

**AN OFFER YOU CAN'T REFUSE ....**  
**ON THE ESTABLISHMENT AND DEVELOPMENT OF NORWEGIAN TOLL CORDONS**

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**Abstract**

The urban toll cordons usually result in some extraordinary public funding. In that sense they constitute a financial package created through a Dutch treat between the state and the motorists. The first packages were “road packages” in the sense that most of the funds were used for public roads. In the more recent packages, the funds are also used to finance investments in public transport infrastructure. Also, more actors are included in the Dutch treat such as the railroad authorities and local authorities.

With such an increase in the tolls collected from motorists, most of it in urban areas, and the change towards increased use of the revenue for investments in public transport infrastructure, it is worthwhile asking how this has been possible. In this paper, we will try to make some explanations to this.

The paper will be a case study of the toll cordons in the four largest urban areas in Norway; Oslo, Bergen, Trondheim and Nord-Jæren. The three first has been in operation for a long while, whereas the last was introduced a few years ago. The cordon in Bergen has been prolonged and the ring in Oslo might be prolonged.

We will examine the toll cordons by first describing the packages and comparing their contents. We will also show how they have evolved from simple “road packages” to more urban “transportation” packages, which also include investments in public transport infrastructure as well as roads. When describing the contents of the packages, we will focus on both the financing scheme and the use of the revenue. The financing scheme relates to the fares, discounts, location of the toll cordon, the impacts on different groups of users and other issues on how the funds are collected. The use of the revenue focuses on the type of projects, their size and to what degree they are earmarked for certain purposes or geographical areas.

Having described the packages, we will give an overview of the Norwegian historical and legal framework allowing such alternative financing schemes. This has also evolved over time, to some extent driven by political pressure created by the toll cordon packages themselves.

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At the end, we focus on the process leading up to the packages with the aim to see whether differences in the processes can explain the content of the packages. The processes are very much political taking into account the potential negative response by the voters as well as the limits on public funds. The differences in the packages both in their financing scheme and their use, we expect to be a result of political compromises. In the paper we will also show that, the packages can be view both in the terms of their efficiency in achieving the overall aims of improved mobility and their acceptability politically. We will also show that the financing scheme, different discounts and regulatory aspects are a result of political compromises taking equity and other issues into account.

The paper will be based on research we are currently doing for the Norwegian Ministry of Transportation and for the EU through the REVENUE project.

## 1. INTRODUCTION

Norway has a long tradition in toll financing of public road infrastructure, dating back to 1933. Traditionally, the financing has been related to isolated projects, such as bridges and tunnels. However, with the introduction of the first European toll cordon around a city centre, in Bergen in 1986, the tide shifted. Today, the 4 largest cities in Norway and several smaller have toll cordons. Currently, 1/3 of the investments in public roads are financed by tolls. Most of this comes from the urban toll cordons.

The purpose of this paper is to describe and interpret the development of these urban toll cordons or “transport packages”, which in accordance with their increased complexity is a more precise label. Our focus is on the development in the four largest Norwegian urban areas.

The following questions are addressed in this paper:

- Why have these toll cordons/transport packages been established and spread from Bergen to all the major urban areas in Norway?
- What are their characteristics in terms of the financing scheme and the use of revenue? This is what we later will refer to as the content of the packages.
- What similarities and differences can be observed between the packages, and how can these be explained?

The paper is based on the assumption that the processes leading up to the packages may be studied in terms of the relations between social institutions, “the rules of the game”, and the social and political “play of the game.” Social institutions, in the meaning of the norms regulating the relations between actors (such as organisations) and the distribution of resources (in particular economic resources), regulate the “play of the game” in transport politics. Hence, the outcome of transport politics in terms of the use of various policy instruments (such as taxation, investments and regulations) can be seen as a result of both institutions) as well as the political processes that take place within these institutions.

In this paper we will make a distinction between three aspects of the institutional environment:

- The legal institutions, as the norms and regulations set out by law. The fact that the Road Act over decades has allowed the establishment of toll-roads, in particular for bridges and tunnels as alternatives to ferries, is of outmost importance here.

- The economic institutions, concerning the economic structure of the incentives between the different actors. These are of course related to the administrative structure and jurisdictions. In Norway these are characterised by the following: The responsibility for roads is divided between the State, the county councils and the municipalities. However, they all receive most of their funding from the State, as the level of local taxes is relatively low in Norway. Legally, the revenue from toll roads can only be used for investments. Financing local public transport, on the other hand, is the responsibility of the counties. Since the mid 80s this has been a part of the free transfers from the State to the Counties, without any earmarking for public transport. Moreover, Norwegian transport policy has for a long time been characterised by the politics of local representation; politicians merely represent their region/county. The national authorities (The Public Roads Administration and the Ministry of Transport) have an important role in informing these processes with stronger emphasis on efficient priorities.
- The procedural aspect, concerning the procedures for the decision-making process. The two main issues here are, that toll financing requires local initiative and consensus and secondly that proposals for new toll roads or substantial changes to the existing toll schemes, must pass Parliament as a separate bill.

These are the external conditions affecting the development of urban toll cordons since the early 1980s. The development took place within the context of the interplay between the institutional characteristics and the local processes.

## **2. THE FORMATIVE MOMENT — EVOLUTION FROM TOLL ROADS ON BRIDGES TO URBAN TOLL CORDONS**

The formative moment of the current scheme of urban toll cordons in Norway was the establishing of the toll ring in Bergen. It was a formative moment in Rothsteins (1994) meaning of the concept, as a period when new political institutions was created and the rule of the game of urban transport politics changed. This gave certain organisations an advantage in the future game of power and urban transport politics.

The background was the major congestion problems in the larger cities from the mid 70s, in particular in Oslo, but also in Bergen. At the same time, the Keynesian counter-cyclical macroeconomic policy from the mid 70s was abolished and stronger emphasis was put on reducing the growth of public expenditure. This limited the public funds for investments at the same time as the traffic increased. Moreover, Norway with a small population of about 4 million inhabitants sparsely populated over 324 000 square kilometres, has a great demand for public infrastructure. The political system has traditionally had a strong rural and regional representation. Thus, there was little potential for increased public funds for investments in the urban areas with increasing problems of congestion.

In this context, an initiative was taken by the Public Roads Administration in Bergen. They formulated the problem as follows: We have the plan for building a suitable road system around the city. We lack the necessary funds, but we also have a plan for how to get the funding – a toll ring. The Public Roads Administration in Bergen presented their solution on an informal meeting with the leaders of the three most significant parties in the Bergen City Council; the Labour Party (social democratic), the Conservative Party (høyre), and the Christian Democratic Party. The Labour Party and the Conservative Party, in most cases opponents in urban politics, created a strong basis for a broad consensus in local

transport policy. The meeting was informal, but it represented the point of departure for an offensive information and mobilisation campaign from the Public Road Administration towards media and the citizens.

The campaign was successful, also in relation to the central government. The result was the establishing of the toll ring. Several elements were important for its success; the local congestion problems, the leadership of the public road department (Langmyhr, 1997), the high level of trust in the relation between the bureaucrats at the road administration and the local politicians, and not at least Bergen is the capital of a region with a long tradition and experience of toll roads both on bridges and on tunnels (Bekken and Osland, 2004). The news was of course the establishing of a toll cordon itself in opposition to the existing toll roads.

However, the establishment of the toll cordon had consequences far beyond its effect on road investments in the city area. It changed the “rule of the game” and opened new ways to fund urban transport infrastructure. Of particular significance was the fact that the toll cordon in Bergen was backed by a promise of extraordinary public funds. There was an informal agreement that the State should grant the same amount of money for infrastructure investments as it was expected that the toll cordon would generate. This notion of extraordinary public funds was of importance for its role as a “model” for other urban areas.

Since the Bergen toll cordon, such schemes have been introduced in several urban areas. The first to come after Bergen was the Oslo toll cordon. After the two largest cities had introduced the scheme, it should be no surprise that Trondheim (the third largest) also introduced a toll cordon. Thus by 1992, all the largest urban areas had introduced such schemes. We will now give an overview of the development of these toll cordons, starting with a description of how the contents of the toll cordons have changed during the last decades. As we will show in the next chapter, the evolution can be grouped into three generations.

### **3. THE CONTENTS OF THE PACKAGES – THE CONTRIBUTORS ARE ALSO THE BENEFICIARIES DIRECTLY OR INDIRECTLY**

When describing the contents of the packages, we will focus on two issues. Firstly, we look at how the tolls are collected (the financing scheme). Secondly, we look at how the funds are used. To some extent, these are linked to each other. The established principle for Norwegian toll roads was that the beneficiaries should be the contributors, and the first toll cordons implied a modified version of this principle in the sense that when tolls were collected from the motorists, the funds are also used on roads. However, for some of the packages, and to an increasing extent, this is no longer the case. Funds are currently to an increasing extent used for public transport investments. This is based on a principle developed and applied on Norwegian road funds. When alternative uses of the funds provide a better solution to the overall transportation, the funds can be used for such purposes. This however only applies to investments in infrastructure.

#### **3.1 Financing scheme**

The financing scheme of the urban toll cordons in Norway differs on several aspects. Table 1 provides a brief overview of the different financing schemes.

*Table 1. Comparison of the financing scheme of Norwegian urban toll cordon packages.  
Source: Bekken and Osland (2004)*

		Greater Oslo	Bergen area	Trondheim area	Nord-Jæren area	Norway – all toll roads
Single fare rush hour private car, EURO	Pr 31.12.2002	1,8	1,2			
	Pr 01.11.2004	2,4	1,8	1,8	1,2	
Reduced fare outside rush hours		No	No	Yes	Yes	
Trips through the toll cordon in 2002 (mill.)		89	20	20,5	20,4	228
Revenue in 2002, EURO (mill)		127,6	19,1	20,5	9,9	389,3
Average fare per trip, EURO	2002	1,4	0,9	1	0,5	1,7
	2003	1,5	1			N/A
Maximum yearly payload per private car in 2002, EURO (maximum trips per month to pay for)		500 (yearly pass)	550 ( 50 )	780 ( 60 )	550 ( 75 )	

This table show that the average fare level in Oslo is almost three times the fare level in the Nord-Jæren area, whereas Oslo at the same time has the lowest maximum yearly payload of all the areas.<sup>3</sup> This is the result of Oslo having an annual pass, whereas in Nord-Jæren motorist must pay for up to 75 trips per month. Thus, when considering Oslo as a road pricing scheme some adverse effect are present. The daily users pay the least, whereas infrequent users pay the most, with no regard to the time of the day. This is further enhanced by the recent fare hike in Oslo, which only applied to the single fare, not to pass holders.

The Trondheim toll cordon has highest maximum payload. This scheme is also the one resembling road pricing to the greatest extent. One of the reasons for this is a high focus on equity. This has resulted in a zonal system, where more motorists pay and at the same time some fare differentiations has also been adapted.

In the next chapters, we will discuss some of the reasons behind the development in the schemes. It is also worthwhile noting that in Nord-Jæren the income has been much lower than expected. As a result, the politicians have agreed to drop the fare differentiation and also to hike the fares by 30% from January 2005.

### 3.2 Use of revenue

The type of projects, their size and to what degree they are earmarked for certain purposes or geographical areas are important factors to consider in relation to the use of the revenue. There has been a clear change towards more investments in public transport infrastructure. As described above, the revenue from the first toll cordon in Bergen (est. 1986) was solely used for investment in road building. The second generation of packages (Oslo package 1, 1989 and the Trondheim package (1991) had earmarked shares of 10-20% for public transport investments. The newer packages, what we have here labelled the third generation (Oslo package 2, 2001, the Nord-Jæren package 2001 and the Bergen programme, 2003, all have a heavy emphasis on public transport, with investment shares between 50 ad 100% for public transport. In the following, we will describe this development more thoroughly.

#### The Oslo packages

The toll cordon in Oslo was first intended as an ordinary toll road, financing the tunnels below the city centre, relieving the downtown through traffic. However, before it was es-

<sup>3</sup> This is calculated from the fare during rush hours with the available discounts and the maximum number of trips to pay for per month.

established, the municipality of Oslo joined forces with Akershus County and opted for a package to finance several other projects as well. One of the reasons was the lack of sufficient public funds. In the first package, Oslopakke 1, there was a fixed share of 20% earmarked for public transport investments. In 2001, the new package, Oslopakke 2 (O2), passed Parliament. O2 is an addition to the current Oslopakke 1 and consist of an increase in the fare of the toll cordon of 0,25€ per trip and an increase in the public transport fare ticket of 0,1€ per trip. All the revenue accruing from the new package is earmarked for public transport investments.

#### The Bergen toll cordon (1986-2002) and the Bergen programme (2003-)

The Bergen toll cordon was the first of its kind in Europe. The goal was to speed up a solution to the traffic problems in Bergen. Thus, the focus was on road investments. The new Bergen programme is based on a political compromise between the public transport supporters and the road supporters. The revenue is split between road and public transport infrastructure. The public transport share is planned to finance the development of tram in Bergen.

#### Trondheim toll cordon

In line with the other early packages, the Trondheim toll cordon was a road investment package. However, a fixed share of 20 % was earmarked for public transport, safety or environmental investments related to the traffic.

#### Nord-Jæren package

This package is of the new generation including both public transportation (PT) investments as well as road investments. The PT part is primarily related to local rail investments.

### **3.3 Summary - the current content of the packages**

To summarize:

- There is a general tendency towards increased investments in public transport.
- There is a tendency that these packages ha been prolonged, enhanced to new generations, while initially set up for a 15 to 20 years period.
- There is a weak tendency towards elements of congestion charging, most clearly developed in Trondheim.

However; on important dimension, we can observe continuity rather than change.

- The revenue is solely used for infrastructure, not operation.
- In most packages, there has been an emphasis on large project with strong symbolic power.
- Although addressed in the initial phase, such elements as restrictions on car use, parking policy etc are not included in the packages when these have passed the political process.

These similarities and differences can be understood in terms of the economic, legal and procedural institutions, one the one hand, and their relations to and interplay with the local processes and coalition on the other hand. Table 2 summarizes the content of the packages.

*Table 2. Summary of the contents of the packages. Source: Bekken and Osland (2004)*

	Bergen toll cordon	Oslo package 1	Trondheim toll cordon	Oslo package 2	Nord-Jæren package	Bergen programme
Share road vs public transport	Road package	Road package (20% for PT)	Road package (20% for PT and env.)	Public transport package	Public transport package (65%)	Combined package (50/50)
Regional ear-marking	No	Yes (60/40 Oslo/Akershus)	No	Unspecified	Yes	No
Fare level (relatively)	Medium	High	Medium	High	Low	Medium
Elements of congestion charging	No	No	Weak	No	Weak	No

#### 4. THE INSTITUTIONAL FRAMEWORK AND LOCAL PROCESSES CREATING THE PACKAGES

As mentioned, the legal framework for the toll cordons was established with the toll cordon in Bergen. However, the legal framework has changed on several occasions. In the early 1990s the possibility to impose differentiated fares at different times were introduced in the road act, yet on the condition that the differentiation would not negatively influence revenue. Although this change, as well as the possibility to use road investments alternatively for public transport purposes has increased the flexibility of the packages, the major legislative change came in 2001, when road pricing were accepted in the Road Transport Act. This has made it possible, in principle, to introduce road pricing, and a more flexible use of revenue. The initiative however must be local.

The local processes leading up to the packages take place within the framework above. The legal aspect defines some approaches as legal and others as illegal. The procedural and economic aspects make certain alternatives more viable than others. Nevertheless, the outcome has proven to be very dependent on the different constellations of actors involved in the local decision-making process and the compromises established. Illustration 1 presents our notion of the relations between external conditions in terms of various institutions, and the local processes.

**Erreur ! Des objets ne peuvent pas être créés à partir des codes de champs de mise en forme.**

*Figure 1: Three generations of packages and the development of the legal, procedural and economic institutions. Source: Bekken and Osland (2004)*

In the following, we shall give a short presentation of characteristics of the local processes:

##### 4.1 The Bergen political compromise

When the first toll cordon was established in Bergen in 1986, the Public Roads Administration locally came with the initiative. At the same time a coalition between the major political parties was established.

In 2003, the toll cordon was prolonged through the Bergen Programme. This new package has one very heavy public transport infrastructure investment; a new city tram (“By-banen”). Two characteristics of the Bergen Programme is of major interest here, the inclusion of the city tram, and secondly, the reasons why the existing financing scheme has been kept instead of some of the proposed more advanced schemes more similar to road pricing.

The main supporters of the city tram were the politicians from the centre and left wing parties. They managed to have the tram “hooked” on the planned road investments, of which almost all politicians were supporters. The broad compromise for the entire package has been based on this combination of road investments and one large public transport investment. The proposal has met resistance from the Public Roads Administration both locally and nationally. They are critical to the alternative use of road funds, questioning whether the city tram is a good alternative to road investments. This disagreement is a distinctive feature of the Bergen Programme compared to the other cities. The dispute has not yet been solved.

Concerning the prolongation of the existing toll collection scheme, this has been the result of the fact that one of the major parties in the coalition is an opponent to anything resembling road pricing. Some of the other parties have also been sceptical. The alternative to prolongation was to introduce a system with two rings and differentiated fares. The expected potential negative response by the voters has also influenced the decision. While the city tram has been a place where the political parties have been able to mobilise voters, they have decided to step carefully on the issue of road pricing.

#### **4.2 The Oslo packages – a result of professional-administrative cooperation**

Concerning Oslo package 1, we have not been able to point out one single initiator as in Bergen. Rather, the description given by Sørli (2000), shows a process involving many actors (including two county councils; Oslo and Akershus, as well as involvement from various levels of state administration), and hence of greater complexity as well as fragility than the process in Bergen. The alliances have been broad both professionally and politically, and also stretched outside Oslo, to the neighbouring county of Akershus. These actors have been able to agree on an earmarked use of the revenue within the different counties (60% in Oslo, 40% in Akershus).

Oslo package 2 is a pure public transport infrastructure package. The initiative originally came from the National Railroad Authority (Lerstang and Stenstadvold, 2003). The project has been supported by the common interests among several actors with an interest in improving public transport in the region. In contrast to the situation in Bergen, all actors agree that a good public transportation system is essential for the overall transportation in the region. A professional-administrative cooperation has been established. This assures that most of the controversies are solved internally.

However, one observation must be commented. In Oslo package 2, restrictions on car use were recommended to make the investments efficient in social economic terms. Yet, such restrictions have not been included in the package. This can be explained by a situation similar to the one in Bergen. The need for local compromise gives certain actors a veto in the processes. As a result there is an incentive structure which probably leads to over-investment as each actor (organization) will focus on projects with strong symbolic effect with as small political costs as possible. With a veto for all actors making each able to



jeopardize the notion of local agreement, we can expect that the package will only be accepted if all actors have some symbolic projects included.

### **4.3 The Trondheim package – a result of competition over scarce resources**

Locally, the process behind the Trondheim package is characterized by a competitive situation with the other large cities. The competition was for the scarce funds allocated to road infrastructure at the national level. There was a local understanding that introducing user fees was a way to “buy a better place in the line” waiting for public funding. This was a result of the fact that both in Bergen and in Oslo, the introduction of toll cordons triggered extraordinary public funding. Thus, they would be in a competitive disadvantage over public funding if they did not introduce a toll cordon.

As in Bergen, the local Public Roads Administration was the initiator together with important politicians. With the general focus on environmental issues in the late 80s, 20% of the funds were earmarked for such issues including public transport and safety. Our impression is that the politicians, contrary to the situation in Bergen, have been very interested in the toll collecting scheme ever since the cordon was introduced. As a result, the system has been revised making it quite advanced with elements of congestion charging. This is also a result of local professional interest in the field (Langmyhr, 2001).

### **4.4 Nord-Jæren – support based on a broad scope of revenue use and low fares**

The toll cordon in Nord-Jæren came more than 10 years after the other packages. As in Bergen and Trondheim, the initial initiative in the 1980s came from the Public Roads Administration with support from the county council (Langmyhr, 1997). The first initiatives did not succeed, partly due to the competition between the two large cities in the area, Stavanger and Sandnes, and their opposition against the idea. However, from the early 90s with the processes related to developing a coherent land use policy in the region (Lerstang og Strenstadvold, 2001), also including larger investments in rail infrastructure, the situation changed and a broader political consensus was established. The toll cordon covers a very large area. The fares introduced were low, with some differentiations making the fare in the rush hours somewhat higher. Due to unexpected low revenue, the fares increased and the differentiation were abolished in 2004. A large amount of the package is earmarked for railroad investments. In sum, the situation changed when Stavanger accepted the proposed scheme. Although Sandnes was still in opposition, the Parliament did not turn the proposition down because the other municipalities affected by the cordon were positive to it.

## **5. SUMMARY AND CONCLUDING REMARKS**

The development of the packages in terms of their content is characterised by both continuity and change. The continuity can be summarized as:

- Large scale projects in which actors have ownership
- Revenue solely used for infrastructure purpose
- Few or no measures that represents any strong political or economic costs for the involved actors, such as restrictions on car use or other measures that could reduce further need for investments

These similarities refer to certain institutional characteristics:

- The Legal framework has not allowed the revenue to be used for other purposes than infrastructure investments until the opening for Road Pricing in 2001.
- The combination of procedural rules (local consensus) and economic incentives (local competition on scarce state budget) leads to a decision making situation that induce the actors to focus on “fresh” money for infrastructure purpose, using toll revenue rather than financing operation over their own budgets. This also explains the reason for the lack of interest in road pricing schemes.

The variation between packages is mostly related to changes over time, and can be summarized as an increased emphasis on public transport.

- The second generation of packages (late 80s and early 90s) included earmarked revenue on 20 % for environmental purposes and public transport
- The third generation of packages (from the end of 90s) included large scale investments in public transport.

These changes over time, is related to the increased public and political focus on environmental issues in Norway (as well as in the rest of Europe) in the late 1980s (Jansen, Osland and Hanf, 1998), an engagement that in transport policy was understood as an argument for increased use of public transport. Moreover, what one can observe in the third generation packages, is that actors representing public transport interests enter “the field of package politics”, using the established toll cordons as a point of departure for a new era of investments in public transport (Bekken and Osland, 2004).

One can also, however, observe geographical variation between the packages in particular in terms of variation in fare level and revenue use. Partly, this is a variation which reflects the planned investment level, related of course to challenges in the transport system. But also various local compromises concerning equity consideration,. It is particular in Trondheim one can observe a clear tendency towards time-differentiated fare levels, a development interpreted as a result of the significance of both the professional and economic interest in technical solutions on these problems in the city.

As to the question posed in the beginning of this paper; why has the use off toll cordons spread from city to city, some conclusions can be drawn. After the establishment of the toll cordon in Bergen a new dynamics was established; for many local actors toll cordons/transport packages has been viewed as a way of combining extraordinary funding from car-users and aiming at extraordinary funding from the state, subsidiary at least to get a commitment from the government that important investments in the local transport system will have high priority. On the other side, also representatives in government and central administration, see the advantages of such transport packages for reducing the pressure on the transport budget, and hence leaving room for other projects.

Another clear feature from our study is that the scope for the legitimacy of the packages has been expanded. While the first packages based their legitimacy on being road packages financed by motorists, the new “tradition” of packages base their legitimacy also on issues such as public transport and the environment. This way they are also supported by other groups. At the same time this erodes the legitimacy built on the direct link between the motorists and the benefit of the road packages.

In the current situation, the future for new packages is unclear. On the one hand, initiatives for establishing a fourth generation packages can be observed. These include road pricing, increased use of revenue for other purposes than infrastructure investments, and also other

elements of transport policy (e.g. parking and land use policy) in the packages. On the other hand, significant actors, not the least among politicians from conservative and neo-liberal wing, strongly oppose such a development, and emphasise that such packages should be either abolished, or subsidiary; one should return to the traditional close link between contribution and beneficiaries of the "old" toll roads for road construction.

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