

Summary:

Wider economic benefits of major Norwegian road investments

The Norwegian geography is characterised by long distances, difficult topography, and dispersed population. Hence, investments in transport infrastructure have been perceived as important for economic development and public welfare. The present study focuses on the wider economic effects of major road investments in Norway during the period 1993-2005. A statistical analysis of 102 major road projects reveals a weak relationship between investment level and population development. Effects of infrastructure investments on income and industrial development were not found.

Case studies show that linking peripheral regions within a travel time distance of 45-50 minutes may contribute to a consolidation of the local supply of services and of the local labour market. However, the results indicate that the strength of the local markets depends on population size. 10 000 - 30 000 inhabitants seems to be necessary in order to reduce the leakage to nearby cities.

The success of economic base industries, such as maritime industries, offshore supplies and tourism, is to a large extent determined by international trends rather than local infrastructure projects. Nonetheless, road investments seem to be a necessary requirement for the adoption of contemporary just-in-time production patterns, which rely heavily on road transport.

About the study

The broader economic consequences of investments in transport infrastructure may be studied through case studies (micro studies) of infrastructure projects or by macroeconomic models. Case studies provide valuable insight concerning players and mechanisms involved, but the method faces limitations when it comes to generalisation and the “counterfactual problem”.

Macroeconomic models have revealed a positive and modest economic contribution of transport infrastructure, but the macroeconomic approach has limited utility due to the sharp differences and conflicts among these models on the magnitudes and direction of economic impacts of infrastructure. Further, these macroeconomic models do not give insight into the mechanisms linking transport improvements to any wider economic impacts. In the present study a combination of micro and macro methods have been applied. A statistical analysis of impacts of 102 major road projects has been carried out and supplemented by three case studies of larger road investment:

1. The triangle link completed in 2000 is a tunnel and bridge system connecting the islands Bømlo and Stord to the mainland and the nearby town of Haugesund.
2. Road improvements during the period 1995-2005 between Førde and Florø that have reduced travel time between the two centres from 80 to 50 minutes.
3. Fixed link to the North Cape opened 1999.

Statistical analysis

Many of the 102 major road projects were undertaken in central parts of Norway, but there are also examples of large investments in remote areas. Economic impacts are estimated at the municipality level (430 municipalities) within one hour's radius of the projects. The results are:

- Population growth is mainly determined by the degree of centrality defined as distance to major centres.
- The level of road investment has a small additional effect on population growth. An investment of €125 million would only increase population size of nearby municipalities by 1 % over the whole period 1990-2008.
- There seems to be no effect on employment, income levels, commuting or industrial growth.

Case studies

The three case studies describe different geographical situations. The road investments projects in case study 1 and 2 connect regions of about 30 000 inhabitants and travel times less than 1 hour, while the North Cape link affects only 3000 inhabitants and the distance to the nearest centre, Alta, is about 3 hours.

Representatives from local businesses and the municipal authorities are interviewed. The interviews are complemented with data on population and industry from Statistics Norway (SSB).

In the case studies where ferry services were replaced by a fixed link, there was a one-time traffic increase of 20-40 % (North Cape and Bømlo/ Stord). For all the links subsequent traffic growth has been above regional average.

Effects on local service and labour markets

The regions Bømlo – Stord and Florø – Førde both experienced a consolidation of the local supply of services and the local labour market. In both regions commuting has increased. Larger labour markets give more opportunities for qualified and specialised labour; especially when labour markets differ from each other, like Førde with public administration and hospital, and maritime industries, oil and gas sector supplies in Florø. In addition, since the maritime industries are vulnerable to fluctuations, alternative jobs not too far away make the region as a whole more robust.

In the retail and service sector larger catchment areas have contributed to local concentration processes that result in consolidation of local markets. Stord and Førde are strengthened at the expense of Bømlo and Florø respectively. The establishment of shopping centres has been a central element in this development, which contributes to restraining the drain to distant larger cities. Public service is not concentrated to the same extent.

Thus, we can conclude that when peripheral regions are linked within a travel time of 45-50 minutes, the local supply of services and the local labour market can be consolidated. The result indicates that the strength of local markets depends on population size. 10 000 - 30 000 inhabitants seems necessary in order to reduce leakage to nearby cities.

In North Cape (Honningsvåg) there are no such consolidation effects. On the contrary, leakage of services to Alta has increased. In addition; more air travellers avoid the local regional airport and use the main airport Alta in order to obtain competitive air fares. The same tendency is also found in Bømlo/Stord where people travel to Haugesund airport instead of to the local airport.

Effects on base industries – maritime, off-shore supplies and tourism

Export oriented economic base industries are transport intensive and the goods travel long distances. Thus, the relative importance of local road investment is lower. Base industries like fish farming, maritime industries, oil and gas sector supplies have become more dependent on road transport and JIT-production. Transport of intermediate goods is especially critical. For these industries, transport investments are seen as a necessary but not sufficient requirement for continuing business. Economic fluctuations and global trends are the main determinants for the development of these industries.

Regularity and flexibility are important for the export of fresh fish in order to reach the markets at the right time. A safe road during the winter and fixed links replacing ferries are effective measures to enhance transport quality to the level required for the transport of fresh fish thereby obtaining higher prices in the market.

Tourism to North Cape has not been influenced by the new fixed link.