

Scenario analysis (SCA) from the Centre for logistics and Goods (CLG) study of evaluation techniques, 2004

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The type of scenario applied in the study is of the category *exploratory* scenarios, see Table 12. Within this category there are two sub-types of scenarios: framework- and tendential scenario. The framework scenarios expands the possible range of outcome and tries to elaborate various (extreme) scenarios while the tendential or trend scenario tries to elaborate a scenario which is affected by some particular trend (Hall, 1977).

	Type of Scenario	Aim(s) of Scenario	Premises of Scenario	Procedures Used
Exploratory scenarios	1. Framework scenario	Try to delimit the space of range and possible futures	Suppose that "heavy trends" are permanent and predominant	Make very varied (extreme) hypotheses concerning the evolution of these trends
	2. Tendential scenario	Seek to determine a possible future	Suppose that "heavy trends" are permanent and predominant	Examine the continuation in the future of those trends and the mechanisms that explain trends
Anticipatory scenarios	3. Normative scenario	Seek to produce an image of a future that is possible and desirable	Suppose that we can determine at the outset a range of possible objectives to achieve. Establish a procedure relating the future to the present	Make a synthesis of these objectives to achieve and relate this image of the present
	4. Contrasted scenario	Outline a 'desirable' future located at the frontier of possibilities	Suppose that we can determine at the outset a range of possible objectives to achieve relating to the objective desired	Make a synthesis of objectives to achieve and relate this image of the future to the present

Table 12 Overview of different types of scenarios

The scenarios elaborated in this report will be seen as influenced within two regimes, one which is a regional/local regime and one which is a national/European regime. The regional/local regime describes how the integration within the Øresund Region is progressing and varies with high, middle and low integration, while the national/European regime deals with the more overall development in the remaining part of Denmark and elsewhere in Europe. This regime varies between a situation with deregulation, regulation & sustainable development and a situation with stagnation & crisis. In a combination of these two regimes a total of 9 different framework scenarios

can be produced, see Table 13. The 10th scenario made to illustrate the influence from a trend scenario will be described later.

Øresund Region Integration	Deregulation	Regulation & sustainable development	Stagnation & crisis
High	1	4	7
Middle	2	5	8
Low	3	6	9

Table 13 The 9 different framework scenarios

The Deregulation regime (Scenario 1, 2 and 3) is a situation where the market mechanism is in control. The European Union is expanding with new member nations. Consequently, Europe has developed into a flexible and competitive region without any trade barriers. The transport area has traditionally been a much regulated area, but has through the 1990s undergone a shift towards more deregulation, e.g. road haulage, airlines and inland waterways. This trend is assumed to continue.

The successful economy allows substantial investment in the European infrastructure. Furthermore, the technology area is also making progress, which means that a possible lack of fossil fuels gradually can be followed by a new technology that allows the use of fuel cells and electric driven cars.

The Regulation regime (Scenario 4, 5 and 6) also implies an expansion of the European Union, but the market is more regulated and moves towards a more sustainable development¹. In Europe agreements have been made regarding standards for speed limits, noise, emissions and land use planning. Road tax, fuel duties and road pricing ensure the sustainable development. However, the introduction of these new agreements are not achieved without some problems and makes only slow progress. The environmental agreements imply that infrastructure investment has not been made in the same degree as for the Deregulation regime. Furthermore, an adjustment of the tax system from taxing the income to taxing the use of natural resources, results in a more sustainable development.

The previous years' tendencies of a weak economy continue in the Stagnation regime (Scenario 7, 8 and 9). The enlargement of the European Union is not working out in a smooth way. Unemployment will continue to grow bringing pressure on the public resources. In general Europe experiences stagnation and few infrastructure investments are made. The growing public expenditures imply that there are no resources left to deal with environmental problems. This is reflected in environmental policies that continue mainly with the already existing agreements, etc.

An additional scenario – Scenario no. 10 - is produced to illustrate the modelling of an oil crisis. This trend scenario is based on Scenario 7, in which an oil crisis is modelled

¹ As defined by the Brundtland Commission: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs, see Appendix 2.

to take place around year 2015. The previous section can briefly be summarised as shown in Table 14.

	Deregulation	Regulation & sustainable development	Stagnation & crisis
Technology	Rapid shifts, substantial improvements	Regulation reduces new development	Technological improvements are not frequent
Environment	No change in climate. Some expectations turn out to be groundless	Continuing problems with global warming. Politicians attach more importance to environmental questions. Firms use sustainable development as a competitive parameter	Continuing problems with global warming but no resources for environmental improvement
Political	Stable development, EU expands with many new member countries	Stable development, EU expands with new member countries	Each country promotes its own interest
Economy	Strong steady growth with open trade markets	Even, but steady growth within EU	Scattered growth. No real EU economy. Great difference between the national economies within Europe

Table 14 Overview over the National/European regimes

First different prognoses are described in Section 4.1. This is followed by details of the 10 scenarios.

1.1 Prognoses

When calculating the total cost-benefit rate for an evaluation period over several years, it is necessary to estimate the growth in fixed prices (g) to obtain the values of the effects in the future. Under the assumption that growth in fixed prices is determined to be the half of that for the gross domestic product (GDP) different growth rates are estimated for each regulation regime².

The growth in fixed prices is set to be 1.5 % for the Regulation regime and for the Deregulation regime the growth is set to be 1.0 %. Finally, for the Stagnation regime the growth is estimated to be 0.5 % because of the crisis in the economy, which brings the GDP down to a value of 1.0 %.

The level of integration in the Øresund region will have a large effect on the traffic over the Øresund Fixed Link. Therefore, three different levels of integration are considered. Each level of integration has different growth rates for vehicles and trains. First the prognosis for vehicles will be considered followed by a prognosis for the development in passenger numbers with train across the Øresund Fixed Link.

² The argument is based on Henscher's work relating only to time costs (Gissel, 1999).

The regulation - integration regimes also affect the employment level in the region. The integration level will be most important as concerns the number of new work places, but also the situation elsewhere in Denmark and Europe is assumed to have some impact on the generation of new work places. This is discussed towards the end of this chapter.

1.1.1 Prognosis for car traffic in number of vehicles

The prognosis for car traffic in terms of number of vehicles is based on the assumption that the higher level of integration the higher the level of traffic between Denmark and Sweden. However, for all of the levels of integration a so-called ramp-up period is present. In this period the traffic is adapting to the new possibilities towards the new infrastructure. The fixed link will result in a higher level of integration just by being built. After this ramp-up period the development in integration is assumed to evolve differently depending on which policy initiatives that are implemented. For the regime with a low level of integration there will only be a ramp-up period until 2005 after which the integration will not improve. This means that after 2005 the growth in traffic across the fixed link is not much higher than the overall growth in traffic (2 %). However, in the regime with a high level of integration the ramp-up period does not stop in 2005. It is assumed that the building of the fixed link itself has a longer effect on the traffic and further initiatives are being made to raise the level of integration. This means that the traffic growth is 11 % until 2010. After 2010 the ramp-up period is assumed to be finished. The growth continues, however, to be high because of initiatives that bring the level of integration up. The high integration regime ends with a traffic growth at 1 %, which is lower than the common traffic growth, because the traffic will at the end of the evaluation period reach the capacity level of the Øresund Fixed Link³. The low and middle level of integration reaches the general growth rate in traffic respectively in 2020 and 2030.

³ The capacity of the Øresund Fixed Link is calculated with regards to common capacity calculations and is estimated to be 90.000 vehicles per day.

Table 15 below shows the expected growth rates for car traffic in the three regimes.

Year	Integration level		
	Low	Middle	High
2001	-8.9	-8.9	-8.9
2002	14.9	14.9	14.9
2003	10.0	11.0	12.0
2004	9.0	10.0	12.0
2005	7.0	9.0	12.0
2006-2010	4.0	6.0	11.0
2011-2015	3.0	5.0	7.5
2016-2020		4.0	5.0
2021-2030	2.0	3.0	3.0
2031-2040		2.0	2.0
2041-2050			1.5
2031-2060	2.0	2.0	1.0

Table 15 Prognoses for car traffic in number of vehicles as yearly percentage change

It should be noted that the negative change values in 2001 are due to the opening effect in 2000. The prognosis results in 43300 vehicles annual-daily-traffic (ADT) for the low integration regime, 63000 veh. ADT in the middle integration regime and 85200 veh. ADT for the high level integration regime. The total number of vehicles crossing the Øresund Fixed Link is shown in terms of ADT in Figure 15.

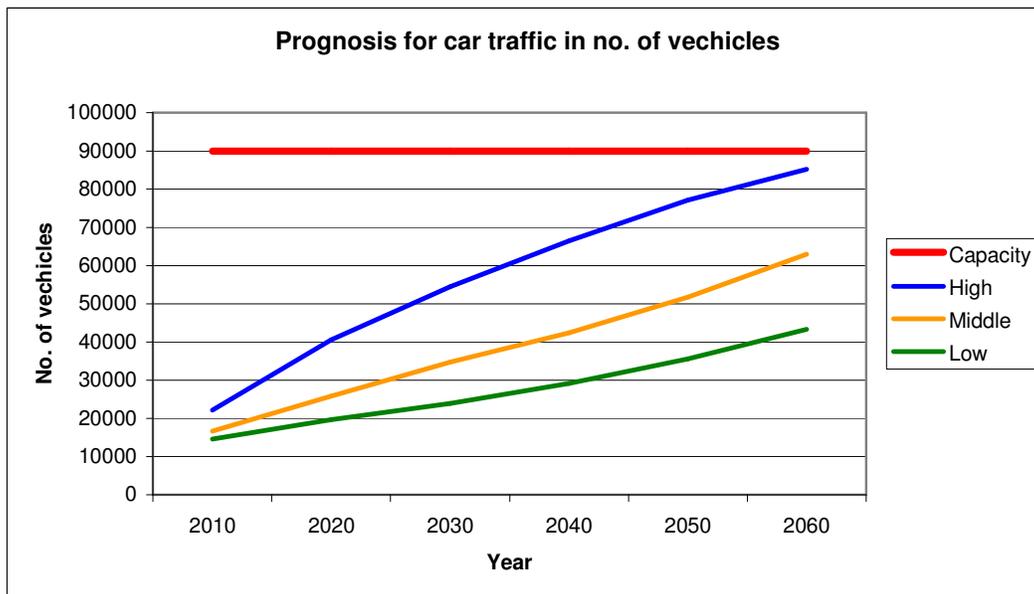


Figure 15 Prognosis for car traffic in number of cars (ADT). The capacity level for the bridge is illustrated by the red line

1.1.2 Prognosis for rail traffic in number of train passengers

The rail connection across Øresund has been very successful. Since the opening in year 2000 the number of train passengers has grown on a steady rate. The development in the volume of travellers by train across Øresund will probably be different from the development in vehicles because the maximum capacity level for the number of trains already has been reached. Note that the load level may be expanded and that a shift in rush hour could happen as a result from full trains.

No official prognosis for the number of train passengers on the Øresund Fixed Link has not been available, but the development so far shows great interest in travelling with the train across the fixed link. The development is assumed to be a high growth until 2010 where growth is expected to reduce to a natural growth level (2 %) over the next 20 years. The growth level follows the development in growth for vehicles after year 2010 for the 3 different levels of integration see Table 16.

Year	Integration level		
	Low	Middle	High
2001	-9.0	-9.0	-9.0
2002	11.2	11.2	11.2
2003-2006	10.0	10.0	10.0
2007	4.0	6.3	
2008-2010		6.0	
2011-2015	3.0	5.0	8.0
2016-2017		4.0	
2018-2020			5.0
2021-2030	2.0	3.0	3.0
2031-2060		2.0	2.0

Table 16 Prognoses for train passengers as percentage change from previous year

This prognosis assumes that the capacity level for passengers do not influence the development, because new rolling stock should be sufficient to meet these demands. These growth ratios are converted into a number of passengers using the trains across Øresund giving the curves shown in Figure 16.

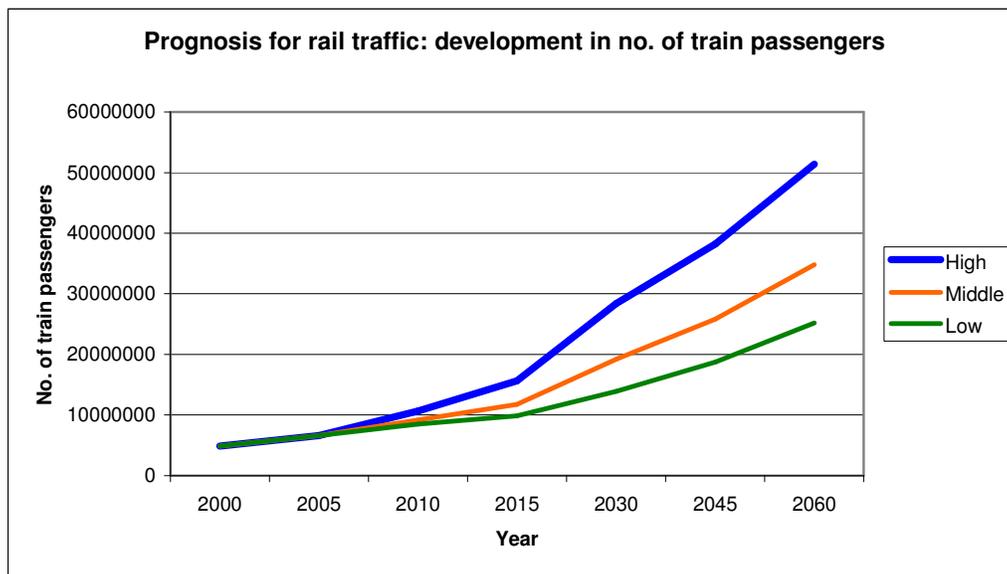


Figure 16 Prognosis for rail traffic development in number of train passengers per year

1.1.3 Development in employment

The Local Governments Research Institute (AKF) has estimated 2000 newly generated work places because of the Øresund Fixed Link. This number is only the effect on the Danish side of Øresund (Jensen-Butler & Madsen, 2000). Considering the population in the whole Øresund Region the total number of new work places is estimated to be 2900. The effect is mainly in the greater Copenhagen area and in Skåne. This is an estimate

for the short and medium term. It is difficult to estimate the long term employment effect because further structural changes can happen. In this case the structural change has simply been forecast based on the medium term rate for the total 60 year evaluation period.

The degree of integration in the region is assumed to have a great effect on the employment. If today's barriers are reduced and people can move freely across the border between Denmark and Sweden it is assumed that it could be attractive to live on one side of Øresund and work on the other side. Consequently, the Øresund region could be considered as one coherent region and one market for the companies. It is obvious that such a situation would generate more work places than a situation where there is a low degree of integration. But how much should the number of work places in a low integration situation vary from a central estimate? - this is not obvious. A project, which examines a rail tunnel between Helsingør and Helsingborg (HH) estimates a linear relationship between the traffic volume and numbers of new work places (Atkins, 2003). However, there are conditions that are different from a HH-tunnel to the Øresund Fixed Link. Thus the fare level is much higher and the distance is longer for the Øresund Fixed Link. Consequently, the share of commuters will be higher for a HH-tunnel than for the Øresund Fixed Link. This implies that the relationship between traffic volume and number of new work places may not be expected to be linear for the Øresund Fixed Link.

The traffic volume varies with approximately $\pm 30\%$ for high and low integration. The number of new work places could possibly vary between 0 to 30%. In this analysis it is estimated that the number of work places may vary with approx. $\pm 15\%$. The development in Europe including Denmark may also have an effect on the employment in the Øresund region. This effect is, however, estimated to be minor as the variation between the 3 regimes is ± 100 new work places. The total number of new work places distributed on the different scenarios is shown in Table 17.

Øresund Region Integration	Deregulation	Regulation & sustainable development	Stagnation & crisis
High	3400	3300	3200
Middle	3000	2900	2800
Low	2600	2500	2400

Table 17 The employment effect in the Øresund Region

On the following pages the ten scenarios applied in the CLG-DSS modelling work are described as they can be set out at the current stage of the work. Other outcomes of the scenario work in Task 9 are treated in Homann Jespersen (2003).

1.2 The nine framework scenarios

Overall nine framework scenarios have been formulated on the basis of the principles described on the previous pages. In addition one trend scenario has been formulated as “adding” a trend to the development represented by Scenario 7, see Section 4.3.

Scenario 1: Deregulation with high integration

	Deregulation	Regulation	Stagnation
High	1	4	7
Middle	2	5	8
Low	3	6	9

This scenario is the most optimistic one. The economy in Europe and Denmark is generally in a good state. Within the Øresund Region the economy has developed towards a very strong economy. The integration between The Greater Copenhagen Region in Denmark and Skåne in Sweden has undergone a progressive development. This has resulted in the creation of an integrated region, where people move across the border between Denmark and Sweden daily without noticing the differences. The region is highly competitive compared with other regions within the European Union.

The effect is a perceived higher value of time for the travellers (both car and train travellers). This is due to the level of activity in the region. The value rises after 2004 with a steady rate until year 2020 where the scenario factor (S) rises to a value of 1.15. After 2020 the value of S is constant on 1.15. A progressive technology development results in a reduction of the number of accidents on the Øresund Fixed Link. This reduction is modelled with a fall in the scenario factor after 2004 until 2020 to a value of 0.95. Then the factor is set to 0.95 throughout the evaluation period.

The value of carbon dioxide (CO₂) is reduced because the expected effects from the emission fail to appear and the technological development has also reduced the emission of CO₂. The price per ton CO₂ emission is reduced rapidly after 2004 until a value of 200 DKK is reached in 2007. This is modelled with a scenario factor that takes on the value of 0.67 in 2007. The CO₂ price reflects USA and UK estimates, where CO₂ emissions are not given the same importance as in continental European countries today.

The effect on the employment is that the value of a new work place is reduced. A new work place value is based on a report from the former West Germany that calculated the resources associated with creating a new work place for the government (Goodwin & Persson, 2001). The value is reduced because the economy produces many new work places and therefore the expenses associated with forming a new work place are reduced. The value is reduced with the scenario factor that takes on the value of 0.95 in 2020. The high integration between Denmark and Sweden results in 3300 new work places. Because of the progressive development in the rest of Denmark and Europe there are further 100 new work places because of the Øresund Fixed Link. This gives a total of 3400 new work places.

Scenario 2: Deregulation with middle integration

	Deregulation	Regulation	Stagnation
High	1	4	7
Middle	2	5	8
Low	3	6	9

The integration between Denmark and Sweden continues with the same pace as in 2003, but the barriers present in 2003 will continue to play a role.

General growth will remain steady. The Øresund Region will not be a powerful region within Europe, but will maintain a status as a supporting region. Other regions in Europe will also develop.

One effect is a perceived higher value of time for the travellers (both car and train travellers). This should be seen as a result from a higher level of activity in the region. The value will rise after 2004 with a steady rate until 2020 where the scenario factor (S) rises to a value of 1.10. After 2020 the value of S is constant at 1.10. A progressive technology development results in a reduction of the number of accidents on the Øresund Fixed Link. This reduction is modelled with a decreasing scenario factor after 2004 until 2020 where a value of 0.95 is reached. For the remaining period the factor will stay at the 0.95 value. The relatively small decrease in number of accidents should be seen on the basis of the already low number of accidents on the bridge. The Øresund Fixed Link is the safest part of the highway system in Denmark; other highways have around 10 times more accidents.

The value of carbon dioxide (CO₂) is reduced because the expected effects from the emission fail to appear and the technological development has also reduced the of CO₂ emission. The price per ton CO₂ emission is reduced rapidly after 2004 until a value of 200 DKK is reached in 2007. This is modelled with a scenario factor that takes on the value of 0.67 in 2007. The CO₂ price reflects USA and UK estimates, where CO₂ emissions are not given the same importance as in continental European countries today.

The building of the Øresund Fixed Link gives new opportunities for companies and 2900 new work places are expected in the region. Due to the development in the rest of Denmark and Europe a further 100 new work places are created because of the Øresund Fixed Link. This gives a total of 3000 new work places.

Scenario 3: Deregulation with low integration

	Deregulation	Regulation	Stagnation
High	1	4	7
Middle	2	5	8
Low	3	6	9

The Øresund Region has not lived up to the expectations. There has not been any progress in integration between The Greater Copenhagen Region in Denmark and Skåne in Sweden. The barriers that hinder the integration are still present and there has not been any attempt to resolve them. However, in the rest of Denmark and Europe there is a strong economy. This development means that the Øresund Region does not attract new investments. Some companies will experience an effect from the strong economy elsewhere. This will mainly concern multinational companies and companies.

Even with less development in the region the perceived value of time is rising. This should be seen as an effect from the overall good state of the economy in the rest of Denmark and Europe. The value rises with a steady state until 2020, where the scenario factor (S) reaches 1.05 for both car and train travellers.

The value of carbon dioxide (CO₂) is reduced because the expected effects from the emissions fail to appear and the technological development has also reduced the emissions of CO₂. The price per ton CO₂ emission is reduced rapidly after 2004 until a value of 200 DKK is reached in 2007. This is modelled with a scenario factor that takes on the value of 0.67 in 2007. The CO₂ price reflects USA and UK estimates, where CO₂ emissions are not given the same importance as in continental European countries today.

The building of the Øresund Fixed Link gives new opportunities for companies, but because of the low integration only 2500 new work places are expected in the region. Due to the positive development in the rest of Denmark and Europe there are further 100 new work places because of the Øresund Fixed Link. This gives a total of 2600 new work places.

Scenario 4: Regulation with high integration

	Deregulation	Regulation	Stagnation
High	1	4	7
Middle	2	5	8
Low	3	6	9

The integration between The Greater Copenhagen Region in Denmark and Skåne in Sweden has undergone a progressive development. This has resulted in the creation of an integrated region, where people move across the border between Denmark and Sweden daily without noticing the differences. The region is highly competitive with other regions within the European Union. Traffic on the Øresund Fixed Link will be equal to traffic between other parts of Denmark.

The development concerning environmental protection is taking a long time to produce results. Therefore, the value of CO₂ emission is slowly increasing. This is a result of the Kyoto agreement and an increased concern for the effects from CO₂ emissions which become an important issue to ensure sustainable development. From 2004 to 2020 the value per ton CO₂ emission is increased to 600 DKK. This rather strong increase of the value should be noticed on the basis of the substantial differences there are in valuing emissions within Europe. There are examples of prices from 3 DKK to several thousands DKK per ton CO₂ emission.

Due to the high level of activity and progressive development within the region area, there is an effect of a further 400 new work places because of the Øresund Fixed Link. However, the activity level in Europe and in other parts of Denmark does not affect the employment in the Øresund Region. This gives a total of 3300 new work places.

Scenario 5: Regulation with middle integration

	Deregulation	Regulation	Stagnation
High	1	4	7
Middle	2	5	8
Low	3	6	9

This scenario is the reference scenario.

The integration between Denmark and Sweden continues with the same pace as in 2003, the barriers that were present in 2003 will continue to play a role in the integration.

The development concerning environmental protection is taking a long time to produce results. Therefore, the value of CO₂ emission is slowly increasing. This is a result of the Kyoto agreement and an increased concern for the effects from CO₂ emissions which becomes an important issue to ensure sustainable development. From 2004 to 2020 the value per ton CO₂ emission is increased to 600 DKK. This rather increased value should be noticed on the basis of the big differences there are in valuing the emissions within Europe. There are examples of prices from 3 DKK to several thousands DKK per ton CO₂ emission.

The building of the Øresund Fixed Link gives companies in the Øresund region a greater trade area which again affects the labour market. It is estimated that the new bridge will result in 2900 new work places. The activity level in Europe and other parts of Denmark does not affect the employment in the Øresund Region. Therefore, the total number of new work places in the Øresund Region because of the bridge is 2900.

Scenario 6: Regulation with low integration

	Deregulation	Regulation	Stagnation
High	1	4	7
Middle	2	5	8
Low	3	6	9

The integration between The Greater Copenhagen Region in Denmark and Skåne in Sweden has not shown much progress. There are still many barriers for working on the other side of Øresund, and therefore only 2500 new work places are created because of the new bridge.

Due to the increasing awareness of environmental problems in Europe and as a result of the Kyoto agreement the value of CO₂ emission is increased to 600 DKK per ton CO₂ in an attempt to reduce the emissions. The increased concern for the effects from CO₂ emissions is an important issue regarding sustainable development. The increase to 600 DKK/ton is reached in 2020. This rather large increase of the value should be noticed on the basis of the substantial differences there are in valuating the emissions within Europe. There are examples of prices from 3 DKK to several thousands DKK per ton CO₂ emission.

The building of the Øresund Fixed Link gives companies in the Øresund region a greater trade area which again affects the labour market. It is estimated that the new bridge will result in 2900 new work places. Due to the low integration in the region this number is reduced to 2500. The activity level in Europe and in other parts of Denmark does not affect the employment in the Øresund Region. Therefore, the total number of new work places in the Øresund Region because of the bridge is expected to equal 2500.

Scenario 7: Stagnation with high integration

	Deregulation	Regulation	Stagnation
High	1	4	7
Middle	2	5	8
Low	3	6	9

The co-operation between the European countries within the European Community has stagnated. This is a result of an economy in Europe with low growth, which means that the individual country does not have a “political surplus” to deal with questions like environment or improvement of the co-operation within Europe. Consequently, the countries continue with their current policies.

In this scenario the Øresund Region, however, experiences progress as concerns the integration in the region. This strengthens the Øresund region’s competitiveness because other regions in Europe do not experience the similar progress. However, the situation in Europe and the rest of Denmark results in a minor decrease in the value of time (to 0.95 in 2020). The decrease in the value of time should be seen as a result from the overall economic crisis.

Similarly, the value of an accident decreases to 0.95 in 2020.

The economic crisis in Europe and in the rest of Denmark brings pressure on the labour market where fewer new work places are created. This means that a work place is ascribed a higher value. The value of a work place will increase to 1.05 in 2020. Due to the high integration level in the Øresund region more work places are created in the region. The economic crisis in Europe, however, results in fewer new work places (-100) so the total number of new work places is set to 3200.

Environmental discussions involving CO₂ emissions do not happen because of the mentioned “lack of political surplus”. This means that the environmental policy does not change, and therefore the value of CO₂ emissions remains at 300 DKK per ton CO₂ emission.

Scenario 8: Stagnation with middle integration

	Deregulation	Regulation	Stagnation
High	1	4	7
Middle	2	5	8
Low	3	6	9

The co-operation between the European countries within the European Community has stagnated. This is a result of an economy in Europe with a low growth which means that the single country does not have a “political surplus” to deal with questions like environment or improvement of the co-operation within Europe. Consequently, the countries continue with their current policies.

The integration between Denmark and Sweden continues with the same pace as in year 2003. The barriers that were present in 2003 will continue to play a role for the integration. However, the development in Europe and in other parts of Denmark has stagnated. The Øresund region therefore experiences a strengthening of its position as a powerful region in Europe. However, the stagnation in Europe leads to a decrease in value of time. This decrease means that the value of time (S-factor) is set at 0.90 in 2020.

Similarly the value of an accident decreases to 0.95 in 2020.

Environmental agreements involving CO₂ emissions do not happen because of the mentioned “lack of political surplus”. This means that the environmental policy does not change, for which reason the value of CO₂ emissions remains at 300 DKK per ton CO₂ emission.

The economic crisis in Europe and in the rest of Denmark brings pressure on the labour market where fewer new work places are created. This means that a work place is ascribed a higher value. The value of a work place will increase to 1.05 in 2020. The economic crisis also results in fewer new work places (-100) so that the total number of new work places is set to 2800.

Scenario 9: Stagnation with low integration

	Deregulation	Regulation	Stagnation
High	1	4	7
Middle	2	5	8
Low	3	6	9

This scenario is the most pessimistic scenario where both the Øresund Region and other parts of Europe experience stagnation and low or no economic growth.

The co-operation between the European countries within the European Community has stagnated. This is a result of European economy that has a low growth which means that the individual country does not have a “political surplus” to deal with questions like environment or improvement of the co-operation within Europe. Consequently, the countries continue with their current policies.

The Øresund Region has not fulfilled the expectations. There has not been any progress as concerns integration between The Greater Copenhagen Region in Denmark and Skåne in Sweden. The barriers that hinder the integration are still present and there has not been any attempt to resolve them.

Due to the low economic growth the activity level drops to a minimum. This activity level influences the value of time. The price of time is set to 0.85 in 2020.

Similarly, the value of an accident is decreased to 0.95 in 2020.

Environmental discussions involving CO₂ emissions do not happen because of the mentioned “lack of political surplus”. This means that the environmental policy does not change. The value of CO₂ emissions remains at 300 DKK per ton CO₂ emission.

The economic crisis in Europe and the rest of Denmark brings pressure on the labour market where fewer new work places are created. This means that a work place is ascribed a higher value. The value of a work place will increase to 1.05 in 2020. The lack of progress as concerns the integration in the Øresund region means that only 2500 new work places are generated. The economic crisis in Europe also results in fewer new work places (-100) so the total number of new work places is set to 2400.

1.3 An example of a trend scenario

On the basis of Scenario 7 an example of a trend scenario has been produced.

Scenario 10: Stagnation with high integration Trend: Oil crisis

	Deregulation	Regulation	Stagnation
High	1	4	***7***
Middle	2	5	8
Low	3	6	9

This scenario is an “add-on” to framework Scenario 7. The same parameters are used for this scenario as for Scenario 7. However, an oil crisis between 2010 and 2015 is modelled. Thus a shortage of oil that affects all impacts is taken into account and modelled. The lack of oil is considered by setting the S-factor equal to 0.3, when the crisis is most severe. After 2015 the factor increases to 1.0 within 2 years and reaches the same level as before the oil crisis.

The reason for this oil crisis is not further explained⁴.

The trend scenario is meant to illustrate how technical modelling can be linked to a trend scenario that “grows out” of some framework scenario.

⁴ This could be a war in the Middle East, disagreement among oil producing countries about supply or price levels, lack of technology development, etc. The inspiration behind this trend scenario is due to the ProVision project (Thorsteinsson, 2002) and Rifkin (2002) where details can be found as concerns plausibility, etc. Fuel price is also a concern in the RUC scenario work (Homann Jespersen, 2003).

