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# The Credit Dynamics Of Congestion Charging

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In the view of Standard & Poor's Ratings Services, public and political acceptability remains the key constraint to the broader adoption of urban road user charging. Standard & Poor's international review of this developing area of transport policy and finance has led to a number of other key conclusions:

- The launch of congestion charging in London could set the trend for other European cities to adopt road pricing as a means of paying for public transport and highway enhancements;
- Insulation from political interference, revenue dependability, flexible transaction structuring, and public acceptability are key credit determinants for any urban road-user charging initiative;
- There is a significant variance in scheme operating costs that is dependent, to a large extent, on the nature of the selected tolling technology and the way in which it is deployed;
- Another significant cost driver is human resources. These costs can be challenging to scale before scheme launch, for example where labor-intensive customer interfaces such as call-centers are provided;
- Two or three years of intensive preparations was the typical amount of time devoted to scheme planning and public education activities; and
- Technology itself does not appear to be a constraint in terms of the deployment of urban electronic toll collection solutions. Systems integration and the servicing of "back office" functions, however, retain risks that need to be fully understood or mitigated if the credit quality of urban road user charging-based schemes is to be considered investment grade.

The study, which examined urban road pricing in a number of countries, analyzed the credit dynamics of congestion charging and isolated the key credit drivers likely to affect city tolling schemes developed specifically for infrastructure investment purposes. The study also highlighted some of the challenges relating to the accurate prediction of driver behavior under urban tolling regimes. A detailed assessment of market--and therefore revenue--risk will remain central to credit analysis.

This article considers the different aspects of Standard & Poor's study of the sector. It highlights the main factors that could affect credit quality, grouped into four key categories.

## The Congestion Charging Review

Standard & Poor's review considered each of the eleven urban road-pricing schemes in the world, including congestion charging in London. These schemes are summarized in table 1. The table also includes two projects that are closer to implementation than many proposals around the world: A trial scheme about to be launched in Stockholm; and plans for a referendum on congestion charging in Edinburgh. Reports suggest that a number of other European cities, perhaps as many as 32, are actively considering road pricing as a realistic policy response to congestion management, environmental

concerns, or requirements for significant investment in urban transportation.

**Table 1 Global Congestion Charging Schemes**

| Location | Year of Launch | Description | Comments |
|---|---|---|---|
| Singapore | 1975 | Initially a coupon-based Area Licensing Scheme, replaced by electronic road pricing in 1998. Prices vary by time of day | Uses prepaid smart cards. Rates revised periodically to maintain traffic speeds |
| Hong Kong | 1983 | Electronic road pricing scheme piloted from 1983-1985 | Demonstration project shelved despite meeting all requirements. Toll tunnels link Hong Kong Island and Kowloon Peninsula |
| Bergen, Oslo, and Trondheim, Norway | 1986, 1990, and 1991 | Urban toll rings | Early Norwegian toll ring revenues were dedicated to highway investment. The infrastructure improvement packages were subsequently extended to include investment in public transport services and cyclist/pedestrian facilities |
| Kristiansand, Norway | 1992 | Partial toll ring introduced in 1992 | A complete ring with five tolling stations opened in 2000 |
| Rome, Italy | 1998 | Electronic gates control access to a 6 square kilometer Limited Traffic Zone | City-centre access control introduced in 1989. Pricing policy for nonresidents introduced in 1998 |
| Stavanger, Norway | 2001 | Urban toll ring with 21 stations. Prices vary by time of day | Regional road pricing scheme with the neighboring city of Sandnes |
| Durham, U.K. | 2002 | Small, single -street scheme using a rising bollard linked to a ticket machine | Motorists pay £2 to leave historic central area containing the city's castle and cathedral. |
| Namsos, Norway | 2003 | Urban toll ring | Small town with a population of only 12,000 |
| London, U.K. | 2003 | See table 2 | See table 2 |
| Stockholm, Sweden | 2005 | Electronic toll collection with two zones. Prices will vary by time of day | This is an 18-month congestion charging pilot project. Residents will vote on retention of the scheme in a referendum scheduled for 2006 |
| Edinburgh, U.K. | N/A | A referendum on a preferred cordon - based charging scheme is scheduled | N/A |

N/A--Not appliable.

**Table 2 The London Congestion Charging Scheme***

| Scheme parameters | Description/comments |
|---|---|
| Launch date | Feb. 17, 2003 |
| Capital cost (Mil. £) | 230 |
| Primary policy objective | Traffic reduction |
| City center congestion zone size (square km) | 21 |
| ***Planning*** | |
| Timescale (years) | 2.5 |
| Staff resources | 100 |
| ***Tariff*** | |

| | |
|---|---|
| Prepayment | £5 for travel 7 am–6.30 pm Monday–Friday |
| Postpayment | £5 up to 10 pm on day of travel (travel during same times as above); £10 after 10 pm but before 12 pm |
| ***Penalty charge (£)*** | |
| Standard rate | 80 |
| If paid within 14 days | 40 |
| Failure to pay within 28 days | 120 |
| ***Performance*** | |
| Operational | 100,000 paying customers/day; 40,000 prepaid customers/day; 2,000 violators/day |
| Financial | Net annual revenue of £70 million, about 70% of revised forecast |
| ***Payment methods (% of payments made through each channel)*** | |
| Retail outlet | 37 |
| Internet | 25 |
| SMS text message | 18 |
| Call center | 14 |
| Prepayment (fleet operators) | 6 |
| Post | 0 |
| ***Impact after 3 months (% change)*** | |
| Traffic entering zone | (20) |
| Traffic within zone | (16) |
| Average speed of all vehicles | 10-15 |
| Average speed of buses | 20 |
| Bus patronage | 14 |
| Bus journey reliability | 25 |
| *Scheme technology: 688 fixed cameras (and a range of mobile facilities) record the licence plates of drivers entering the zone, linked to automatic number plate recognition software. The number plates are then matched against a database of customers who have registered to pay. Number plates of those who have not registered are checked against the motor vehicle registration database and penalty notices are sent to violators. | |

## Public Acceptability

The introduction of any new pricing policy by itself is unlikely to engender public support. The motivation and focus for many congestion charging publicity campaigns, therefore, is on public education, explaining why some sort of pricing solution is required in the face of increasing traffic congestion. These campaigns can be time-consuming and resource-intensive. Before the launch of road user charging in London, for example, leaflets were delivered to 3 million local households and 35,000 information packs were sent to vehicle fleet operators. Information was also made available via a call center, media advertising (TV, radio, newspapers, and magazines), the internet through a dedicated website, outreach meetings, and e-mail distribution. Indications are that the time and money spent on this campaign contributed significantly to the success of the London scheme.

Even with publicity campaigns and driver education initiatives in place, road tolling may remain unpopular. Some of the more vociferous complaints can

come from local retailers fearing a negative impact on their business opportunities. Evidence to date regarding reduced commercial takings within charging zones appears mixed, however, and it can be difficult to isolate the impact of road pricing on businesses from other trends such as new retail start-ups, general economic slowdown, and transportation supply changes.

There is important evidence, however, that public opinion can change over time. For illustration, a sample of public opinion results is presented in table 3.

**Table 3 Changes in Public Opinion Regarding Congestion Charging Schemes**

| | Stockholm | London | | Trondheim | | |
|---|---|---|---|---|---|---|
| (%) | Prelaunch | Prelaunch | One year after launch | Prelaunch | One year after launch | Five years after launch |
| Against road charging | 55 | 50 | 34 | 72 | 48 | 36 |
| For road charging/don't know | 45 | 50 | 66 | 28 | 52 | 64 |

There is further evidence that support for congestion charging is strengthened in circumstances where scheme revenues are hypothecated (ring-fenced) for well-defined, local transport--highway and particularly public transport--investment. Experience from Bergen in Norway suggests that additional public support will result from infrastructure improvements that are very visible before, or shortly after, the introduction of pricing.

The transparency of the investment decision-making process also appears to contribute to a lowering of public resistance to tolls. Local voters may, however, need assurances that congestion charge revenues will accumulate in addition to traditional funding sources, not act as substitutes for them.

Public opinion will remain a major factor behind the more widespread deployment of road pricing in urban areas, and the extent of public support will be an importnat consideration in any analysis of a scheme's credit strength. In the past, technology issues were identified as the major barrier to rolling out congestion charging schemes in city centers. This is no longer the case, and the emphasis has shifted to public and political acceptability as the key constraint.

## Sustained Political Commitment

The challenges of securing long-term, cross-party political support for urban road pricing are indicated by the fact that a number of schemes have been developed only as demonstration or plot projects. The Stockholm initiative, for example, will run for 18 months from spring 2005 before city residents get to vote on its continuation or cessation.

Road pricing trials were conducted in Hong Kong from 1983-1985, but the demonstration project was stopped owing to public resistance and the government then concluding that traffic growth could be accommodated until some time after 2006. The electronic pricing trials, however, are reported to have met all of the design criteria established for them.

In Norway, political commitment was secured through an agreement by the main political parties not to make the "toll rings" a political issue. This united stance left scheme opponents with limited recourse, even though opinion polls indicated that only one city (Bergen) had a majority in favor of road pricing.

## Revenue Risk

Standard & Poor's credit analysis looks very carefully at the revenue predictions from urban tolling schemes. Revenue dependability is identified as

a key credit strength. In this context, the Oslo tollring operator Fjellinjen AS (AA/Stable/--) benefits from a history of tolling experience and stable traffic growth. Future transactions with investment-grade rating aspirations will have to demonstrate particularly robust revenue predictions against a range of downside scenarios, perhaps through the support of existing revenue sources, security protections, and/or other structural credit enhancements.

Accurately predicting the consumer response to urban tolls is a significant undertaking. This response is likely to differ in the short term (incremental adjustments to travel behavior) from the long term (possible retiming and/or relocation of activities) and will depend on factors including drivers' perceptions of benefits versus the tolling costs, the nature of the tolling regime, the availability of local alternative travel options, and a host of other factors, some of which are difficult to assess before a scheme's launch. In London, for example, a number of city-center car parks have recently reduced their daily fee by the equivalent of the congestion charge cost, effectively re-establishing the travel costs drivers experienced before the scheme's introduction.

Early indications suggest that there may be a tendency to underestimate the traffic-reduction impact of congestion charging and, therefore, overstate revenues. This has happened in the U.K. with the London initiative. Net revenues in London are reported to be about 54% of forecasts (70% if adjustments are made for a generous residents' discount scheme not envisaged when the revenue predictions were formulated). Similarly, following the introduction of electronic road pricing in Singapore, observed traffic volumes were reported to be lower than forecast.

## Financial Flexibility: A Key Credit Strength

The difficulty of predicting drivers' responses to urban tolling is increased by the way in which behavior patterns evolve as consumers get used to new pricing regimes and experiment with schemes. This demands a degree of financial flexibility in transaction structures and the ability to adapt scheme parameters to meet customer needs. A number of electronic toll collection facilities have observed changing demands being placed upon their call centers, for example. In some cases customer contact regarding account management or scheme regulation has fallen to one-half its initial levels within months. Similarly, demands placed on enforcement regimes or the payment channel mix employed by customers may differ from expectations or demonstrate rapid evolution. A surprising element of London's congestion charging scheme was the high utilization of SMS text messaging as a payment vehicle. After two months, phone-based text messages accounted for 15% of all payments, rising to 18% one month later.

In Norway, the revenue surplus from the Oslo toll ring contributes to the funding of local transport improvement packages. This contribution is entirely discretionary, however. The operating company therefore retains strong financial flexibility because proposed contributions can be deferred. This flexibility is a major credit strength for the scheme. In order to be considered to have investment-grade credit quality, future road user charging schemes will have to develop similar degrees of flexibility to ensure that they retain the ability to respond to unanticipated and/or evolving consumer behavior.

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