years. The elderly, business people, guests who are interested in health care or nature, younger people, families etc. These groups can have the same interests but there can be very specific demands as well. A bridge will have effects on the tourism industry – but to develop a concept is a necessity independently if the bridge comes or not.

The elderly people target group is an important aspect for the development in Ostholstein. The expanding moving in of elderly people and the low fertility rate as well as the moving out of younger families causes an unbalanced proportion in the community in a long term perspective. The development of cities/towns and infrastructure as well as the financial situation of towns has to be discussed in connection with the phenomenon of demographic change. It would make sense to get into contact with other towns and districts to find proper solutions for this development.

By discussing the potentials and action fields it becomes clear that the aspects named above are connected with each other. Elderly people are the main customers of the health care and tourism industry. And they also take an essential part in the discussion of the demographic change.

The development of the German-Danish co-operation can reveal synergies and open new markets. Co-operation and networks can exist on the society level. The keyword is Regional Governance, in which for example the Fehmarn Belt Forum continues to intensify their work and cooperation. On the other hand there are economic networks for the development of the region. Efficiency, new markets and know-how transfer are only some examples of the use of those networks.

The protection and conservation of the natural resources is essential for both Storstrøms Amt and Kreis Ostholstein.

The environment and the natural resources form the basis of the tourism industry and the high living quality for the population. This image has to be secured on a long-term basis, since otherwise the basis for guests and inhabitants will be undermined. The environmental impacts and possible mitigating measures will be dealt with in the Environmental Impact Assessment (EIA) of the fixed link across the Fehmarn Belt.

Using construction period – building boom

During the construction phase, at least temporarily, there should be a substantial boom of the construction sector. It is necessary to be prepared in time for these possibilities and develop a strategy, which is suitable to derive benefits from the construction phase (e.g. also accommodations for building workers)⁴⁷. A regional share of construction orders is an important factor.

The construction of the fixed link is also an architectural monument that can be used effectively in terms of media presence and also as an object attracting tourism in it self.

⁴⁷ A recent example is the Fehmarn Belt Forum report mapping the possible locations for construction sites and harbour facilities suited for the construction phase, Cowi (2004), *Konsulentundersøgelse, Havne i Storstrøms Amt*, for Fehmarn Belt Forum, December 2004.

7.3. Actions

Based on the analysis of existing reports/surveys, the workshops in the two regions and the analysis of Prognos and Copenhagen Economics, it is suggested to assure that the following essential steps are properly planned and implemented:

1. All upcoming tasks have to be conceived and handled by both regions as a single unit.
2. The capacity of the whole region will only be exploited in an optimal way provided both partners agree on one common strategy with regard to realizing the future tasks. For this the following tasks are to be implemented:
 - Consolidation and institutionalization of the information exchange between relevant players on regional, federal and national level
 - Formulation of a regional development strategy
 - Formulation of an infrastructural development plan
 - Amplification of the cross-border collaboration with the long-term goal to implement one common Fehmarn Belt Region.
3. It is of particular importance that all open questions are answered promptly in order to conclude the decision-making process in due course and thus to attain planning reliability.
4. From the consultant's point of view it would be advisable to reactivate the Fehmarn-Belt-Forum, whereby the moderation should be held by an external organization due to the contrary positions of the regional representatives. This is vitally important in order to encourage the process of coalescence of the regions Storstrøms Amt and Kreis Ostholstein.
5. Assure that the two regions are prepared for the final decision of a fixed Fehmarn Belt link. Without proper preparation the danger is that the potential chances are only inadequately used if it is decided to construct a fixed link. Thus a concrete plan should be developed so that following a decision about a fixed Fehmarn Belt link, urgent procedures can be implemented. This includes among others the prearrangement of cooperation bodies, communication platforms, marketing concepts, identification of necessary qualification procedures or e.g. the clarification how regional firms can be involved who profit from the construction.

Appendix 1 Socio-economic description of Storstrøms Amt

The socio-economic description of Storstrøms Amt compares the region with the nation-wide conditions. The socio-economic description covers the areas of interest as described in the project description of the Danish Ministry of Transport from 10 September 2004.

This includes a comparison with the respective national benchmark of:

Population

- Number of inhabitants
- Increase/decrease in population, including forecasts for the population
- Age distribution
- Education
- Occupation and rate of unemployment
- Level of commuting.

Business and industry:

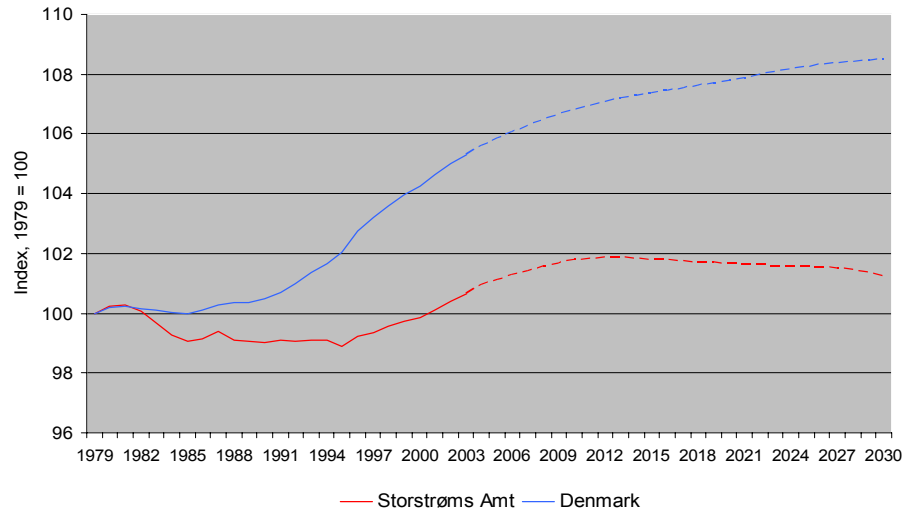
- Lines of business
- Company sizes
- Establishment of new companies and the growth of new companies (and possibly rate of success)
- Financial conditions, e.g. profit ratio
- Tourist data: country of origin of the tourists, types of tourists (and to the extent that the regions or other organisations will supply the data free of charge we include: period of stay and share of regular tourists)

Moreover, an examination of importance of international trade in Storstrøms Amt has been carried out using international trade statistics broken down to the regional level.

Development of the population in Storstrøms Amt

Figure 1 shows the increase in the number of inhabitants in Storstrøms Amt and in Denmark using an index table. In the first 10-15 years, until the mid-nineties, the number of inhabitants decreased in Storstrøms Amt while it increased nationally. Beginning in the mid-nineties the population in Storstrøms Amt began to increase. In the same way, the national population will rise rapidly from the beginning of the nineties to around 2010, when the rise will slow down.

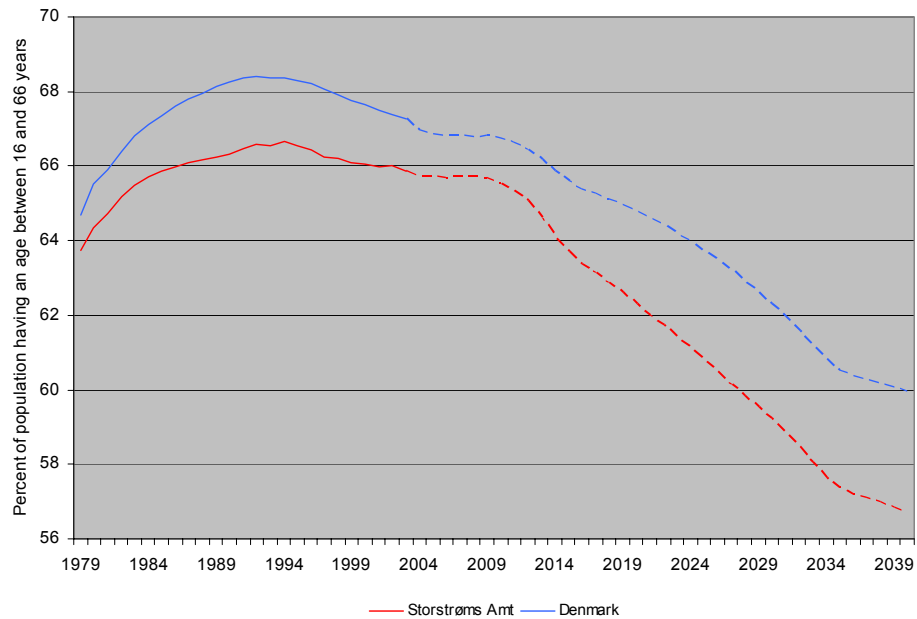
In the same years the national population will slowly begin to converge. In 2030 the forecast says there will be a large difference in the development of the number of inhabitants.

Figure 1 Development in number of inhabitants in Storstrøms Amt and Denmark, 1979-2030

Source: Statistics Denmark
 Note: Forecast from 2003

Figure 2 shows the part of the population in Storstrøms Amt and Denmark being 16-66 years old. Generally a larger part of the population in Denmark is between 16 and 66 years old than in Storstrøms Amt even though the two curves follow the same pattern: From 1979 and up to the early nineties the numbers rose, during the mid-nineties it was stable and since the late nineties it has been falling dramatically: In 1979 64 percent of the population in Storstrøms Amt was in the age 16-66 and the corresponding figure nationally was 65 percent. In 2040 the forecast says the shares will be 56 and 59 percent. The drop in the population share being 16-66 years old is bigger in Storstrøms Amt than nationwide, thus, the gap is getting bigger.

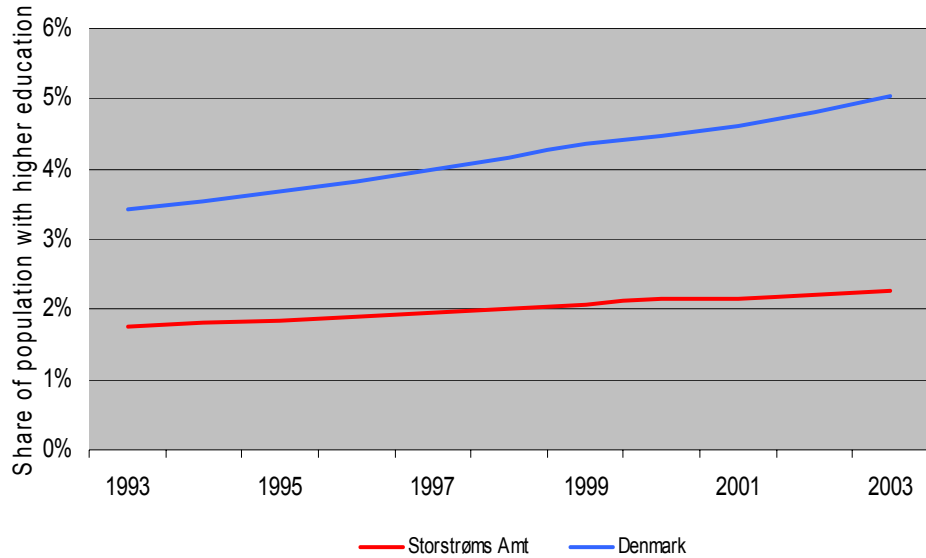
Figure 2 Age distribution in Storstrøms Amt and Denmark, 1979-2040



Source: Statistics Denmark
 Note: Forecast from 2003

Figure 3 shows the share of the population with higher education for the years 1993-2003. In general it can be concluded that the share of people with higher education is significantly lower than the national level in Storstrøms Amt. More specific it can be stated that the high educated share of population is increasing both in Storstrøms Amt and nationwide, but the share of the population with a higher education is growing faster for Denmark as a whole than for Storstrøms Amt. Thus the gap in education is getting bigger.

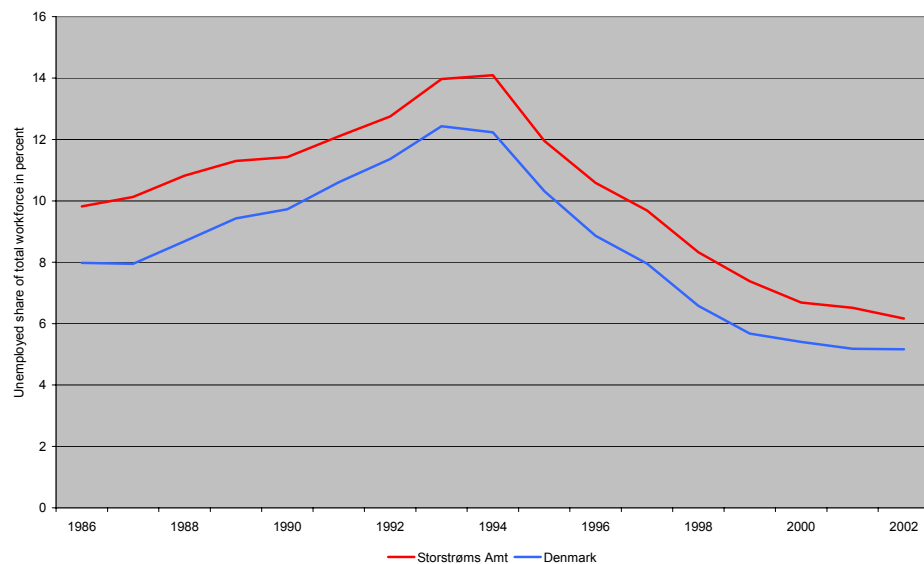
Figure 3 Share of population with higher education in Storstrøms Amt and Denmark, 1993-2003



Source: Statistics Denmark

Figure 4 shows the number of unemployed as a share of the total workforce for Storstrøms Amt and Denmark for the years 1986-2002. The unemployed share of workforce in Storstrøms Amt is in general higher than in Denmark, but follows the national trend with only two aberrations. In 1994 a sharper decline of unemployed as a share of the total workforce can be detected at a national level than in Storstrøms Amt and after 2001 the difference in the number of unemployed seems to decrease further.

Figure 4 Unemployed share of total workforce in Storstrøms Amt and Denmark, 1986-2003

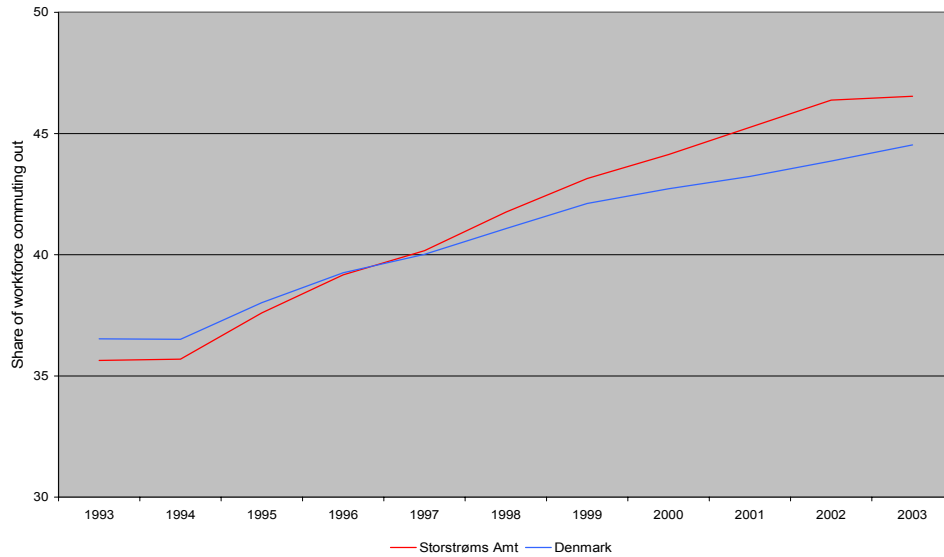


Source: Statistics Denmark

Figure 5 shows the number of commuters as a share of the total workforce in Denmark and Storstrøms Amt for the years 1993-2003. Here it is shown that, when looking at the number of

commuters as a share of the total workforce, the difference is negligible. In both Storstrøms Amt and Denmark the percentage of commuters is steadily increasing. However, in 1997 the percentage of commuters in Storstrøms Amt has overtaken that of Denmark as a whole and the increase in the county is larger annually.

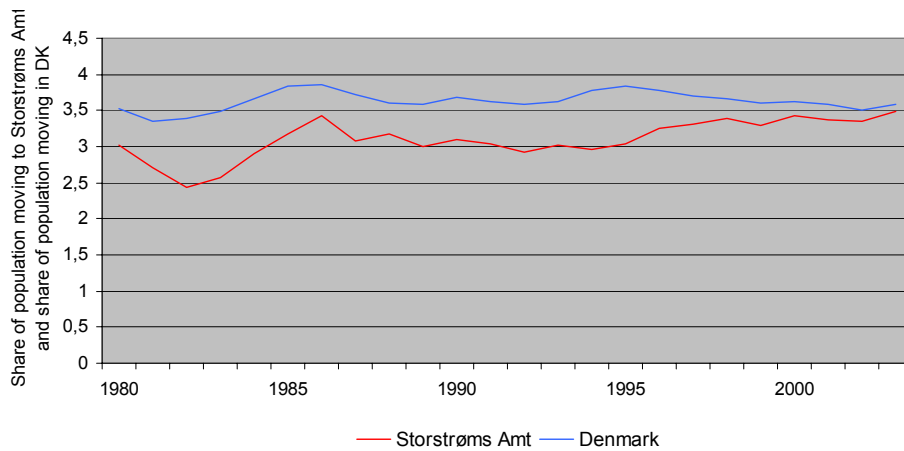
Figure 5 Share of total workforce commuting out of Storstrøms Amt compared with the nationwide conditions in Denmark, 1993-2003



Source: Statistics Denmark

Figure 6 shows the shares of population moving to Storstrøms Amt and moving in Denmark from 1980 to 2003. Generally the share of population moving nationwide is bigger than in Storstrøms Amt, but during the years the gap is getting smaller. The share of the national population moving is quite stable spanning from 3.5 to 4 while the immigration to Storstrøms Amt slowly is getting bigger.

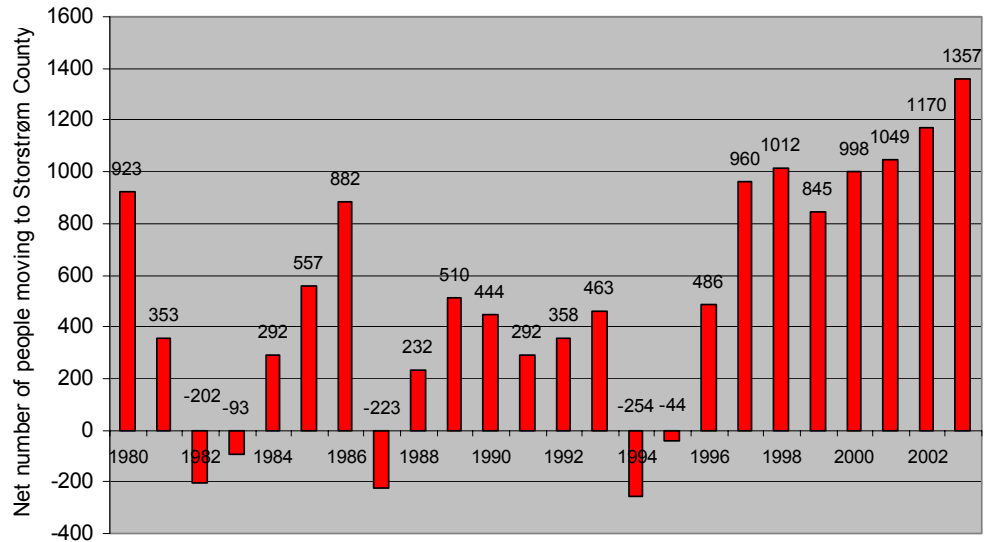
Figure 6 Share of population moving to Storstrøms Amt and moving in Denmark, 1980-2003



Source: Statistics Denmark

Figure 7 shows the net number of inhabitants that are moving to Storstrøms Amt for the years 1980-2002 as percentage of the population. The number of people moving to Storstrøms Amt has been larger than the number of inhabitants leaving the county except only a few years. After 1995 the difference between migrations and removals has become considerable with a larger number of people moving to the county. In other words, there are a growing number of people moving to Storstrøms Amt.

Figure 7 Net number of people moving to Storstrøms Amt, 1980-2003

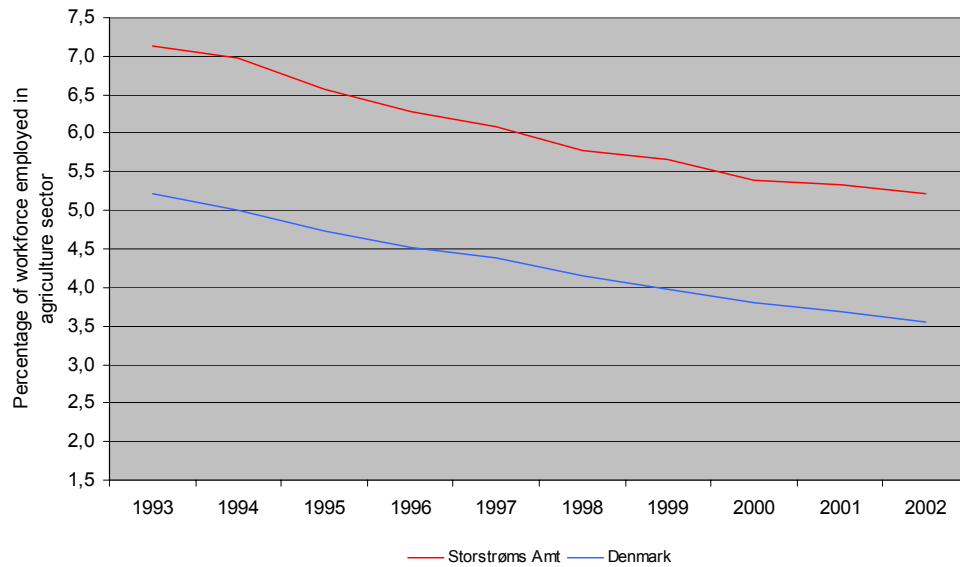


Source: Statistics Denmark

Development in business and industry in Storstrøms Amt

The following Figures 8, 9 and 10 show the number of persons employed in the three main sectors: Agriculture, Manufacturing and Service. It shows both public and private employed persons in the three main sectors.

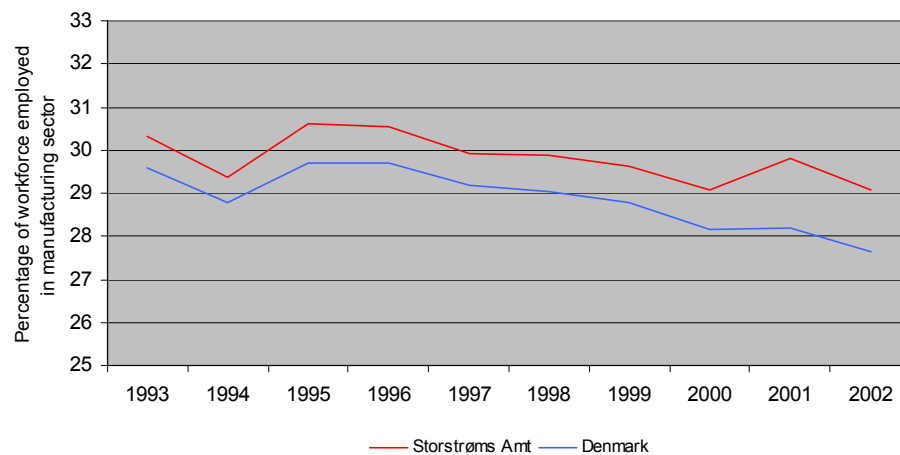
Figure 8 Percentage of workforce employed in agriculture sector in Storstrøms Amt and in Denmark, 1993-2002



Source: Statistics Denmark

In Figure 8 the percentage of people working in the agriculture sector in Storstrøms Amt and in Denmark are shown. It displays that the portion of people employed in agriculture is higher in Storstrøms Amt than in Denmark as a whole. Both numbers are falling throughout the years; from 7 percent to above 5.5 percent in Storstrøms Amt and from above 5 to 3.5 percent nationally.

Figure 9 Percentage of workforce employed in the manufacturing sector in Storstrøms Amt and in Denmark, 1993-2002

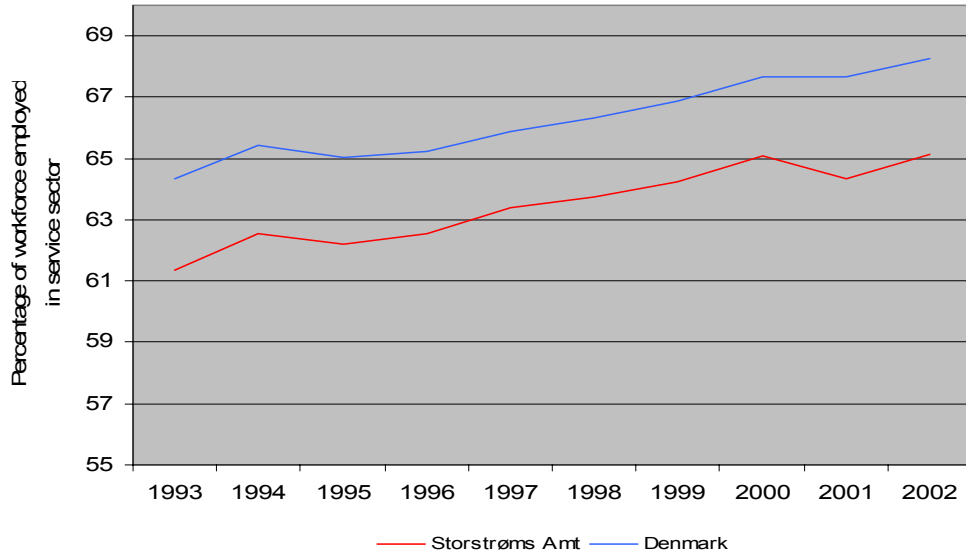


Source: Statistics Denmark

Figure 9 shows the percentage of the population working in the manufacturing sector in Denmark and in Storstrøms Amt. More people are employed in the manufacturing sector in Storstrøms Amt than nationally. The general economic development is reflected where more

people are employed in the service sector and fewer in the manufacturing sector. Looked upon from 1993 to 2002, the drop has been smaller in Storstrøms Amt than nationally though.

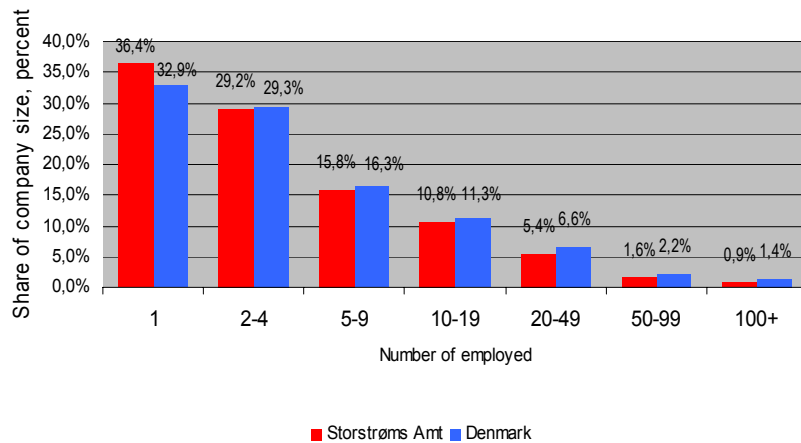
Figure 10 Percentage of workforce employed in service sector in Storstrøms Amt and in Denmark, 1993-2002



Source: Statistics Denmark

Figure 10 displays the percentage of people employed in the service sector in Storstrøms Amt and nationwide. Nationwide the numbers are larger than in Storstrøms Amt but both numbers are rising significantly: Nationally from just below 65 to 68 percent and from 61 to more than 65 percent in Storstrøms Amt. Thus the gap between them is just about the same throughout the years – approximately 4 percent.

Figure 11 Company sizes in Storstrøms Amt and in Denmark, 2002



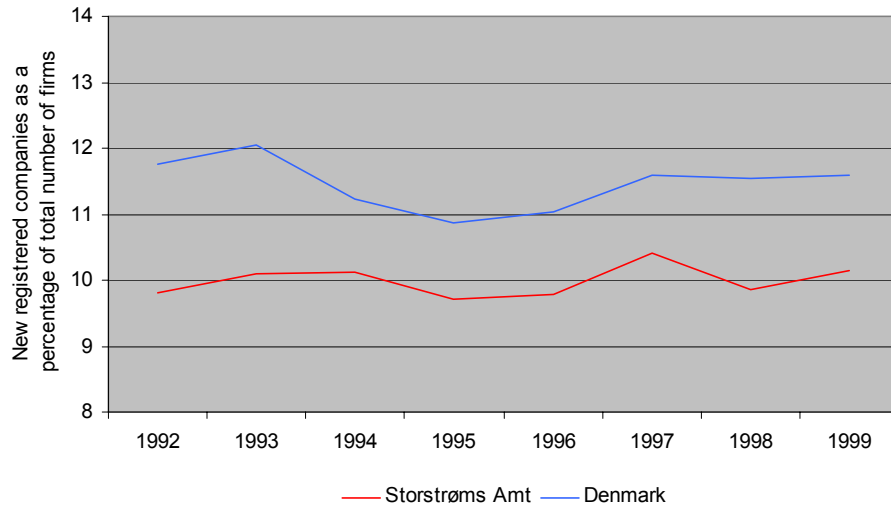
Source: Statistics Denmark

Figure 11 shows the size of companies in Denmark as a whole and in Storstrøms Amt. It displays that most companies – about two third of every company – are small with 1-4 employed. Between one fourth and one third of the companies have 5-19 employed and

approximately 10 percent have 20 or more employed. The shares of companies with 1-9 employees are as high as 80 percent.

The numbers nationwide and in Storstrøms Amt are almost alike, except for a minor difference in one-man companies, where the share of stock is bigger in Storstrøms Amt than nationwide.

Figure 12 New registered companies as a percentage of total number of firms in Storstrøms Amt and in Denmark, 1992-1999

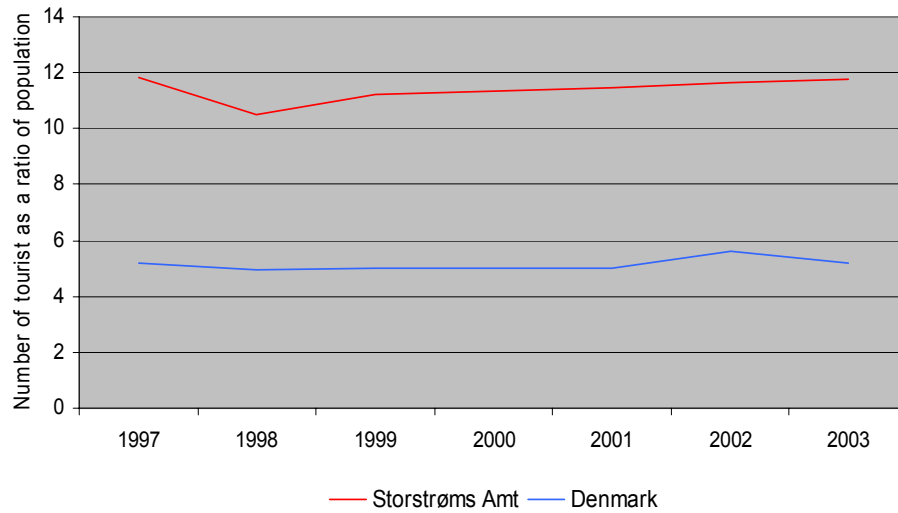


Source: Statistics Denmark

Note to Figure 12: Stat bank Denmark does not have figures newer than 1999 in this indicator.

Figure 12 shows the number of new registered companies as a percentage of the total number of companies in Storstrøms Amt and Denmark in the years of 1992-1999. The level of newly established companies in Storstrøms Amt is lower than nationwide. The number is somewhat stable over the years and the local and national numbers varies somehow alike with a decrease in the mid-nineties.

Figure 13 Number of tourists as ratio of population in Storstrøms Amt and in Denmark, 1997-2003

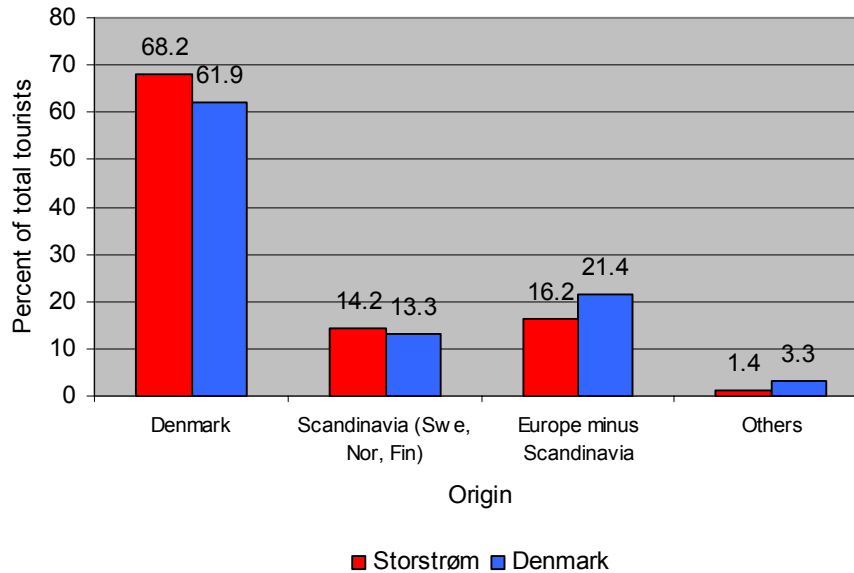


Source: Statistics Denmark

Note to Figure 13: Number of tourists defined as number of nights spent (hotels, youth hostels, camping sites and pleasure boats).

Figure 13 shows the development in the number of tourists in Denmark and Storstrøms Amt as a percentage of the population in the period 1997-2003. In this period the number of tourists is quite stable: Nationwide approximately 5 tourists per inhabitant and 10-12 tourists per inhabitant in Storstrøms Amt. In other words there are two times more tourists in Storstrøms Amt as in Denmark as a whole – when compared to the number of inhabitants.

Figur 14: Country origin of tourists in Storstrøms Amt and in Denmark in 2003

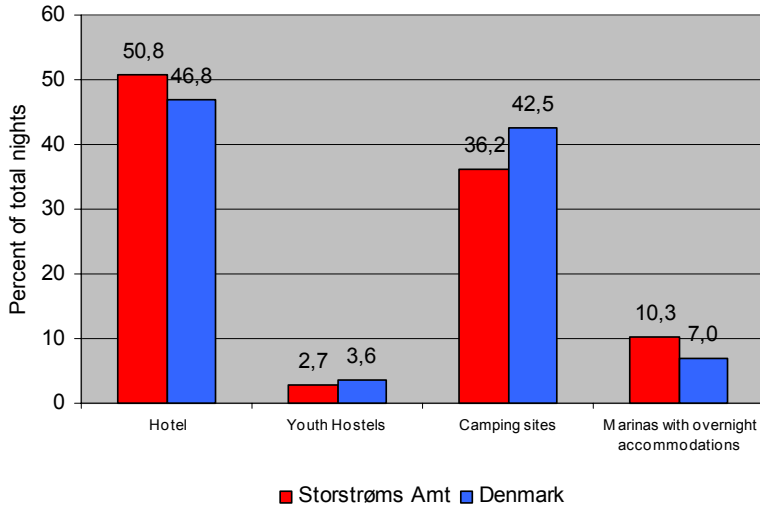


Source: Statistics Denmark

The distribution of tourists in Storstrøms Amt is compared to the rest of the country in Figure 14 and Figure 15. Storstrøms Amt has a relative greater share of Danish and Scandinavian

tourists. Especially the Danish tourists are contributing to the large number of tourists in Storstrøms Amt. The shares of tourists from non-Scandinavian Europe and the rest of the world are lower in Storstrøms Amt than in Denmark.

Figure 15: Types of tourism in Storstrøms Amt and in Denmark in 2003

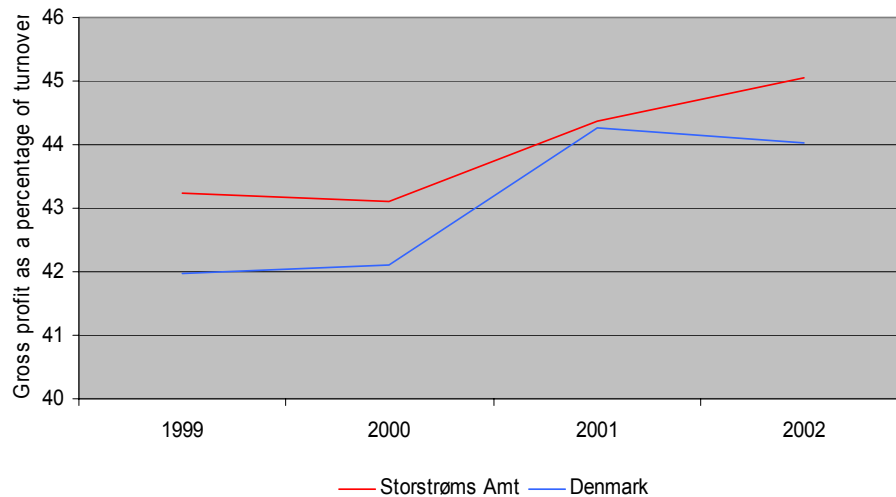


Source: Statistics Denmark

Storstrøms Amt has a larger share of hotel nights and nights in Marina accommodations than nationwide in Denmark while the nights on camping sites and youth hostels have a larger share of the total nights.

Figure 16 and 17 show gross profit for companies in Storstrøms Amt and nationwide: At first gross profit over time and secondly broken down on various sectors.

Figure 16 Gross profit percentages in Storstrøms Amt and in Denmark, 1999-2002

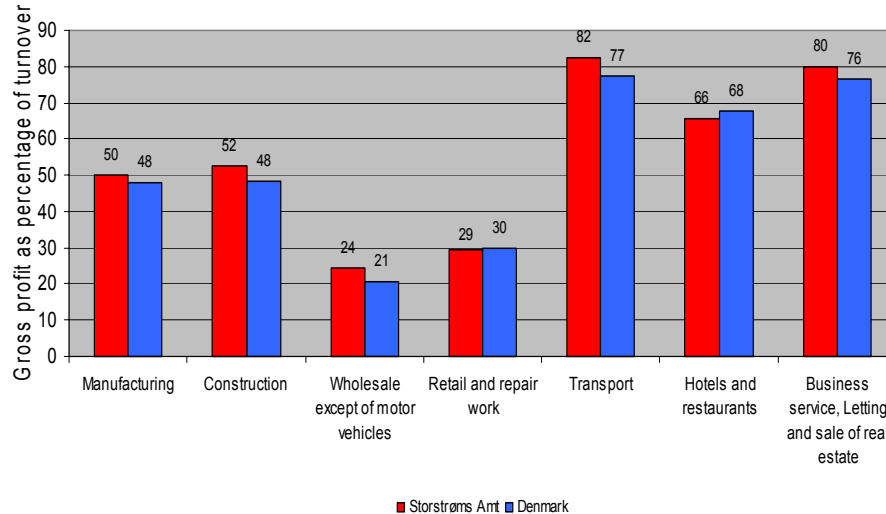


Source: Statistics Denmark

Note to Figure 16: Gross profit = Net sales minus the cost of goods or services sold and before payment of taxes and operating expenses.

Figure 16 displays companies' gross profit in Storstrøms Amt and nationwide over time. The profit is calculated as gross profit as a percentage of turnovers. From 1999 to 2002 the profit has risen both nationwide and in Storstrøms Amt, but the increase is less stable nationwide than in Storstrøms Amt.

Figure 17 Gross profit as percentage of turnover in Storstrøms Amt and in Denmark, 2002 in different sectors



Source: Statistics Denmark

Note to Figure 17: Gross profit = Net sales minus the cost of goods or services sold and before payment of taxes and operating expenses.

Figure 17 shows the gross profit (calculated as percentage of turnovers) in various sectors in Storstrøms Amt and nationally in 2002. Generally speaking, the profits are quite alike – in some sectors (Manufacturing, Construction, Wholesale, Transport, and Business services) the profits in Storstrøms Amt are higher and in some (Retail and Hotels and restaurants) the profits are higher nationally.

Foreign trade in Storstrøms Amt

Storstrøms Amt is exporting a larger share of total turnover than the average of Danish counties. The export index, measured as exports/turnover relative to the national average export/turnover, is 133. This means that Storstrøms Amt exports 33 percent more than the average Danish region per unit of output produced in the region.

Table 1 Export index 2001 (average Danish export = 100)

County	Importance of exports (DK =100)
Ringkøbing	182
Viborg	169
Bornholm	156
Ribe	147
Nordjylland	133
Storstrøm	133
Fyn	130
Frederiksborg	128
Sønderjylland	124
Roskilde	122
Århus	116
Frederiksberg	114
Vejle	99
Vestsjælland	87
Københavns amt	79
Københavns kommune	48
Denmark	100

Source: Statistics Denmark

The region is more focused on the traditional export markets, Western Europe and Northern America than the average Danish export. The region is less well represented in emerging markets than the Danish export in general. Even the relative position of Eastern Europe is lower in Storstrøms Amt than in general.

Table 2 Composition of export on main trading partners, 2001

Trading partner	Storstrøm	Denmark
EU-15	66%	63%
North America	21%	9%
Rest of Europe	5%	10%
Rest of the World	3%	8%
EU-10	2%	4%
China	1%	1%
Japan	1%	4%
ASEAN	0%	1%
Total	100%	100%

Source: Statistics Denmark

It should be noted that the information on international trade refers to the registered companies in the region, and will thereby underestimate the trade volume, and possibly be biased in the composition of trading partners.

Appendix 2 Socio-economic description of Kreis Ostholstein

The socio-economic description of Kreis Ostholstein compares the region with the nation-wide conditions for Germany, and where feasible with Schleswig-Holstein. The socio-economic description covers the following areas of interest including a comparison with the respective national benchmark of:

Population

- Number of inhabitants, increase/decrease in population including forecasts for the population
- Age distribution
- Education
- Occupation and rate of unemployment
- Level of commuting

Business and industry

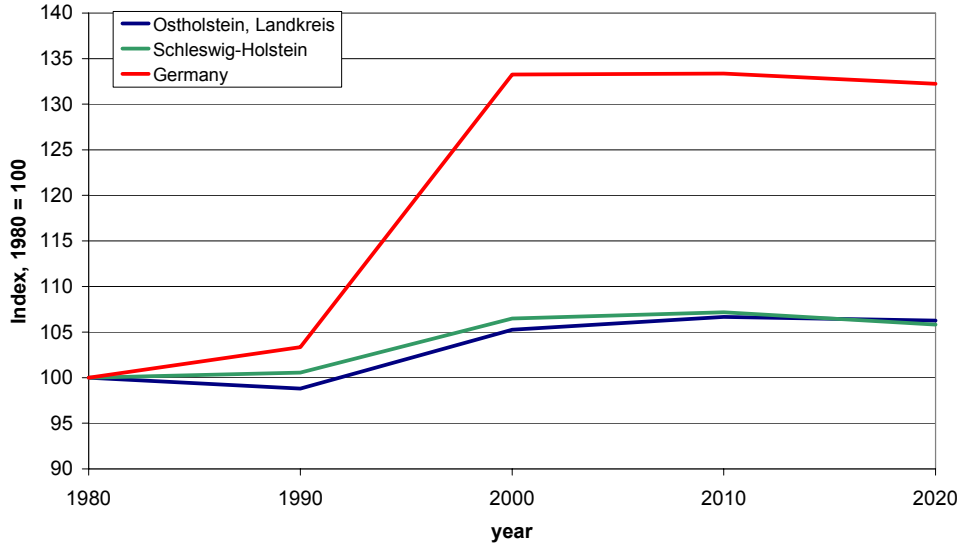
- Lines of business
- Company sizes
- Organisational position, i.e. head quarter, subsidiary, branch office etc.
- Activities performed by the companies are not included, cf. the TOR. It includes a description of what the companies are in charge of, e.g. R&D, manufacturing, warehousing, sale etc.
- Establishment of new companies and the growth of new companies (and possibly rate of success)
- Tourist data: country of origin of the tourists, type of tourists (and to the extent that the regions or other organisations will supply the data free of charge we include: period of stay and share of regular tourists)
- Magnitude of research and other knowledge-based institutions
- Financial conditions, e.g. profit ratio.

Development of the population in Kreis Ostholstein

The following figure deals with the development of the population in Kreis Ostholstein compared to the conditions in Germany and Schleswig-Holstein. Data regarding the development of population in the past and future have been analyzed and displayed in charts

as well as features concerning the educational status, the development of unemployment rate and mobility of people.

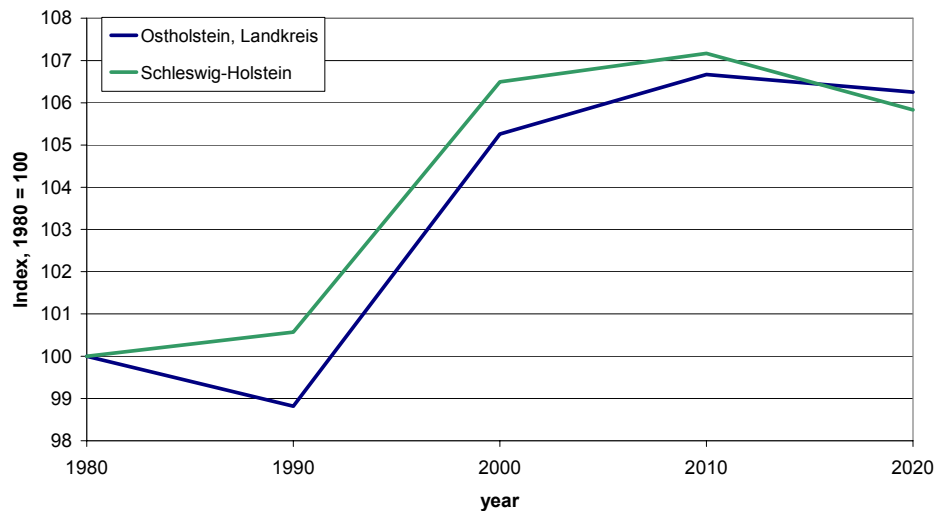
Figure 1 Development in number of inhabitants in Kreis Ostholstein, Schleswig-Holstein and Germany, 1980-2020



Source: BBR Inkar Pro & Statistisches Amt für Hamburg und Schleswig-Holstein

Figure 1 shows the increase in the number of inhabitants in Kreis Ostholstein, Schleswig-Holstein and Germany using an index table. Noticeable in national context is 1990, where a high increase can be registered which was due to the German reunification. The forecast for all three levels predicts a slow decline of the population until the year 2020.

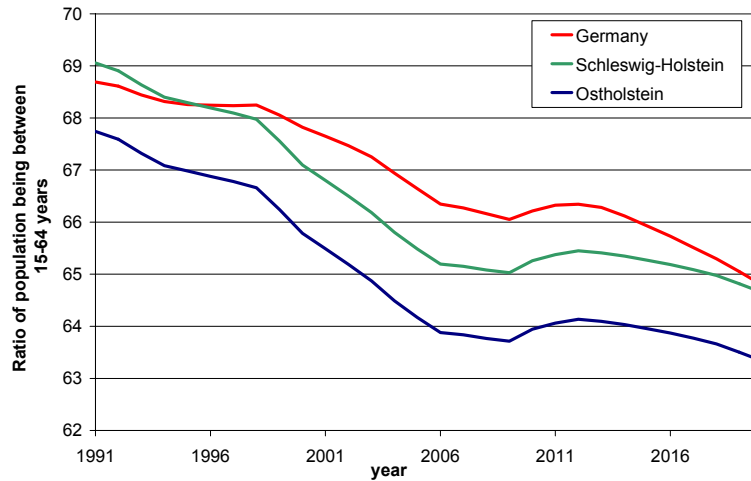
Figure 2 Development in number of inhabitants in Kreis Ostholstein and Schleswig-Holstein, 1980-2020



Source: BBR Inkar Pro & Statistisches Amt für Hamburg und Schleswig-Holstein

Figure 2 illustrates the development in number of inhabitants in Kreis Ostholstein and Schleswig-Holstein in the period 1980-2020. The course of the graphs is nearly parallel except for two time periods: During the first ten years the development in Kreis Ostholstein is obviously worse than in Schleswig-Holstein. This issue reverses between 2010 and 2020 as Kreis Ostholstein shows indeed a decline but has a higher number of inhabitants in 2020 for the first time in the observed time period.

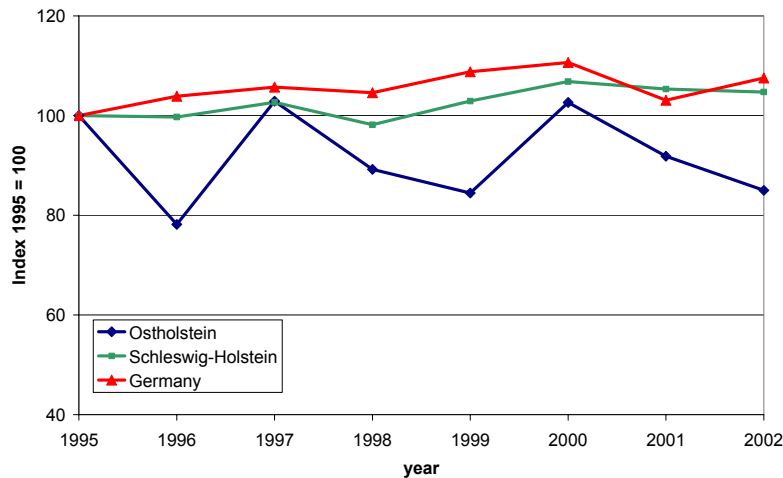
Figure 3 Age distribution in Kreis Ostholstein, Schleswig-Holstein and Germany, 1991-2020



Source: GENESIS

Figure 3 represents the part of population in Kreis Ostholstein, Schleswig-Holstein and Germany being 15 to 64 years old. The development is characterized by a general decline. Moreover the chart shows that the share of population being between 15 and 64 in Kreis Ostholstein is smaller than in Germany and Schleswig-Holstein.

Figure 4 Share of population with higher education* in Kreis Ostholstein, Schleswig-Holstein and Germany

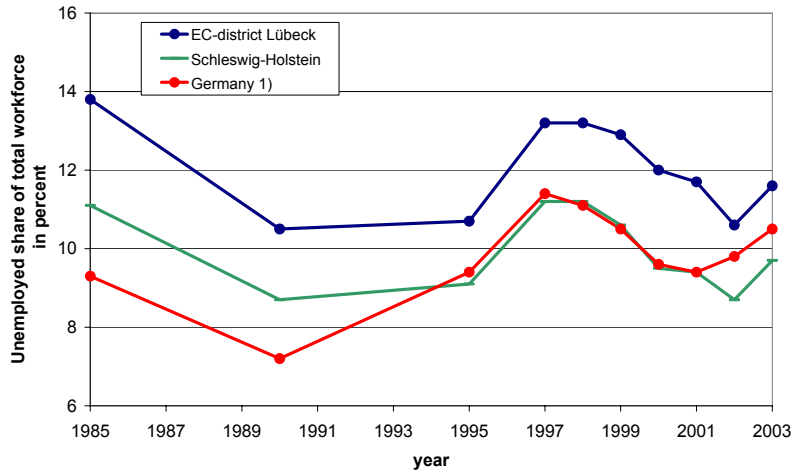


*people with high-school degree
Source: Genesis

Figure 4 puts focus on the share of population with higher education using an index table. It can be seen that the development in Kreis Ostholstein is pretty variable. But in general the

share of people having a high-school degree is lower than in Germany and Schleswig-Holstein. Especially year 2001 is notable, where the number of people with higher education is shrinking from 92% to 85% in Kreis Ostholstein, while the share in national context is growing. This gap in education is getting even bigger.

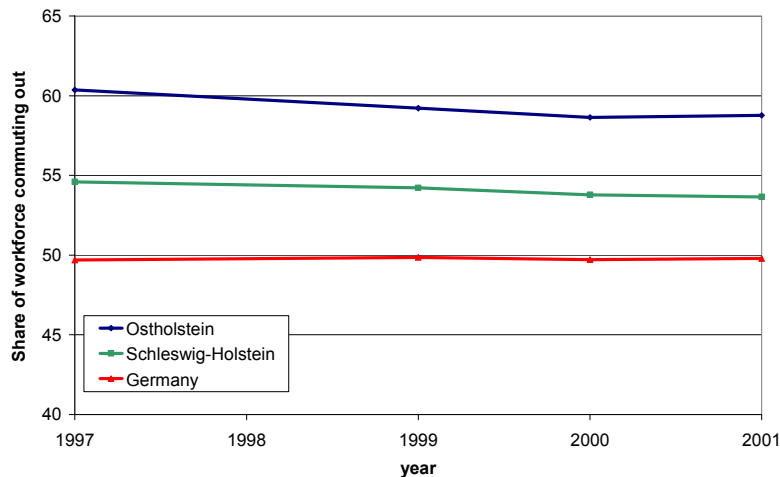
Figure 5 Unemployed share of total workforce in the employment Kreis Lübeck/Kreis Ostholstein (EC-district Lübeck), Schleswig-Holstein and Germany, 1985-2003



Source: Statistisches Amt für Hamburg und Schleswig-Holstein

Figure 5 shows the number of unemployed as a share of the total workforce for the employment in Kreis Lübeck/Kreis Ostholstein (is equivalent to the Employment-Center-District Lübeck; corresponding data only for Kreis Ostholstein is not available), Schleswig-Holstein and Germany. In general it can be said that the unemployment rate on all three levels develops relatively parallel. Whereas the second term of 1980ies were characterised by a decrease, an increase took place in the beginning of the 1990ies, followed by another fall until 2001. In comparison to Germany and Schleswig-Holstein the unemployed share is higher. Due to the German unification the rise of the unemployment rate on national level is stronger than in Kreis Ostholstein or Schleswig-Holstein since 1990.

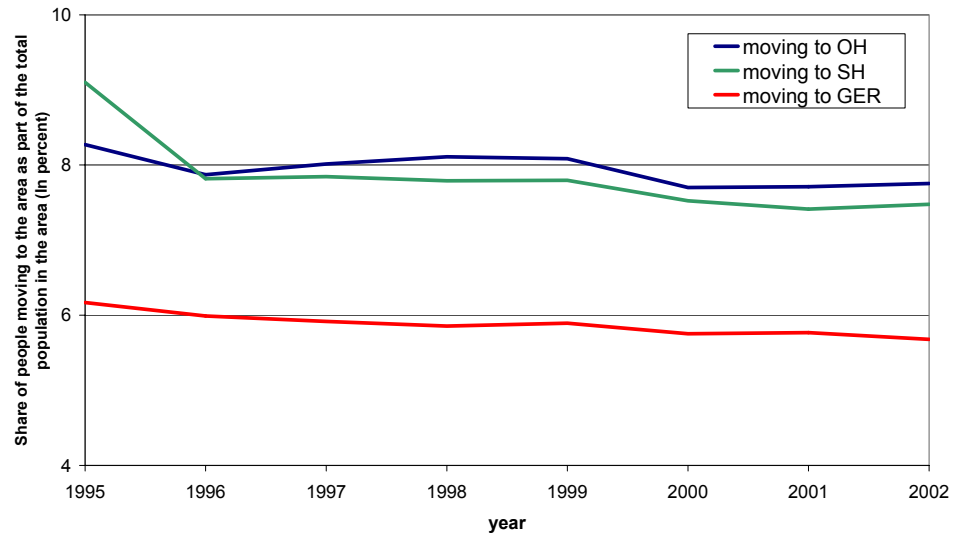
Figure 6 Share of total workforce commuting out, in Kreis Ostholstein, Schleswig-Holstein and Germany, 1997-2001



Source: Inkar 1999-2003

Figure 6 describes the number of people who commute out as share of all employed. The development did not change much during the analyzed period. But generally it can be stated that the share of people who commute out is highest in Kreis Ostholstein. Nation-wide the share of people commuting out is nearly identical to the share of people commuting in whereas in Ostholstein the share of the employed commuting out is much higher than the share of the employed commuting in.

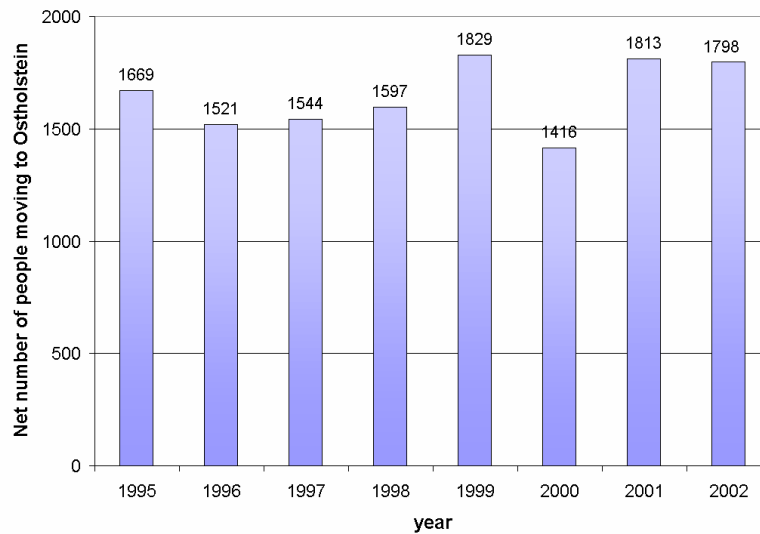
Figure 7 Share of population moving to Kreis Ostholstein, Schleswig-Holstein and Germany, 1995-2002



Source: Genesis

Figure 7 shows the number of persons moving to Kreis Ostholstein, Schleswig-Holstein and Germany as share of the total population. Except for the mid-1990ies the share of moving people developed widely parallel on all three levels. During the last years the share has been relatively steady. Moreover, the chart shows that the share for Kreis Ostholstein is slightly higher than for Schleswig-Holstein and much higher than the nation-wide share.

Figure 8 Net number of people moving to Kreis Ostholstein, 1995-2002



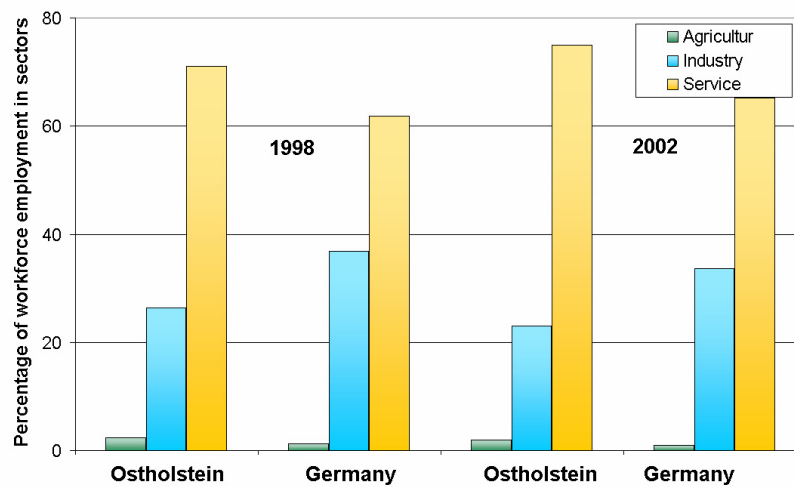
Source: Genesis

Figure 8 presents the net number of people (is equivalent to the balance of moving-ins and moving-outs) who have moved to Kreis Ostholstein between 1995 and 2002. During this period the number of people moving to Kreis Ostholstein was considerably larger than the number of people leaving the region.

Development in business and industry in Kreis Ostholstein

The following sections focus on the development in business and industry in Kreis Ostholstein compared to the conditions in Germany and Schleswig-Holstein. Data regarding workforce have been analyzed and displayed in charts as well as features concerning the development of companies, tourism, gross value added and export.

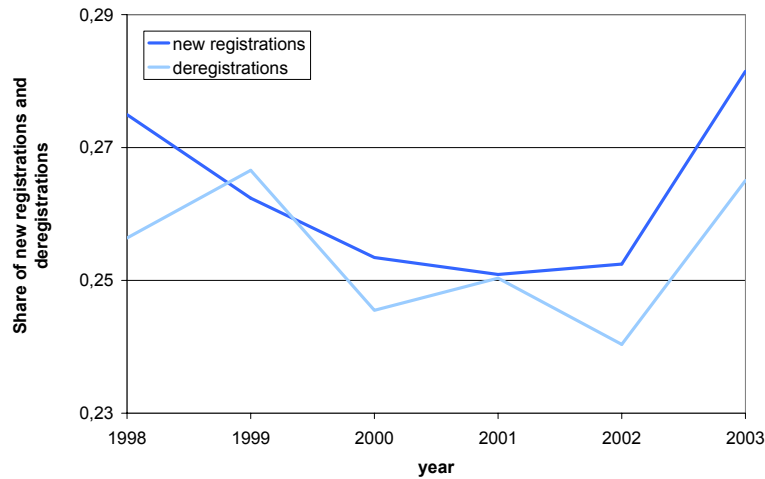
Figure 9 Percentage of workforce employed in the three main sectors in Kreis Ostholstein and Germany, 1998 and 2002



Source: Landesarbeitsamt Nord & GENESIS

Figure 9 compares the percentage of people in Kreis Ostholstein working in the three main sectors agriculture, manufacturing and service to the nation-wide conditions in Germany. It can be noticed that on the national level more people work in the industry sector than in Ostholstein. Besides on both levels the percentage of workforce employment in the industry sector decreased since 1998. The service sector in Kreis Ostholstein gains a higher percentage in comparison to Germany. Furthermore, the share of people working in agriculture is nearly twice as high as in Germany.

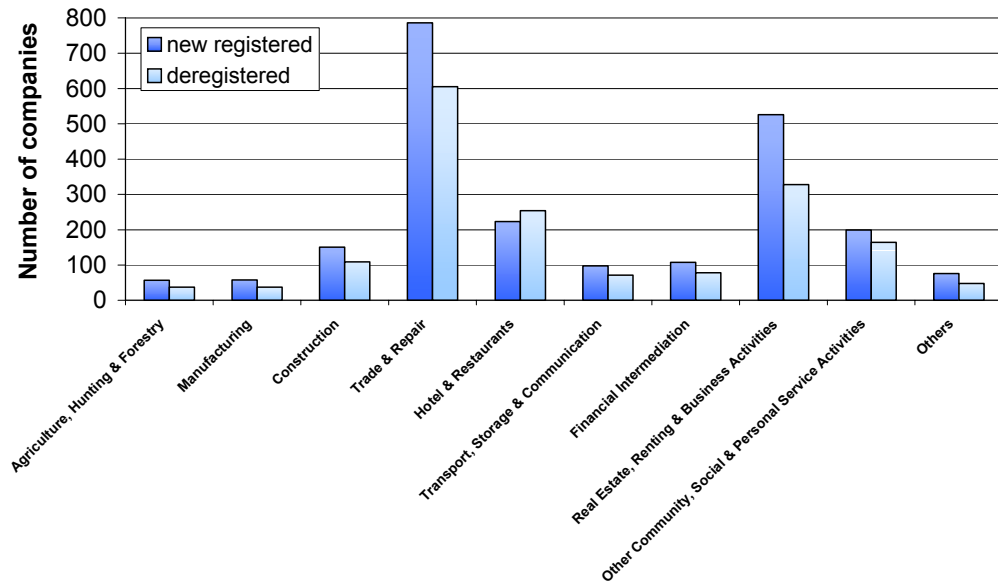
Figure 10 Share of new registered and deregistered companies in Kreis Ostholstein as percentage of new registrations and deregistrations in Germany, 1998-2003



Source: Statistisches Amt für Hamburg und Schleswig-Holstein

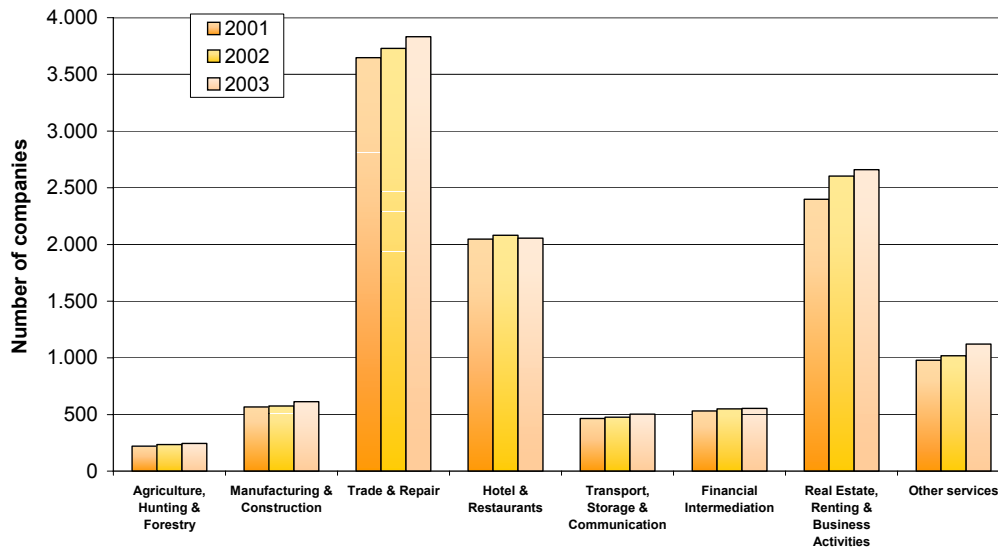
Figure 10 displays the number of new registered and deregistered companies in Ostholstein as percentage of all nation-wide company registrations and deregistrations. It is notable that the share of new registrations was almost higher than the share of deregistrations. Also it can be seen that the percentage of new registered companies dropped in the late 1990ies whereas it increased since 2001. The development of the share of deregistered companies proceeded nearly parallel.

Figure 11 New registered and deregistered companies in different branches in Kreis Ostholstein, 2003



Source: Statistisches Amt für Hamburg und Schleswig-Holstein

Figure 11 illustrates the number of new registered and deregistered companies in different branches. In Kreis Ostholstein most of the new registrations were in “Trade & Repair”, the fewest were in Manufacturing and Agriculture, Hunting & Forestry. Furthermore, it is striking that the sector “Hotel & Restaurants” has more deregistrations than new registrations in 2003. “Real Estate, Renting & Business Activities” has the biggest difference between new registered and deregistered companies.

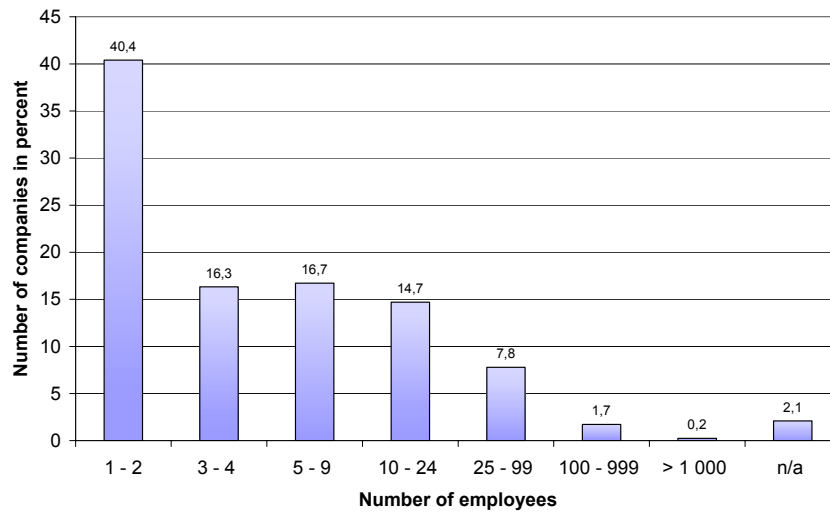
Figure 12 Number of companies in branches in Kreis Ostholstein, 2001-2003

Source: IHK Lübeck

The number of companies in branches and its development from 2001 to 2003 in Kreis Ostholstein is displayed in Figure 12. With more than 3,500 companies the sector “Trade & Repair” dominates in front of “Hotel & Restaurants” and “Real Estate, Renting & Business Activities”. Within all branches the services (Real Estate, Renting & Business Activities and Other Services) show the most dynamic development (+ 11 % respectively + 14 %). The number of companies in the sector Hotel & Restaurants which is very important for Kreis Ostholstein remained static during 2001 and 2003.

The just mentioned figures underline the importance of entrepreneurial activities in Kreis Ostholstein. The entrepreneurial activity is a relevant indicator in terms of job opportunities and new growth processes. There are high self-employment rates in trade, tourism and real estate activities. These are all sectors in which the future for individual firms is often uncertain and not associated with growth sectors. Thus, self-employment is not necessarily an indicator of new economic growth associated with the ability to and activity of creating new jobs. Nevertheless, municipalities continuously need new businesses to provide long-term location development and create future-oriented employment.

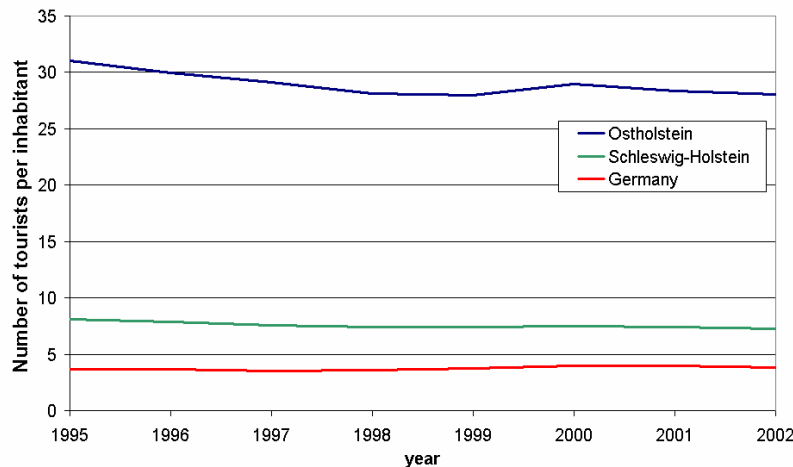
Figure 13 Company sizes in Kreis Ostholstein, 2003



Source: Markus Creditreform

Figure 13 shows that the economic structure in Kreis Ostholstein is particularly characterized by small- and middle-sized business. The large companies in Kreis Ostholstein (>99 employees, 2 %) belong to the branches food-industry, hotel & restaurant and health care & welfare. While the middle-sized companies (> 9 & < 100 employees, 22 %) can be found in the branches food-industry, manufacturing, building industry, hotel & restaurant, trade, service, shipping and health care & welfare. The small-sized companies (< 10 employees, 73 %) are part of the following branches: manufacturing, construction industry, trade, hotel & restaurant, housing and service. More than 40 % of the companies have just one or two employees.

Figure 14 Number* of tourists as ratio of population in Kreis Ostholstein and Germany, 1995-2002

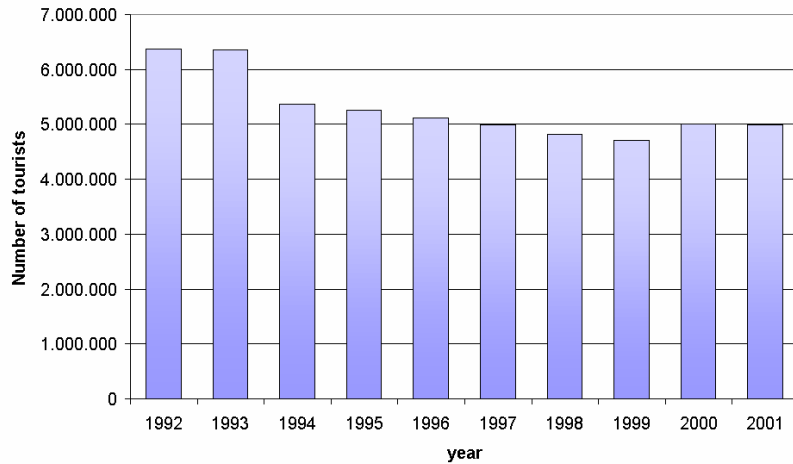


*Number of tourists is defined as number of overnight stays in hotels, guest houses, youth hostels and sanatoria (does not include camping)

Source: Genesis

Figure 14 describes the number of tourists in comparison to the number of inhabitants. While the nationwide development and the development on the national level are quite stable, the number of tourists as ratio of population in Kreis Ostholstein decreased in the period from 1995 until 2002. Nationwide there were approximately 4 tourists per inhabitant, in Schleswig-Holstein there were 7 to 8 tourists and in Kreis Ostholstein the number of tourists per inhabitant decreased from 31 to 28.

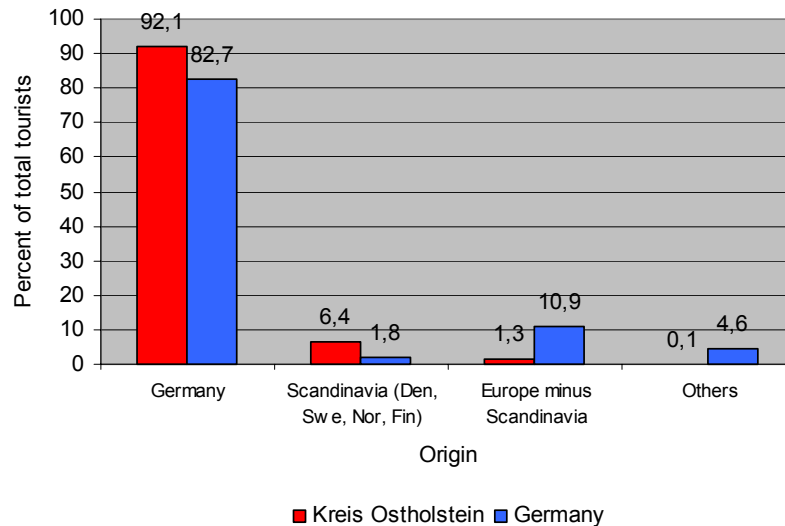
Figure 15 Number of tourists in Kreis Ostholstein, 1992-2001



Source: Kreisverwaltung Ostholstein

Figure 15 puts focus on the number of tourists which spent at least one night in Kreis Ostholstein. During the period 1992-1999 the number of tourists decreased about 1,670,000 overnight stays or about -26.3 %. In 2000 and 2001 the tourism sector recovered slightly.

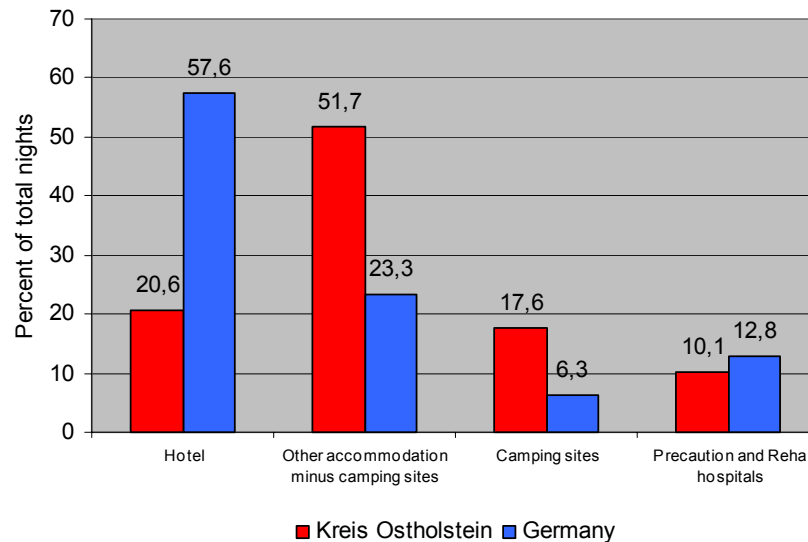
Figure 16 Country origin of tourists in Kreis Ostholstein and in Germany in 2004



Source: Statistisches Amt für Hamburg und Schleswig-Holstein 2004; Statistisches Bundesamt (destatis) 2004

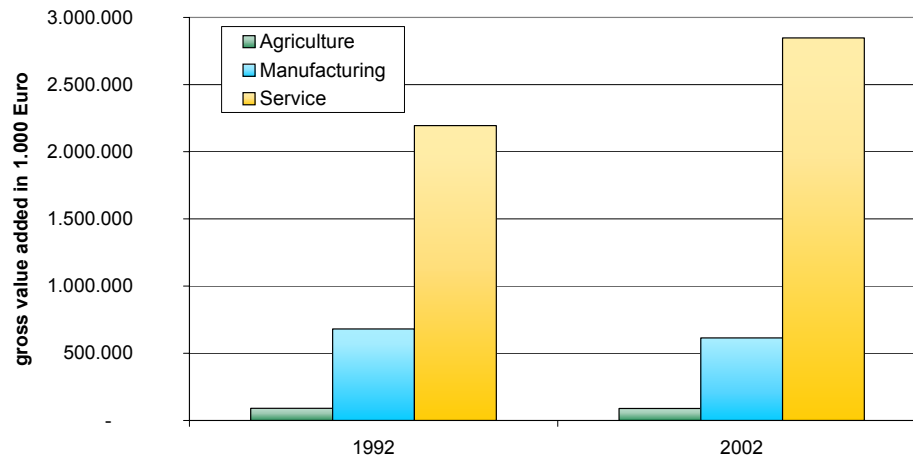
Figure 16 shows that almost all the guests of Kreis Ostholstein originate from Germany. Kreis Ostholstein can thus be seen as a traditional vacation destination for the Germans. The portion of German tourists is about 10% higher than for Germany as a whole. With respect to the foreign guests, it is clear that tourists from Scandinavia are far more important for Kreis Ostholstein than for Germany. Relative to Germany, however, there are few tourists from both the rest of Europe and the rest of the world in Kreis Ostholstein.

Figure 17 Types of tourists in Kreis Ostholstein and in Germany in 2004



Source: Statistisches Amt für Hamburg und Schleswig-Holstein 2004; Statistisches Bundesamt (destatis) 2004

Figure 17 shows substantial differences in the utilisation of overnight accommodation between Kreis Ostholstein and Germany. In Germany hotel nights dominate and camping is relatively unimportant. In Kreis Ostholstein, however, only about 20 percent of the nights were in hotels and about half of all nights were in "Other accommodation". The low share of hotel nights does not mean that the absolute level is lower than for Germany when comparing to inhabitants as the overall level of nights is higher for Kreis Ostholstein. A probable cause of the big differences in the relative importance of the different types of tourists is the coastal line in Kreis Ostholstein. This can also be seen in the many nights at camping sites in the region which for a large part are near the coast.

Figure 18 Gross value added as percentage of sectors in Kreis Ostholstein, 1992 and 2002

Source: Genesis; nominal values

Figure 18 shows the gross value added in Kreis Ostholstein per main sector in 1992 and 2002. While the gross value added in the service sector raised about 650,000 Euro, the sector of manufacturing had a decline of about 65,000 Euro.

Table 1 Composition of export on Baltic Sea countries in Schleswig-Holstein, 1999 and 2003

Country	1999		2003	
	Mio. Euro	%	Mio. Euro	%
Denmark	662	42,2	770	38,8
Estonia	11	0,7	21	1,1
Finland	67	4,3	87	4,4
Latvia	10	0,6	12	0,6
Lithuania	17	1,1	28	1,4
Norway	203	12,9	171	8,6
Poland	222	14,2	258	13,0
Russia	151	9,6	377	19,0
Sweden	226	14,4	258	13,0
Total	1570		1.982	

Source: Statistisches Amt für Hamburg und Schleswig-Holstein; nominal values

Table 1 shows that the export from Schleswig-Holstein grew about 400 million Euro between 1999 and 2003. Corresponding data for Kreis Ostholstein are not available.

Despite the fact that exports from Schleswig-Holstein are influenced by the trade across the Danish-German border the trade with for e.g. Russia shows a very dynamic development. Within the Baltic Sea region Denmark is the most important trading partner for Schleswig-Holstein though the export rate lost about 3.4% since 1999. In the same period the exports from Schleswig-Holstein to Russia had the highest growth rate.

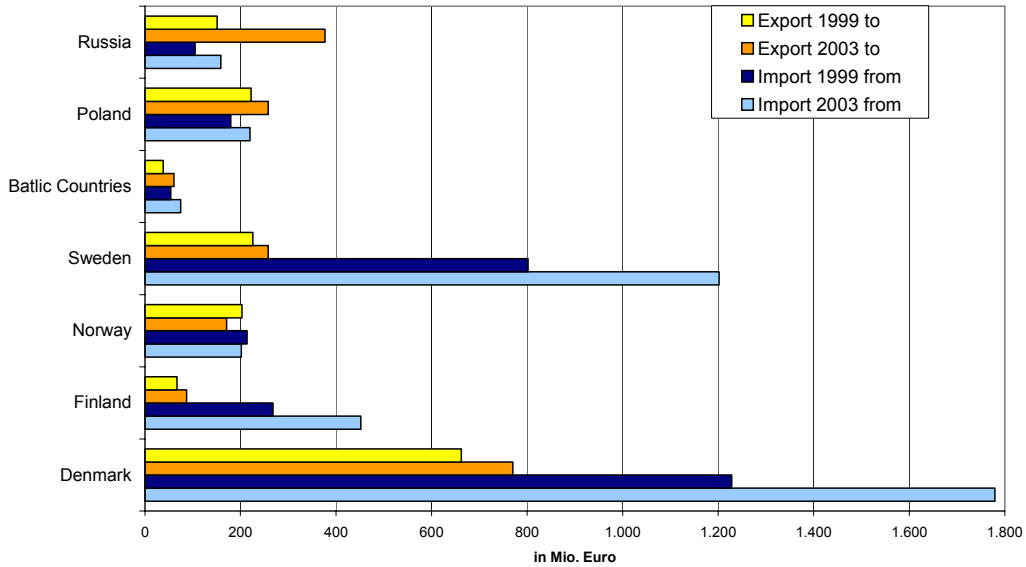
Table 2 Composition of export on EU countries in Schleswig-Holstein, 1999 and 2003

country	1999		2003	
	Mio Euro	%	Mio Euro	%
Belgium/Lux.	210	4,1	572	7,9
Denmark	662	12,9	770	10,7
Estonia	0	0,0	21	0,3
Finland	67	1,3	87	1,2
France	702	13,7	831	11,5
Greece	93	1,8	119	1,7
Great Britain	745	14,6	902	12,5
Ireland	119	2,3	89	1,2
Italy	659	12,9	887	12,3
Latvia	0	0,0	12	0,2
Lithuania	0	0,0	28	0,4
Malta	0	0,0	3	0,0
Netherlands	689	13,5	840	11,7
Austria	355	6,9	593	8,2
Poland	0	0,0	258	3,6
Portugal	96	1,9	81	1,1
Sweden	226	4,4	258	3,6
Slovakia	0	0,0	26	0,4
Slovenia	0	0,0	38	0,5
Spain	492	9,6	580	8,0
Czechia	0	0,0	113	1,6
Hungary	0	0,0	98	1,4
Cyprus	0	0,0	5	0,1
Total	5.115		7.211	

Source: Statistisches Amt für Hamburg und Schleswig-Holstein; nominal values

The exports from Schleswig-Holstein to EU countries increased about 2,000 million Euros since 1999. Generally, it can be said that the amount of exports in Euro increased to nearly all countries. Referring to the share of export, the countries Great Britain, France and the Netherlands were the most important trading partners for Schleswig-Holstein in 1999. Four years later the main trading partners were Great Britain and Italy. Moreover, the acceding countries in Eastern and Central Europe gained importance – especially the Czech Republic and Hungary seem to become potential trading partners for Schleswig-Holstein.

Figure 19 Composition of export and import with Baltic Sea countries in Schleswig-Holstein, 1999 and 2003



Source: Statistisches Amt für Hamburg und Schleswig-Holstein

Figure 19 illustrates that in all countries except for Norway exports and imports increased from 1999 to 2003. Sweden and Denmark are the most important countries for imports to Schleswig-Holstein. In 2003 most exports are done to the countries Denmark, Russia, Sweden and Poland. It becomes obvious that the nearby Scandinavian countries are not the most important ones concerning exports. Russia as a growing market in Eastern Europe notes down the most dynamic development concerning exports from Schleswig-Holstein. Furthermore it becomes obvious that the Baltic countries Estonia, Latvia and Lithuania do not play an important role in terms of trade with Schleswig-Holstein (yet).

Appendix 3 Programme and participants at the two regional workshops

Participants at the workshop in Nykøbing Falster (Amtsrådhuset 20 December 2004):

First name	Surname	Institution
Tonni	Krag	Storstrøms Amt
Kristian	Primdal	Storstrøms Amt
Dorthe	Makay	Storstrøms Amt
Per	Bennetsen	Storstrøms Amt
Lone Gjerrulff	Bak	Kommunesamarbejdet Lolland-Falster
Bettina Høst	Poulsen	Sjælland Syd
Jan	Hendeliowitz	AF Storstrøm
Jens	Hennild	Dansk Industri
Lynge	Rasmussen	LO region Storstrøm
Tina Charlotte	Koeffoed	Erhvervsråd Lolland-Falster
Steen	Bengtson	Storstrøms Erhvervscenter
Per B.	Christensen	Kommuneforeningen i Storstrøms Amt
Uffe	Nielsen	Næstvedegnens Erhvervskontor
Flemming	Nielsen	Vordingborg Erhvervskontor
Søren Vang	Hansen	Østsjællands Erhvervsråd
Brian Gardner	Mogensen	Femern Bælt Forum

Copenhagen Economics

Participants at the workshop in Ostholstein (Oldenburg 13 January 2005):

	Name	Institution
1	Sachau, Jochen	CDU-Kreistagsfraktion
2	Klinckhamer, Klaus	MdL
3	Rüder, Ulrich	CDU-Kreistagsfraktion
4	Brandt, Harry	Aktionsbündnis gegen eine festen FBQ
5	Poppendiecker, Gerhard	MdL
6	Schmiedt, Otto-Uwe	Bürgermeister der Stadt Fehmarn
7	Friedrichs, Bernd	Scandlines Betriebsrat
8	Klinke, Burkhard	SPD-Kreistagsfraktion
9	Stolz, Martin	Unternehmensverband Ostholstein UVOH
10	Möller, Birgit	Entwicklungsgesellschaft Ostholstein, Interreg-Sekretariat
11	Runge, Hans	MWAV SH
12	Hirschfeld, Markus	MWAV SH
13	Druba, Karin	MWAV SH
14	Schacht, Rüdiger	IHK Lübeck
15	Bollmann, Adolf	Kreistagsfraktion Bündnis 90/Die Grünen
16	Löschky, Hans-Jürgen	FDP Kreistagsfraktion
17	Siebrecht, Joachim	Kreis Ostholstein, Untere Naturschutzbehörde
18	Matthiensen, Claus-Peter	Entwicklungsgesellschaft Ostholstein
19	Reuter, Fritz	SPD Kreistagsfraktion
20	Steigert, Heinz-Dieter	SPD Kreistagsfraktion, Vorsitzender des Ausschusses für Planung und Wirtschaft
21	Pflug, Peter	Unternehmensverband Ostholstein UVOH
22	Nollenberg, Andreas	Entwicklungsgesellschaft Ostholstein, Tourismusförderung
23	Harenberg, Rolf	Tourismus-Service Fehmarn
24	Kiemstedt, Sibylle	Kreis Ostholstein, Fachdienst Regionale Planung
25	Weppler, Horst	Kreis Ostholstein, Fachdienst Regionale Planung

Prognos

Appendix 4 Socio-economic description of the Great Belt area⁴⁸

The socio-economic description of the Great Belt area compares the region with the nation-wide conditions. The socio-economic description covers the same areas of interest as in appendix 1.

This includes a comparison with the respective national benchmark of:

Population

- Number of inhabitants
- Increase/decrease in population, including forecasts for the population
- Age distribution
- Education
- Occupation and rate of unemployment
- Level of commuting

Business and industry:

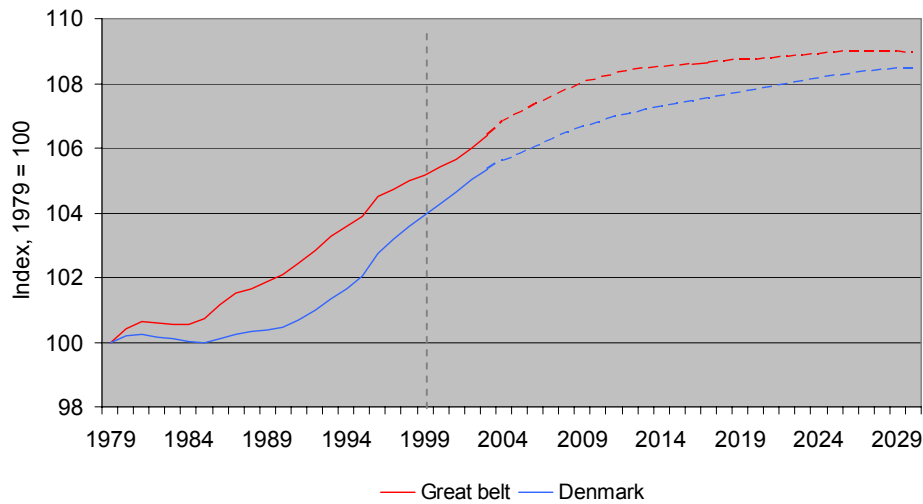
- Lines of business
- Company sizes
- Establishment of new companies and the growth of new companies (and possibly rate of success)
- Financial conditions, e.g. profit ratio
- Tourist data

Development of the population in the Great Belt area

Figure 1 shows the development in number of inhabitants in the Great Belt area and in Denmark from 1979 to 2030 using an index with 1979 as the basic year. Generally the two curves' slopes are alike, with the difference that the Great Belt curve lies higher than the national – thereby it shows that the number of inhabitants will rise more in the Great Belt area than nationally. Both the Great Belt and the national indexes rise significantly from the late eighties and up to around 2005-2010 but then they both decline.

⁴⁸ The Great Belt area is defined as Fyns Amt and Vestsjællands Amt.

Figure 1 Development in number of inhabitants in Great Belt area and Denmark, 1979-2030

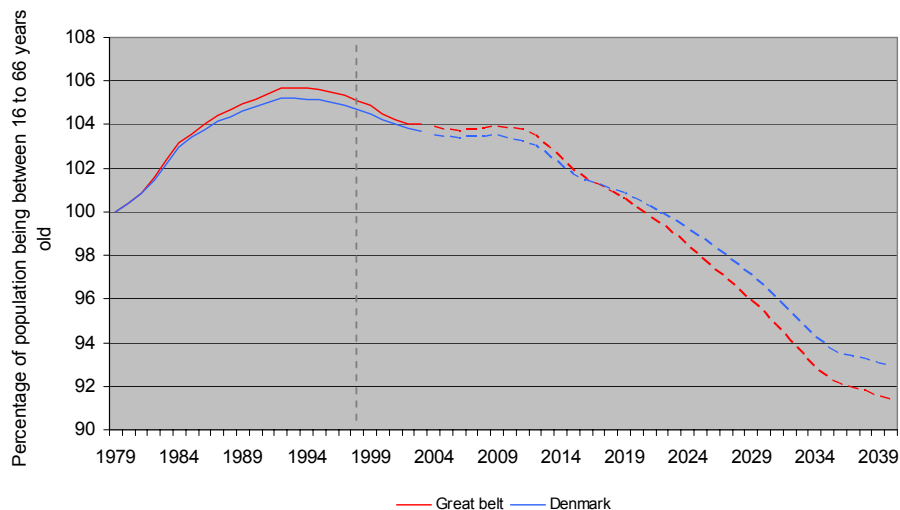


Note: Forecast from 2003.
Source: Statistics Denmark

Figure 2 displays the percentage of the population being between 16 to 66 years old in Great Belt area and nationwide from 1979 to 2040. The two curves are almost alike, both concerning slope and level. They both rise up to around 1995, from then they drop. From around 1995 and to around 2010 the drop is slow, but after that they fall dramatically from 104 to approximately 92 in 2040.

It is worth noticing that the curves are almost identical from 1979 and up to around 2020. Not before then a difference is significant: Around then, the nationally curve is above the Great belt curve, meaning the percentage of the population does not drop quite as fast nationwide.

Figure 2 Age distribution in Great Belt area and Denmark, 1979-2040

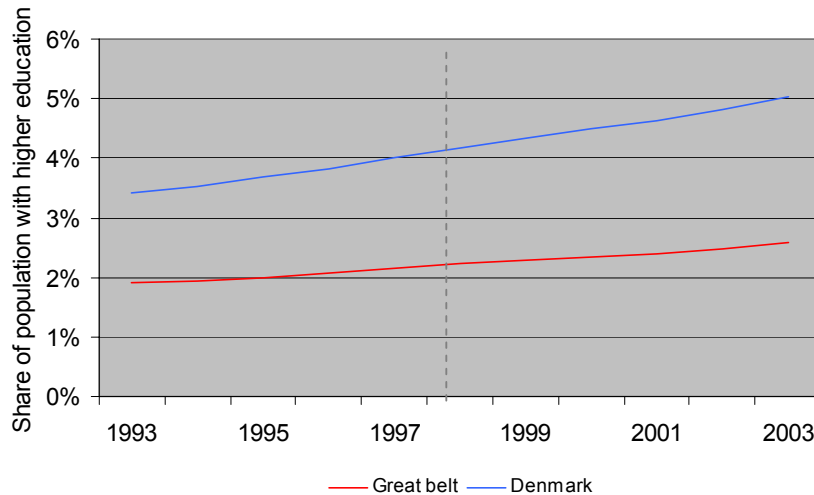


Note: Forecast from 2004.
Source: Statistics Denmark

Figure 3 shows the share of population with higher education in the Great Belt area and in Denmark. The share of population with higher education is higher nationwide than in the Great

Belt area. Both curves are rising, but the slope of the curve for the Great Belt area is not as high as nationally. Thus the education gap is getting larger.

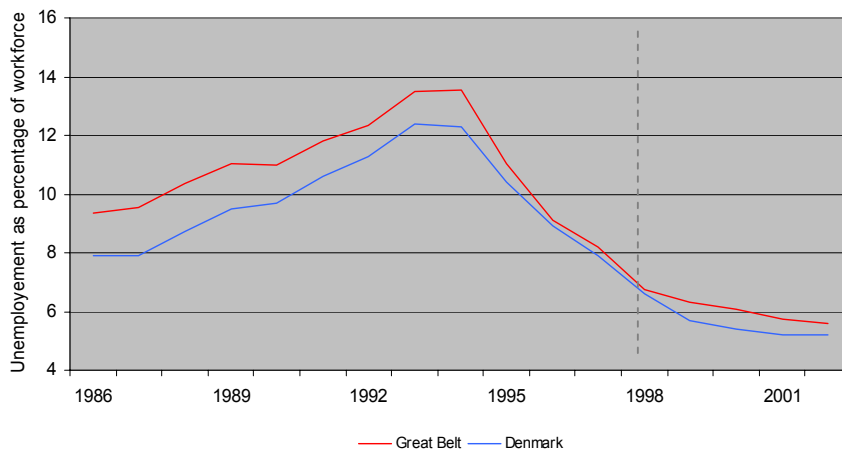
Figure 3 Share of population with higher education in Great Belt area and Denmark, 1993-2003



Source: Statistics Denmark

In Figure 4 unemployment as share of workforce is shown for both the Great Belt area and for Denmark. It is significantly that the two curves are quite alike, at least in their slope. From 1986 to 1995 the curves have more or less the same slopes but the level of the nationwide curve is lower. From around 1995 and forward not only are the slopes almost alike, the levels have also evened.

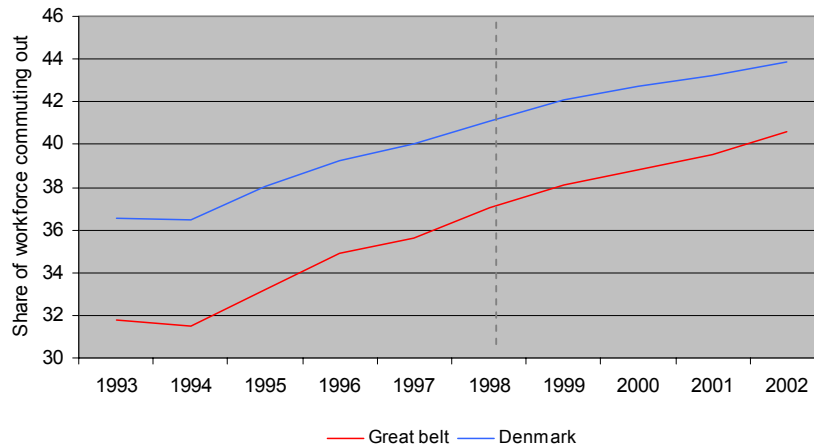
Figure 4 Unemployment as share of workforce in Great Belt area and Denmark, 1986-2002



Source: Statistics Denmark

Figure 5 displays the share of workforce commuting out from the Great Belt area and in Denmark as a whole from 1993 to 2002. The level is quite higher in the Great Belt area than nationwide. But again we see that the slopes over the years are somehow alike, with a dramatic rise in commuting from 1994.

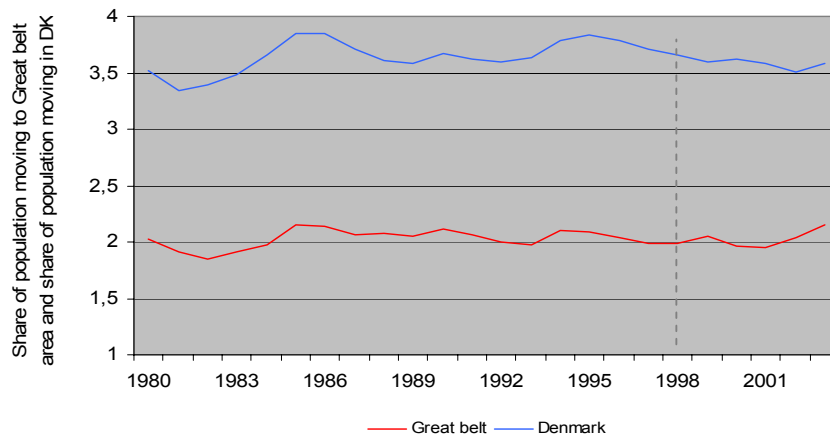
Figure 5 Share of workforce commuting out of the Great Belt area and the Danish nationwide average, 1993-2002



Source: Statistics Denmark

Figure 6 displays the immigration to the Great Belt area as a share of the population in the area and the share of the Danish population moving. The level in Great Belt area is significantly lower than nationwide, the nationwide share being almost twice as high. Both curves are uneven in their slopes with many ups and downs. It is worth noticing that the turns in the two slopes happen in the same years – when the nationwide curve rises, the local curve also rises. The only difference being that the span for the Great Belt curve is smaller than the span in the nationwide curve.

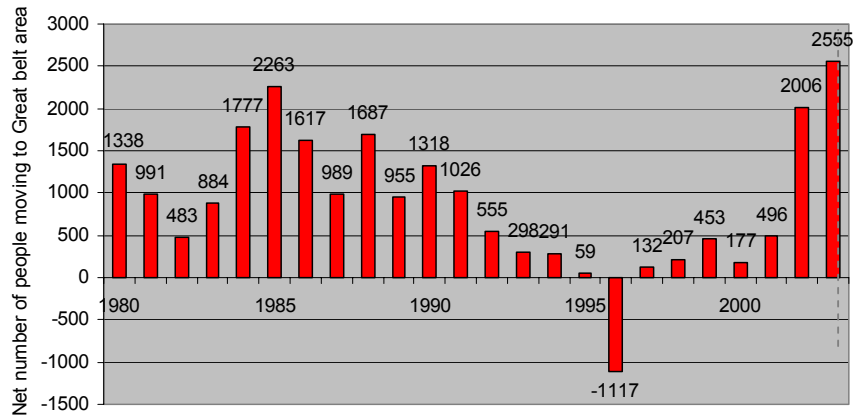
Figure 6 Share of population moving to the Great Belt area and moving in Denmark, 1980-2003



Source: Statistics Denmark

Figure 7 shows the net number of people moving to the Great Belt area from 1980 to 2003. It is characteristic that the net number of people moving to the Great Belt area is positive in every year except for 1996 while it has a big rise at the beginning of the eighties, followed by a slow but stable drop, and again followed by a big rise from 2001.

Figure 7 Net number of people moving to the Great Belt area, 1980-2003

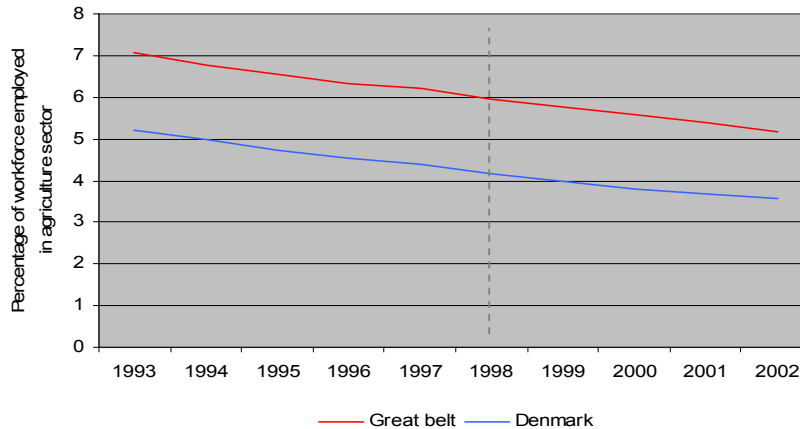


Source: Statistics Denmark

Development in business and industry in the Great Belt area

The following Figures 8, 9 and 10 show the number of persons employed in the sectors agriculture, manufacturing and service. The numbers contain both public and private employed in the sectors.

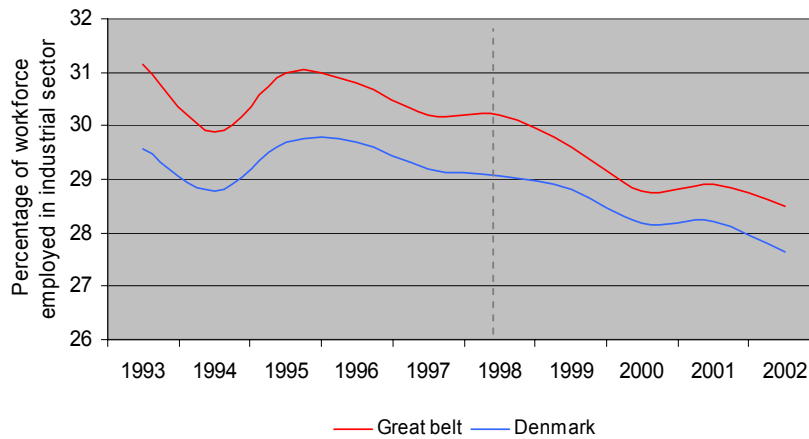
Figure 8 Percentage of workforce employed in agriculture sector in the Great Belt area and Denmark, 1993-2002



Source: Statistics Denmark

Figure 8 shows the percentage of the workforce employed in the agriculture sector in the Great Belt area and in Denmark from 1993-2002. The percentage of workforce employed in the agriculture sector is larger in the Great Belt area than nationwide. Both curves are falling quite fast and with somehow the same speed - about two percent point over the ten year period described, from 7 to 5 and from 5 to 3. Concerning the Great Belt area the share of the workforce employed in agriculture is almost halved.

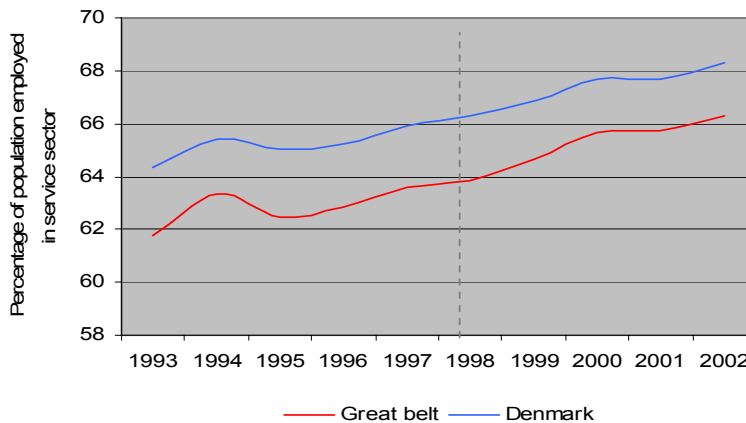
Figure 9 Percentage of workforce employed in the manufacturing sector in the Great Belt area and Denmark, 1993-2002



Source: Statistics Denmark

Figure 9 displays the percentage of the workforce employed in the industrial sector from 1993 to 2002 in the Great Belt area and in Denmark as a whole. The two curves are somehow alike: They both have a big drop in the year 1994 followed by a correspondingly big increase the next year and then again dropping stable from 1996 and forward. Both curves fall approximately two percent point, but the fall does not seem as dramatic as it does for the agriculture sector - since almost one third of the workforce is employed in the industrial sector a drop of two percent does not seem dramatic in the same way as it seemed in the agriculture sector.

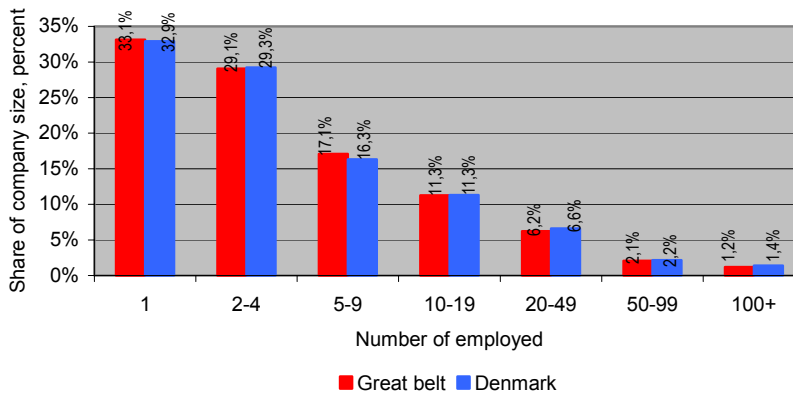
Figure 10 Percentage of workforce employed in the service sector in the Great Belt area and in Denmark, 1993-2002



Source: Statistics Denmark

Figure 10 shows the percentages of the workforce in the Great Belt area and totally in Denmark employed in the service sector from 1993 to 2002. The employment in the service sector is almost opposite of the industrial sector – a rise in 1994, a drop the year after and then a rather slow but stable increase there from, thus the sector employment is approximately two percent higher in 2002 than it was in 1993 both in the Great Belt area and nationwide.

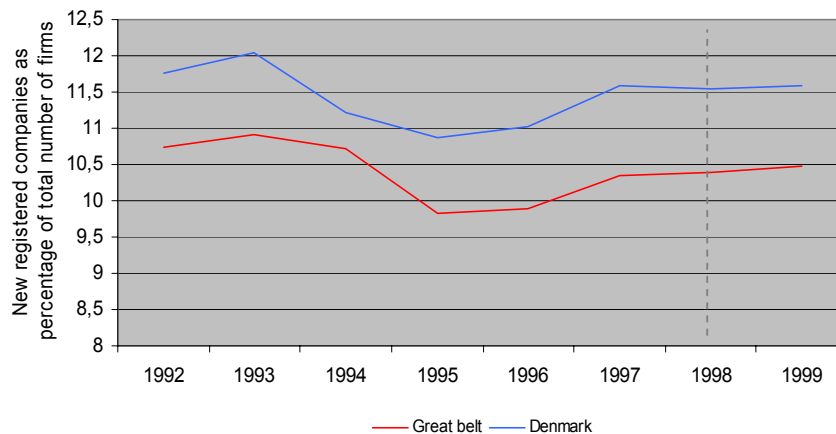
Figure 11 Company sizes in the Great Belt area and Denmark in 2002



Source: Statistics Denmark

In Figure 11 we see the size of companies in the Great Belt area and in Denmark. They are almost identical with just some small differences in two of the categories. The table shows that just below two third of all firms have between one and four employed and just above one of four have between five and twenty employees. Thus approximately 10 percent of the firms have more than 20 employees. The share of companies having between one and ten employees is as high as approximately 80 percent.

Figure 12 New registered companies as a percentage of total number of firms in the Great Belt area and Denmark, 1992-1999



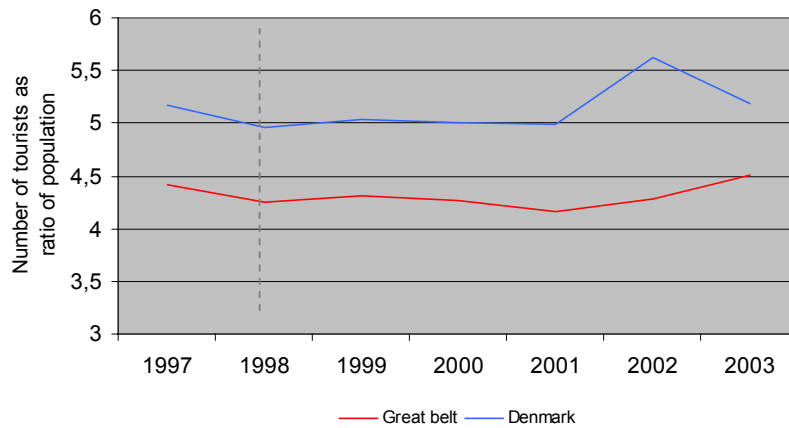
Please change b to B in Belt concerning the red curve

Note: Stat bank Denmark does not have figures newer than 1999 in this indicator.

Source: Statistics Denmark

Figure 12 above displays the new registrations of firms measured as a percentage of the total stock of firms in the Great Belt area and nationwide. The slopes of the two curves are almost identical with only small differences. The levels are also quite alike with the nationwide curve being a bit higher than the regional. But with the same turns and span. Generally the two curves lies around approximately 11 percent: The nationwide numbers just above and the regional numbers just below.

Figure 13 Number of tourists as ratio of population in the Great Belt area and in Denmark, 1997-2003

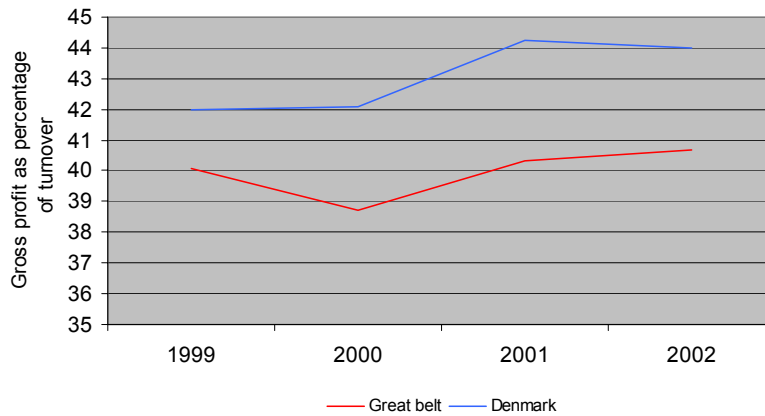


Note: Number of tourists defined as number of nights spent.
Source: Statistics Denmark

Figure 13 shows the number of tourists measured as ratio of the population in the Great Belt area and in Denmark. The numbers are quite stable across the period with a significant increase in the Danish number in the year 2002. Thus the number of tourists per inhabitant in Denmark is constantly around 5 – except for 2002 – and the number of tourists per inhabitant in the Great Belt area is constantly between 4 and 4.5.

The Figures 14 and 15 show gross profit for companies in the Great Belt area and nationwide: At first gross profit over time and secondly broken down on various sectors.

Figure 14 Gross profit as percentage of turnover in the Great Belt area and in Denmark, 1999-2002



Note: Gross profit =Net sales minus the cost of goods or services sold and before payment of taxes and operating expenses.
Source: Statistics Denmark

In Figure 14 above we see gross profit as percentage of turnover for companies in Great Belt area and nationally from 1999 to 2002. During this period the profits are bigger nationally than regionally. Regionally the profits are turning 39-41 percent rising over the years and nationally the profits are between 42-44 percent with an increase from 2000 to 2001 and stability in the other years.

Figure 15 Gross profit as percentage of turnover in the Great Belt area and in Denmark in 2002



Note: Gross profit = Net sales minus the cost of goods or services sold and before payment of taxes and operating expenses.

Source: Statistics Denmark

Figure 15 above also shows gross profit as percentage of turnover in the Great Belt area and nationwide but here broken down in various sectors. Generally speaking the regional and the national gross profit percentages are almost alike in the various sectors. The biggest differences are in the Construction sector and the Business service sector with four percent differences. In two of the sectors (Manufacturing and Wholesale) the national profits are higher, in three sectors (Construction, Transport and Business services) the regional profits are higher, and in two sectors (Retail and Hotel and restaurants) they are exactly the same.

Appendix 5 Socio-economic description of the Øresund region⁴⁹

The socio-economic description of the Øresund region compares the region with the nation-wide conditions. The socio-economic description covers the same areas of interest as in appendix 1.

This includes a comparison with the respective national benchmark of:

Population

- Number of inhabitants
- Increase/decrease in population, including forecasts for the population
- Age distribution
- Education
- Occupation and rate of unemployment
- Level of commuting

Business and industry:

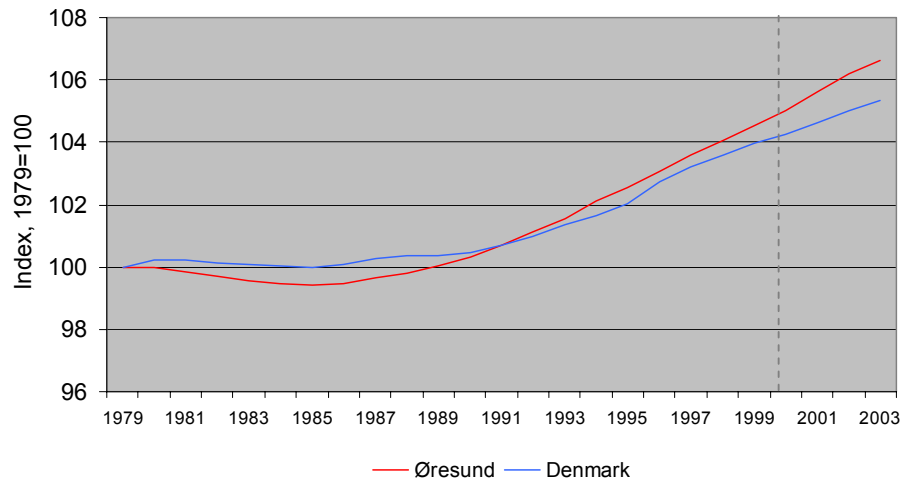
- Lines of business
- Company sizes
- Establishment of new companies and the growth of new companies (and possibly rate of success)
- Financial conditions, e.g. profit ratio
- Tourist data

Development of the population in the Øresund region

Figure 1 shows the increase in number of inhabitants in Øresund and in Denmark from 1979 to 2003 using index figures. In the eighties the population in Øresund dropped below the index year, but in the early nineties it began to increase rapidly and has since then increased faster than the Danish population, even though the difference between the two curves is small.

⁴⁹ The Øresund region is defined as Bornholms Amt, Storstrøms Amt, Vestsjællands Amt, Roskilde Amt, Frederiksborg Amt, Københavns Amt, Frederiksberg Kommune and Københavns Kommune on the Danish side and Skåne Len on the Swedish side.

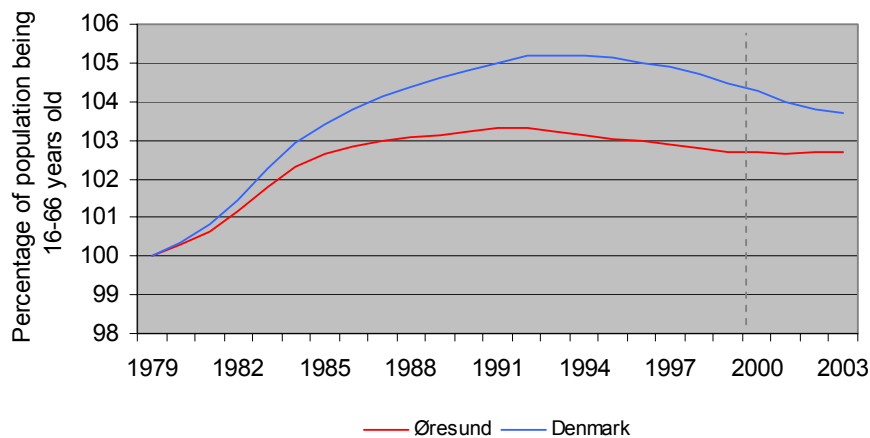
Figure 1 Development in number of inhabitants in Øresund and Denmark, 1979-2003



Note: No forecasts since Statistics Sweden does not have forecasts broken down on regions.
 Source: Statistics Denmark and Statistics Sweden.

Figure 2 shows the part of the population in Øresund and in Denmark being between 16 and 66 years old using an index table. From the beginning the curves are rising fast, with the Danish curve having the highest slope. Thus, the share of population being 16-66 years old is rising faster nationwide than in Øresund. In the late nineties and forward the percentage of the population will slowly decrease.

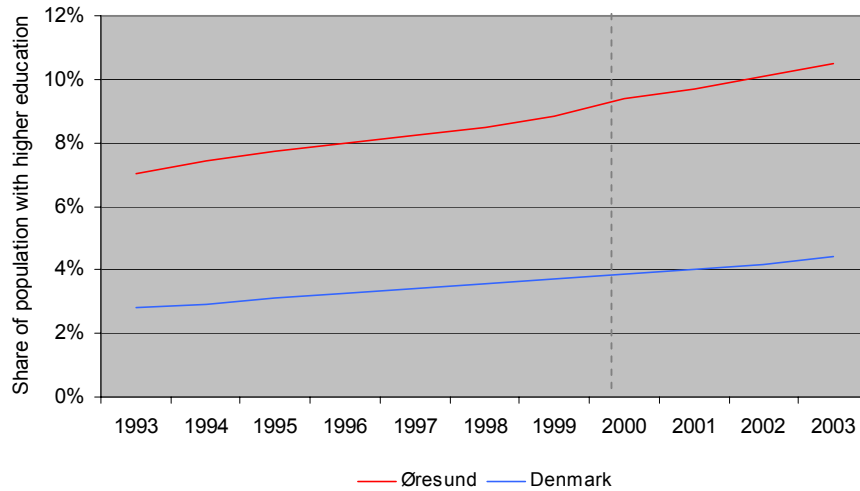
Figure 2 Age distribution in Øresund and Denmark, 1979-2003



Note: No forecasts since Statistics Sweden does not have forecasts broken down on regions.
 Source: Statistics Denmark and Statistics Sweden.

In Figure 3 we see the share of the population in Øresund and Denmark with higher education from 1993 to 2003. The number in Øresund is significantly bigger than the Danish number with the Øresund numbers rising from 7 to just below 11 and the Danish number rising from 3 to above 4. Thus, both numbers are increasing with the Øresund numbers having a faster growth than the Danish.

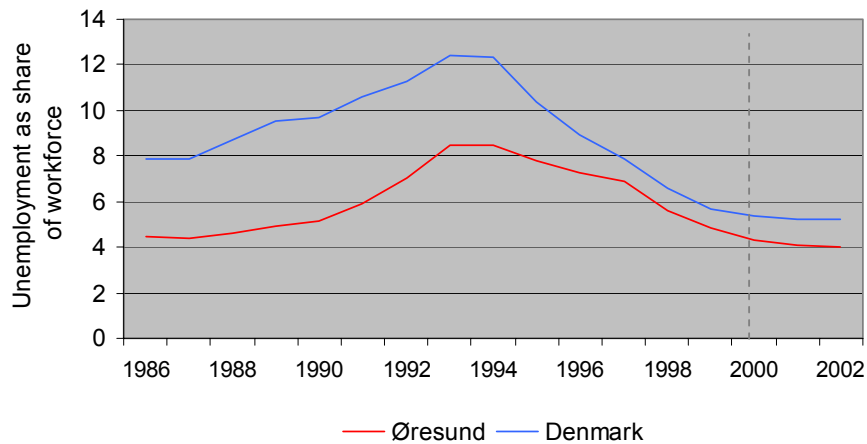
Figure 3 Share of population with higher education in Øresund and Denmark, 1993-2003



Source: Statistics Denmark and Statistics Sweden

Figure 4 displays the unemployed share of the workforces in Øresund and Denmark from 1986 to 2002. The two curves have somehow the same slopes – rising until the mid-nineties and then falling until 2000. The unemployed share is bigger nationally in Denmark than in Øresund but the gap seems to narrow in from the time they begin to drop in the mid-nineties. In Øresund the unemployed share of workforce is rising from 4 to 8 and then dropping to 4 again. The nationwide numbers are rising from 8 to 12 and then dropping to 6.

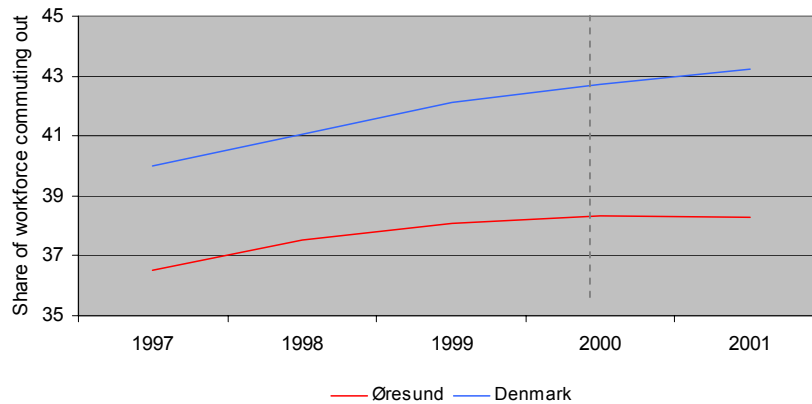
Figure 4 Unemployed share of workforce in Øresund and Denmark, 1986-2002



Source: Statistics Denmark and Statistics Sweden

Figure 5 shows the share of workforce commuting out of Øresund and nationwide in Denmark from 1997 to 2001. The share of commuters in Denmark is increasing a lot faster than the Øresund share: From 38 percent to 43 whereas the Øresund share is more or less stable around 37-38 percent and even diminishing in the end. Thus the gap between the numbers is getting bigger.

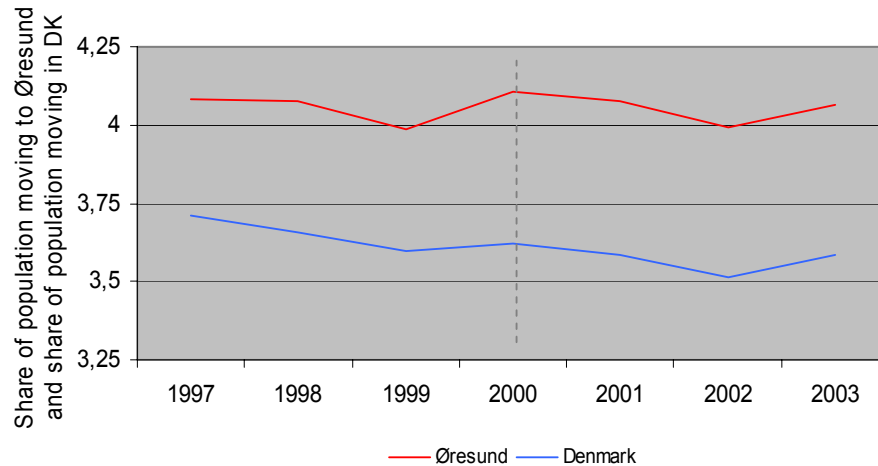
Figure 5 Share of workforce commuting out of Øresund and nationwide in Denmark, 1997-2001



Note: Only data from 1997 until 2001 are available from Statistics Sweden.
 Source: Statistics Denmark and Statistics Sweden

Figure 6 shows the share of population moving to Øresund and the share of the Danish population moving in the period from 1997 until 2003. Both numbers are quite steady - the Øresund number being just above 4 percent and the Danish number being between 3.5 and 3.75 percent. The Danish number falls a bit and the Øresund number going a bit up and down, but in the same level.

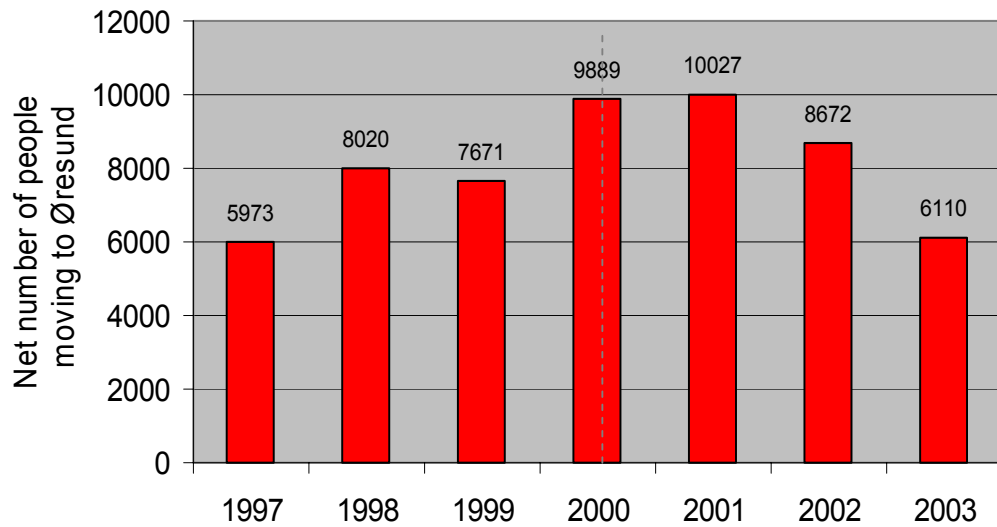
Figure 6 Share of population moving to Øresund and moving in Denmark, 1997-2003



Source: Statistics Denmark and Statistics Sweden

Figure 7 displays the net number of people moving to Øresund from 1997 to 2003. The numbers are generally increasing from 1997 to 2001 but after 2001 the numbers drop again. Thus in 2003 it is in the same level as in 1997.

Figure 7 Net number of people moving to Øresund, 1997-2003

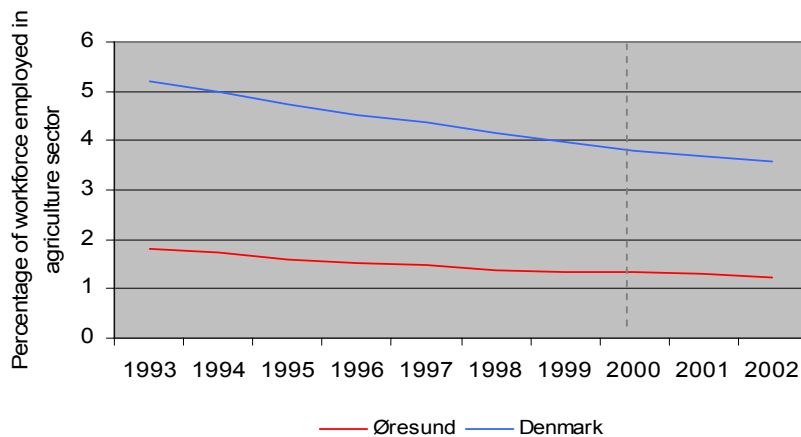


Source: Statistics Denmark and Statistics Sweden

Development in business and industry in the Øresund region

The following Figures 8, 9 and 10 show the number of persons employed in the three main sectors: Agriculture, manufacturing and service. It shows both public and private employed persons in the three specific sectors.

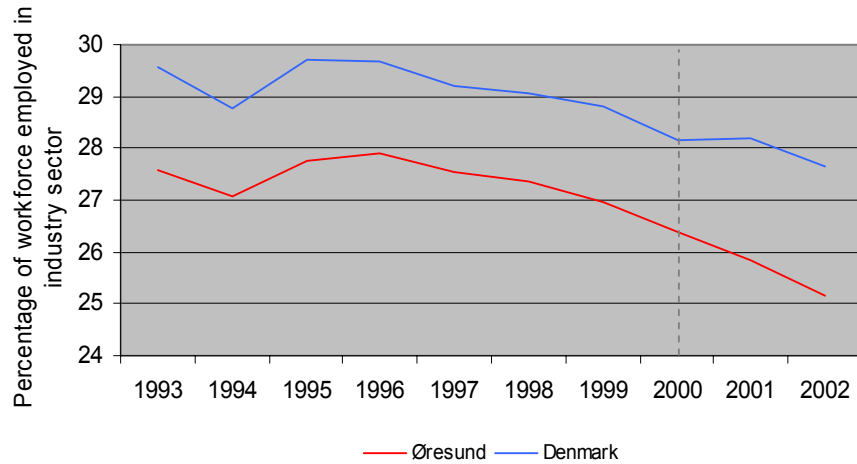
Figure 8 Percentage of workforce employed in agriculture sector in Øresund and Denmark, 1993-2002



Source: Statistics Denmark and Statistics Sweden

In Figure 8 we see the percentages of the workforce employed in the agriculture sector in Øresund and nationwide in Denmark from 1993 to 2002. The nationwide share is significantly higher than the numbers from Øresund, even though both numbers are falling significantly with approximately one third during the ten years: The Øresund numbers from 1.8 to 1.2 and the Danish numbers from 5.2 to 3.5.

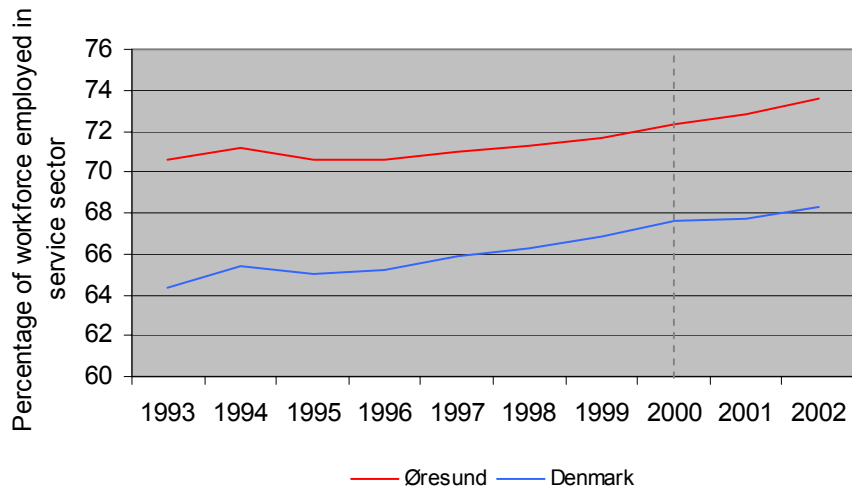
Figure 9 Percentage of workforce employed in the manufacturing sector in Øresund and Denmark, 1993-2002



Source: Statistics Denmark and Statistics Sweden

Figure 9 shows the percentage of workforce employed in the manufacturing sector in Øresund and nationwide in Denmark from 1993 to 2002. The industrial employment is smaller in Øresund than in Denmark as a whole. Both curves are falling and they generally follow the same slopes even though the gap is getting larger in the last years. The nationwide share falls from 29.5 to 27.5 and the share of the employment in Øresund falls from 27.5 to 25.

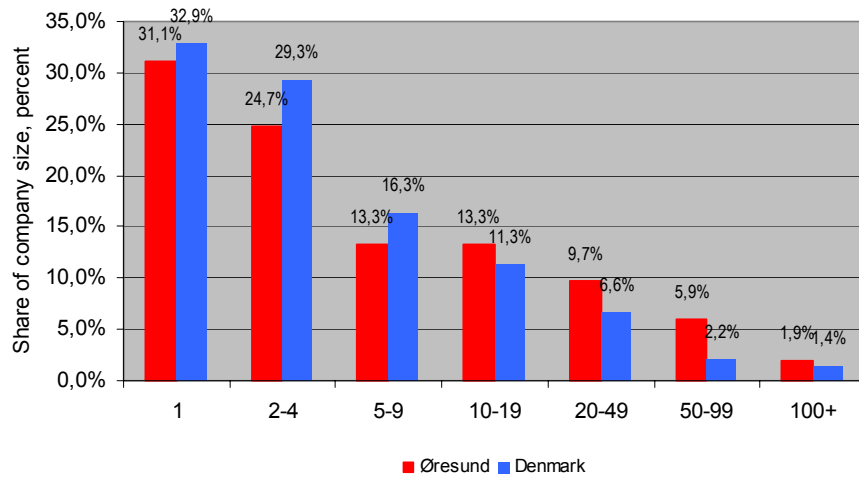
Figure 10 Percentage of workforce employed in service sector in Øresund and Denmark, 1993-2002



Source: Statistics Denmark and Statistics Sweden

Figure 10 displays the percentage of the workforce employment in the service sector in Øresund and Denmark from 1993 to 2002. Both curves are not only rising but also rising from a high level. The nationwide sector employment rises from 64 to 68 percent of workforce and the sector employment in Øresund rises from 70 to 73 percent of the workforce. As so the national employment in this sector is smaller than in Øresund.

Figure 11 Company sizes in Øresund and Denmark, 2002

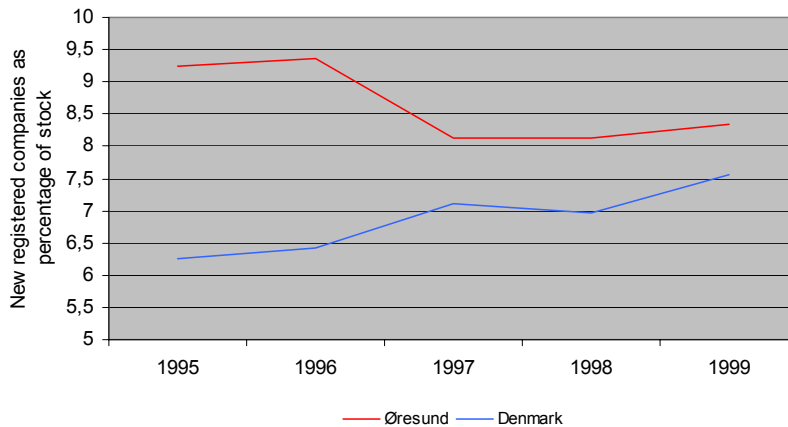


Note: Only Danish part of Øresund

Source: Statistics Denmark. Statistics Sweden does not have information on company size broken down on areas

Figure 11 shows the size of companies on the Danish side of Øresund and nationwide in Denmark. The numbers in the Danish part of Øresund and the national company sizes are almost identical even though Øresund has more firms with ten or more employees than nationwide. Overall most companies - more than two third - have less than five employees. Almost one of four companies have between 5 to 19 employees and less than 10 percent have twenty or more employees. The shares of companies with less than 20 employees are more than 80 percent.

Figure 12 New registered companies as percentage of total number of firms in Øresund and Denmark, 1995-1999



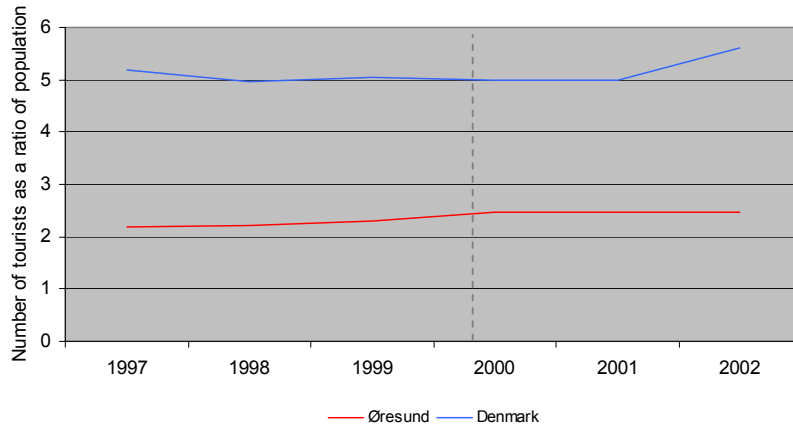
Note: Stat bank Denmark does not have figures newer than 1999 in this indicator

Source: Statistics Denmark and Statistics Sweden

Figure 12 displays the number of new registered companies measured as percentage of the total number of companies from 1995 to 1999. The rate of new registered companies is higher in Øresund than nationwide. At first the gap between the curves is considerably large, in the end they are getting closer. The rate in Øresund has dropped from almost 9.5 to just above 8 while the nationwide numbers has grown from just above 6 to more than 7.5. It is worth

noticing that from 1996 to 1997 the two numbers took a big turn in opposite directions: The nationwide rate going up and the Øresund rate going down.

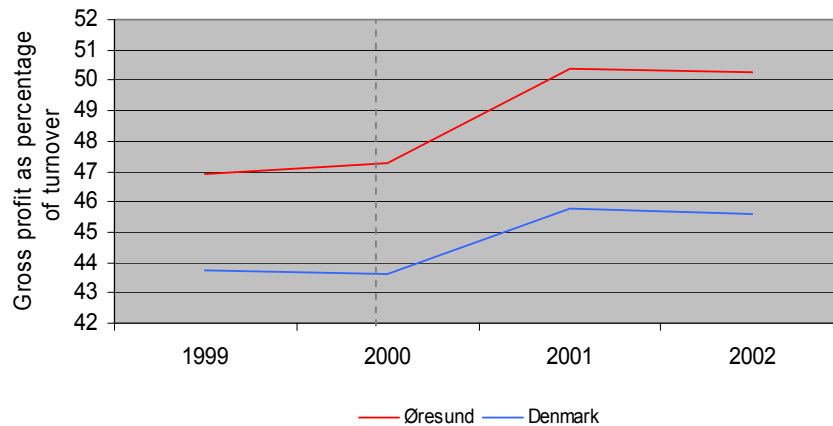
Figure 13 Number of tourists as ratio of population in Øresund and Denmark, 1995-2002



Source: Statistics Denmark and Statistics Sweden

In Figure 13 we see the number of tourists as ratio of population in Øresund and nationwide in Denmark. There are more than twice as many tourists per inhabitant nationwide than in Øresund. The ratios are very stabile during the six years: The nationwide numbers spanning 0.6 from 5 to 5.6 and the numbers for Øresund spanning 0.3 from 2.2 to 2.5.

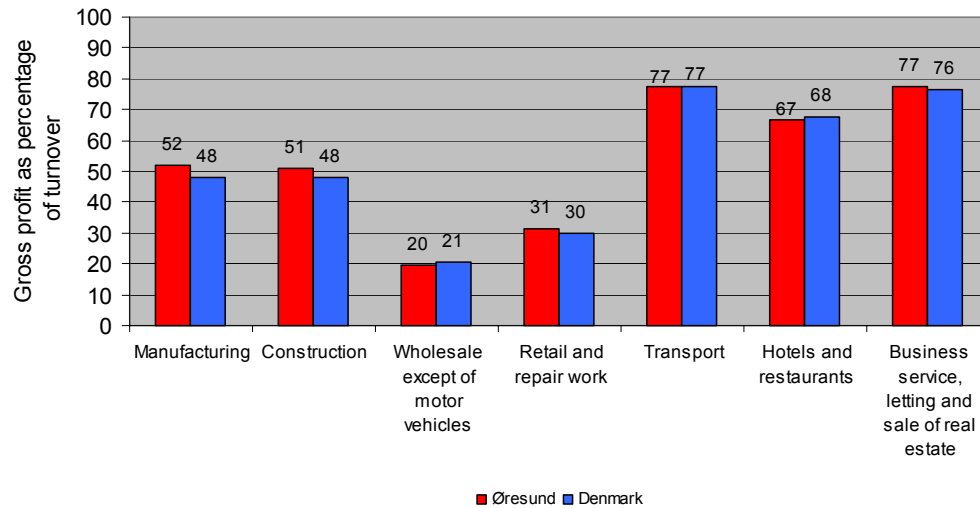
Figure 14 Gross profit percentages in Øresund and Denmark, 1999-2002



Notes: Data definition: Gross profit = Net sales minus the costs of goods or services sold and before payment of taxes and operating costs. Only Danish part of Øresund

Source: Statistics Denmark. Statistics Sweden does not have information on regional gross profit rates

Figure 14 shows gross profit as percentages of turnover from 1999 to 2002 on the Danish side of Øresund compared to the Danish nationwide average. The profit is larger in Øresund than nationwide even though the two curves follow the same generally development: Flat and steady in the beginning and in the end but with a big jump in the middle.

Figure 15 Gross profit as percentages of turnovers in Øresund and Denmark, 2002

Notes: Data definition: Gross profit = Net sales minus the costs of goods or services sold and before payment of taxes and operating costs. Only Danish part of Øresund

Source: Statistics Denmark. Statistics Sweden does not have information on regional gross profit rates.

In Figure 15 we see gross profit measured as percentage of turnover broken down on various sectors for the Danish part of Øresund and the Danish nationwide average. Generally speaking, the Øresund figures are quite similar to the national. There are slight variations but only on few percentages. Thus only in two of the seven sectors the difference is bigger than one percentage point and the biggest difference between Øresund and Denmark is 4 percentage points in manufacturing. In the majority of the sectors the profit on the Danish side of Øresund is bigger (Manufacturing, Construction, Retail and Business services) while the national profit is bigger in two sectors (wholesale, hotels and restaurants).