

Summary:

## Local labour market effects of transport investments

**Improvements in infrastructure may facilitate commuting between neighbouring regions, which in turn may stimulate the regional integration of local labour markets. In Norway, the average travel time to work has increased by more than 20 percent since the mid-1980s. The increase in commuting may be interpreted as a regional integration of labour markets, in response to improved accessibility and increased range. The increase has been largest in the peripheral municipalities.**

**Studies of three Norwegian infrastructure investments – the Korgfjell tunnel, the Triangle Link and the main road (Rv5) between Førde and Florø – demonstrate that the investments have led to reductions in travel time and increased commuting. This in turn results in a more varied and effective labour market, providing greater opportunities for employment and economic growth, and a better matching of skills. The regional integration of labour markets may therefore ideally serve three aims: reducing unemployment, improving access to labour, and securing a decentralised settlement structure.**

The report is based on an empirical analysis of the relationship between investments in transport infrastructure and regional development, exemplified by an analysis of commuting and employment patterns. The analysis draws on a statistical analysis of commuting flows, settlement and employment patterns at a low level of aggregation. The statistical analyses are supplemented by interviews with firms and local authorities in selected case study areas. Together, the two data sources provide insights into the local consequences of specific infrastructure investments.

The selected study areas differ in terms of infrastructural project, industry structure and employment levels. *The Triangle Link (Trekantsambandet)*, completed in 2001, is a system of two bridges and an underwater tunnel connecting two islands to the mainland. The *main road (Rv 5) between Førde and Florø* consists of a series of road improvements, including a tunnel substituting a mountain road. The final stage of the road improvement scheme was completed in 2005, the tunnel being finished already in 1995. The third project is a tunnel replacing a narrow mountain pass (*Korgfjelltunnelen*), completed in 2005.

In addition, the report discusses the impact of inter-city trains on regional integration. Special focus is put on the strategies and plans of the municipality of Fredrikstad, the county authority of Østfold, and the Oslo Region alliance.<sup>1</sup>

### **The integration of labour markets**

An adequate transport infrastructure is important in order to expand and strengthen local labour markets and improve access to services, both for people and business. This dual aim of transport investments is expressed in the Norwegian government's focus on road investments as a means of creating stronger regions (St.meld. nr 21, 2005-2006).

The integration of labour markets is normally measured as increased commuting. The idea is that by connecting smaller regions, a larger region may emerge, containing a more varied and effective labour market, thus creating a larger potential for economic growth. The integration of labour markets is also considered a means to secure settlement in peripheral regions. Investments in transport infrastructure thus serve an important aim of regional policy: to increase the attractiveness of a region both for business and people.

A well-functioning labour market depends on attaining a balance between the offer and demand of labour. This balance must often be met through migration or commuting. Commuting may therefore be interpreted as a lack of correspondence between the number and skills of employable inhabitants in a region, and the qualification requirements of employers. Robust settlements in the periphery depend on the availability of a sufficient number of employment opportunities within an acceptable commuting distance. By improving the opportunities to commute, fluctuations in local labour markets may be levelled. Commuting therefore serves as a buffer reducing the risk of unemployment, offering an alternative to migration.

### **The effect of infrastructure investments differs between regions**

The size of commuting flows depends on a number of local and regional conditions such as settlement patterns and the location of workplaces and regional centres. We have compared concrete adaptations in selected regions with an expected pattern by means of a spatial interaction model describing typical commuting patterns towards workplace concentrations. The model describes how commuting intensities increase when travel time is reduced and the number of available workplaces increases. The analysis shows that investments have different effects in the three regions of study.

#### *Rv 5 between Førde and Florø*

The road project has encompassed seven sub-projects opened between 1999 and 2005. The Naustdal tunnel was completed already in 1995. The upgrading of the

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<sup>1</sup> The Oslo Region alliance consists of 57 local authorities, including the City of Oslo, Akershus and Østfold counties and the municipalities surrounding Oslo.

road has reduced the distance between Førde and Florø from 67 to 56 km, and shortened the travel time by 25 minutes.

Commuting between Førde and Florø has increased since the completion of the road. The two regional centres differ in industry structure, which may partly explain the large increase in commuting. Florø's industry is dominated by the maritime and petroleum sectors, while Førde has a large service sector, the central hospital and various administrative functions. As a consequence of the road improvements, Førde and Florø have developed into an integrated labour- and settlement area. Førde has strengthened its role as the dominating regional centre with a strong increase in the number of workplaces. Florø has not to the same extent been strengthened by the improvements in accessibility, due to increased competition from the service sector in Førde. The growth of Førde as a service centre is also related to the location along E39, making the town an important transit node in North-western Norway.

The improved road is however also a strength to Florø. Cyclical fluctuations and international competition make Florø's industries vulnerable to periodical work-force reductions. Improved opportunities to commute may thus prevent migration. It is also argued that the road has improved welfare and well-being for the inhabitants of the region.

### *The Triangle Link*

The Triangle Link connects the islands of Stord, Fitjar and Bømlo to the mainland. The link replaces four ferry distances and consists of two suspension bridges, one subsea tunnel and a smaller bridge.

The Triangle Link has led to a strong increase in commuting between Bømlo, Stord and the mainland. The islands of Bømlo and Stord have low levels of unemployment, and the industry structure of the two islands is similar. Stord and Bømlo have become more closely connected as a consequence of the fixed link, and are strong enough to withstand the competition from the regional centre of Haugesund. This suggests that two places of similar industry structure together may grow stronger as a consequence of improved accessibility, rather than the one community growing stronger at the expense of the other.

When it comes to the service sector, however, there is evidence that it is the service industry at Stord which has gained the most from the improved accessibility provided by the Triangle Link, and that the service sector at Bømlo will lose in the competition from the trade centre at Heiane (Stord).

### *The Korgfjell tunnel*

The Korgfjell tunnel replaces a narrow mountain pass between two municipalities in Northern Norway. Despite the long distance to the regional centres, there has been an increase in commuting between the municipalities on each side of the Korgfjell tunnel, which may be interpreted as a regional integration of labour markets. However, the region as a whole, including the regional centres of Mo i Rana, Mosjøen og Sandnessjøen, are characterised by stagnation or decline in population.

## **Redistributive effects and polycentric development**

Contemporary labour markets are characterised by mobility and flexibility. Improved accessibility not only render possible larger commuting distances, but also facilitates greater and more frequent interaction between actors, companies and organisations that are not co-localised.

Instead of focusing on the integration of local labour markets, as in incorporating a smaller labour market within a larger one, the idea of *interaction between cities and between business environments*, in terms of mutual influence and interaction, is worthy of consideration. To this end, communication, business travel and meetings are important.

Infrastructure investments and improved accessibility may lead to redistributive rather than generative growth, favouring some regions and actors at the expense of others. While redistributive effects in many cases are perceived of as negative, this is precisely the desired outcome in the strategy of *polycentric development*, where the aim is to redistribute the growth from the big city to the smaller towns and communities. In this connection, the development of inter-city trains is important.

During the last two decades, there has been a substantial growth in daily commuting over long distances in the Oslo area, parallel with a considerable upgrading of inter-city trains. In a strategy of polycentric development, it is important that the centres are not too small, too many or too closely localised. The distance must be large enough for the centres to develop internal growth and not merely become commuter towns to the larger city. The case of the inter-city distance *Østfoldbanen* and the development plans of the city of *Fredrikstad* illustrates this challenge.

## **Commuting: Advantages and disadvantages**

While the integration of labour markets is stressed as a positive strategy to reduce unemployment, strengthen the competitiveness of business and secure a decentralised settlement structure, there may also be disadvantages associated with increased commuting. Improved opportunities to commute provide a wider range of work and residence choices. Commuting may however also imply disadvantages, both for the individual, the society and the environment.

Improvements in infrastructure may change the competitive conditions between regions, for instance leading to local closures and regional concentration of services. Our study and related research demonstrate that improved transport infrastructure and accessibility increase mobility and create more traffic. The strengthening of inter-city trade may contribute in making the growth in mobility more sustainable.