



The impacts of road tolling: A review of Norwegian experience

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ABSTRACT

Road tolling has been used extensively for funding of national roads in Norway since 1982. The article, which is primarily based on review of literature, identifies the impacts of tolling in four key policy areas: economic efficiency, regional development, regional redistribution and democracy. Toll financing may change the ranking of projects but does hardly reduce construction costs. The recurrent budget has been quite stable and toll revenues therefore represent net additional resources for road investment. Regionally, tolling has led to a shift of road investments to more central areas. Tolling has increased local political influence compared to national influence.

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1. Introduction

This article is based on the cross-sectoral research project “Impacts of NPM Reforms” that has studied such reforms in three sectors: the hospital sector, the regional policy sector and the road sector, the latter focusing on road tolling. These reforms, which are all seen as inspired by New Public Management (NPM), have been analysed in the light of their impacts on four key policy areas: economic efficiency, regional development, regional redistribution and democracy. The review was primarily based on the extensive literature available. The current article describes Norwegian experiences of road tolling. It outlines development and regulation of the current system and identifies impacts in the four policy areas.

Road tolling has a long history in Norway. Bekken and Osland indicate that the first documented project (Vrengen bridge in the County of Vestfold) was approved by Parliament in 1929 (2004b). Others state that road tolling has been used for more than 100 years (Odeck and Bråthen, 2002). It is, however, particularly during the last couple of decades that road tolling has gained prominence as a key financial instrument for investments in national roads. The year 1982 is often seen as the turning point. That was almost the same time as the introduction of a range of policy initiatives and reforms that shortly afterwards were labelled New Public Management (NPM) (Greve, 2002; Hood, 1991). It is, therefore, not surprising that the current Norwegian road tolling system has many NPM features.

NPM is now used as a common label for the various techniques used by governments to restructure the public sector aimed at

promoting greater efficiency through the application of techniques drawn from the private sector. There are two main tendencies in NPM reforms. The first is managerialism, which includes decentralisation, management by objectives, focus on output and outcome, user influence, joint forums of strategic leadership, service and quality management systems, division of large public entities into smaller units, etc. The second is market-orientation, for instance privatisation, contracting out—tendering, purchaser-provider models, free choice, establishing of public limited companies, competition, economic incentives and user charges (Greve, 2002; Hansen, 2001; Hood, 1991). Since road tolls are user charges and in some cases working as incentives, and since public limited companies usually are formed to operate the tolling system, the Norwegian road tolling system represents the market tendency of NPM reforms as well as decentralisation of responsibility and decision making.

2. Road tolling in Norway

Until the early 1980s toll financing was seen as a supplement to state funding of national roads (Knutsen and Boge, 2005). In particular, many projects were opened in the western and northern parts of Norway, hence for many years toll projects mainly were implemented in peripheral areas (Bekken and Osland, 2004b; Bråthen and Odeck, 2009; Ramjerdi et al., 2004; Odeck and Bråthen, 2002).

2.1. Development

The current system for use of road tolling for financing of national roads in Norway dates from the 1980s. At that time a

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rapid increase in the number of toll projects started (Knutsen and Boge, 2005; Office of the Auditor General of Norway, 1999).

The current regime not only provides for individual toll road projects but increasingly also for more complex “toll rings” or “toll cordons” that typically implies tolling of ring roads and arterial roads in a coherent larger urban area or at least several roads in a sector of such area. In 1986, the first Norwegian toll ring opened in the City of Bergen. At that stage, only Singapore had a similar toll ring (Bekken and Osland, 2004b). Later, the concept of toll rings has spread to other Norwegian cities. Currently, seven urban toll rings are in operation, Bergen, Oslo, Nord-Jæren, Kristiansand, Tønsberg, Namsos and Haugesund. An eighth, which was in operation for 14 years in Trondheim, closed by 2005 when toll revenues had financed their planned share of the roads. Tolling, however, has now being re-introduced in Trondheim to finance a new arterial road.

Toll financing is a key element of the larger urban transport packages among which Oslo, Bergen, Nord-Jæren and the former Trondheim toll ring. All packages are based on sharing of costs between road-users, the state and local government (Bekken and Osland, 2004b). Toll financing is a precondition for these urban transport packages and constitutes the road-users' contribution. The user's contribution can be high, for instance 75 per cent of the total budget of NOK 11.2 billion (approximately EUR 1.4 billion) for the next four year phase of Oslo Package 3. Here 54 per cent of the budget is aimed at road investment and the remainder at public transport investment and operation.

From 1932 (completion of the Vrengen bridge) to 1980, tolling was used for approximately 45 road projects (Knutsen and Boge, 2005). Other sources indicate a somewhat different figure, namely that until 1986 approximately 60 toll projects had been implemented in Norway, about half of them were substitutions for ferry connections. In 2007, the total number of toll projects reached 100 (Fortun, 2007). By then 46 projects were in operation, including the seven urban toll rings mentioned above. At the same time, tolling had been discontinued for 54 projects when the revenues collected had covered their share of the project costs.

Tolls can be used to fund infrastructure, either a specific project (toll road), or upgrading of a range of projects. As a starting point, at least 50 per cent of the costs of a toll project should be financed by the tolls. That, however, is not the case for all toll projects (Ministry of Transport and Communications, 2004b; Office of the Auditor General of Norway, 1999; National Public Roads Administration, 2001).

Toll revenues did not exceed 4 per cent of the total annual provisions for national road infrastructure until 1982 when it reached 5 per cent (Office of the Auditor General of Norway, 1999). Then, a rapid increase started and the share reached 15 per cent in 1985 and 33 per cent in 1990. For the next ten years a slight decline occurred only to be followed by a new increase after the turn of the century. In 2003, the total revenue of road tolls amounted to approximately NOK 3 billion, of which 2.3 billion were used for road investment (Bekken and Osland, 2004a). Hence, toll financing contributed to about one third of total road infrastructure investment (Ramjerdi et al., 2004), and 20 per cent of the total appropriations for extension, operation and maintenance of the national road network (Ministry of Transport and Communications, 2004b). During the last few years, toll funding has increased further to 37 per cent (2005) and to 45 per cent (2009 and 2010) of the total investment budget for national roads (Ministry of Transport and Communications, 2004b, 2008 and 2009). One third of the total revenue from all road toll projects in Norway is currently collected in the Oslo toll ring.

In Norway, as elsewhere, an important distinction goes between toll financing and road pricing. Whereas the purpose of toll financing is to finance or contribute to the financing of road

infrastructure, the purpose of road pricing is to regulate traffic and thereby improve the efficiency of the transport system by reducing congestion. Toll financing and hence toll roads and toll rings, have in Norway been implemented under the provisions of the Road Act for many years (see Section 2.2 below). Road pricing, however, was only introduced in 2001 through a new article in the Road Traffic Act, §7 a (Road Pricing). During the preparations of this amendment, the Ministry of Transport and Communications stated that road tolling and road pricing should not be used simultaneously in the same area (Ministry of Transport and Communications, 2000b). Through recent amendments to the Road Act, tolls collected may now also be used to finance public transport and toll charges may be differentiated by time of day. Legislation allows funds from toll projects to be used for public transport infrastructure, and as from 2008 also for public transport operation. Hence, toll financing can also contribute to economic efficiency. Only some Norwegian toll rings and no individual toll roads, however, apply time differentiation. So far, time differentiated road pricing has not been introduced in Norway.

2.2. Legislation

The Norwegian Road Act comprises the legal provisions for toll projects. Article 27 states that “... toll revenues can be used for all measures authorised by this law. Furthermore, the revenues can be used for investment in infrastructure and (permanent) installations for public transport on rails, including tram and subway. When part of a plan for a comprehensive and co-ordinated transport system in an urban area, tolls can be used for support to operation of public transport”.

All decisions regarding establishing of toll projects on public roads are to be approved by Parliament. Therefore all toll projects on national, regional and municipal roads are to be approved by Parliament. Tolling of private roads, however, is subject to approval by the municipality concerned.

Procedures for establishing toll road projects appear in guidelines published by the National Public Roads Administration (NPRA). Accordingly, the initiative for a toll road project has to be local, though the NPRA might stimulate such initiative (National Public Roads Administration, 2001; Office of the Auditor General of Norway, 1999). Furthermore, local consensus in respect of funding such project is important. The local authorities, which should be included in this decision, are municipalities hosting the project, other affected municipalities and the county council (National Public Roads Administration, 2001).

The guidelines presuppose that a toll road company is formed to manage the project. This company should be established at the latest when the application is submitted by the National Public Roads Administration to the Ministry of Transport and Communications for approval in Parliament (National Public Roads Administration, 2001). After approval of the application, the National Public Road Administration and the toll road company enter into a contract – the so-called toll agreement – specifying the conditions for the toll project (National Public Roads Administration, 2001).

2.3. Organisation

The toll company has the role as promoter of the toll project until the project is approved by Parliament. After approval, the main tasks of the company are to secure funding for construction of the project and to manage collection of tolls (National Public Roads Administration, 2001).

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