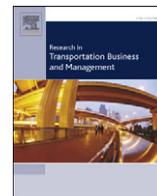




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# Research in Transportation Business & Management



## Property tax on privatized roads

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### ABSTRACT

Roads cover a significant fraction of the land area in many municipalities. The public provision of roads means this land is exempt from the local property tax. Transferring roads from public to private ownership would not only remove maintenance costs from city budgets, but increase potential property tax revenue as well. This paper calculates the value of the land occupied by roads in sample cities and determines the potential revenue increase if they were subject to property tax. Further calculation computes the extent to which the property tax rate could be reduced if the land values of roads were added to the tax base.

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### 1. Introduction

Street maintenance is a significant part of many municipal budgets. Especially in older cities, much of the infrastructure is reaching an age where replacement or significant rehabilitation will soon be needed. At the same time, with recent economic conditions the fiscal health of many city governments is in question. Raising property taxes to cover increased street maintenance needs is likely not politically feasible in harder times, and may not be economically feasible given the recent spate of foreclosures. Several alternative instruments are available to finance transportation projects. Generally, these fall into the categories of user fees or value capture. User fees are charged to drivers as tolls, and less directly as vehicle registration fees. Value capture strategies, such as impact fees and land value taxes, are charged to land owners whose parcels derive value from the accessibility provided by the street network.

A third alternative is to lease or sell the transportation network to a private operator, who would manage and maintain the system and likely charge tolls in some form to cover costs. Such arrangements are becoming more common, especially for large, capital-intensive projects for which it is difficult to obtain construction funding. The most obvious effect, aside from the appearance of tolls on facilities which were previously untolled, is the transfer of the burden of maintaining the system from public agencies to private entities. Another ramification, which is the focus of this paper, is that if ownership of roads was privatized in addition to operation, the owners could be charged property taxes. This would give governments

more flexibility to fund other programs, or to reduce property taxes on residents and other businesses.

### 2. Private operation of roads – Proposals and practice

Private operation of roads in the United States is rare, but discussion of privatization as a viable option has recently increased. Historically, privately-run toll roads were much more common, but today they are limited to a few corridors and major bridges. The usual motivation for privatizing is that a for-profit business would have a greater incentive than a government agency to minimize costs and operate efficiently. Gómez-Ibáñez, Meyer, and Luberoff (1991) concluded that taxpayers would come out ahead in such an arrangement, with operating companies contributing to increased federal and state income taxes and using taxable financing for construction.

#### 2.1. Extent of use

In many countries, freeways are operated by private sector firms under a franchise or concession agreement with the government, which usually retains underlying ownership of the road (Daniels & Trebilcock, 1996; Poole, 1997; Poole & Fixler, 1987). For example, as of 2004 more than 37% of motorway length in the EU25 plus Norway and Switzerland was under concession, and 75% of that was privately operated (Albalade, Bel, & Fageda, 2009).

There is limited experience in the United States with contracting operation of existing roads (Engel, Fischer, & Galetovic, 2002), which has not been without controversy. Notable examples include the long-term leases of the Indiana Turnpike and Chicago Skyway (Samuel & Poole, 2005). New toll roads built and operated by private firms are much more widespread, and include the Dulles Greenway

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and Pocahontas Parkway in Virginia, and the Adams Avenue Turnpike in Utah. This experience applies well to toll roads, and variants such as high occupancy/toll (HOT) lanes (Poole, Orski, & R. P. P. Institute, 1999) and truck-only tollways (Samuel, Poole, & Holguin-Veras, 2002). California's SR-91 median toll lines were privately built on public right-of-way, and later bought out by a public toll agency. Presently, the MnPASS HOT lanes in Minnesota manage toll collection under a concession to private organizations. A large share of the few new limited-access roads built in the United States has adopted the toll model, and more could follow suit (Fields, Hartgen, Moore, & Poole, 2009; Poole & Samuel, 2006; Poole & Sugimoto, 1995; Staley & Moore, 2009).

In these examples, road operation has been commercialized, but the underlying land is retained by a public agency. It is generally more local levels of government, such as cities and counties, that collect property taxes, and higher levels of government are exempt. Existing public highways owned by state transportation departments occupy land in several local jurisdictions, but do not compensate them in the form of property taxes. Similarly, the federal government does not pay tax on the land or buildings occupied by its post offices or court houses. In contrast, if the road facilities and the land beneath them were owned by a private firm (either the operator or another party to whom the operator pays rent), they would be taxable. Transferring land ownership in addition to road operation to a private firm would likely prove even more controversial, but it would provide an additional opportunity for economic efficiency gains. In the same way that charging tolls can improve the allocation of scarce road capacity, charging property tax on roads could improve the allocation of scarce land area within a city.

## 2.2. Economic and political feasibility

Privately-owned local streets do exist, such as those under the control of neighborhood associations, as is common in St. Louis, Missouri, but the economic ramifications of private construction and operation of major highways have received more attention in the literature. In particular, a build-operate-transfer business model has been considered, in which a private company would build the facility, operate and maintain it for a specified time period, and then turn it over to a public agency (Tsai & Chu, 2003; Yang & Meng, 2000). The results of a model created by Viton (1995) concluded that the prospects of profitable operation of a private intercity route are good, but the money-making opportunities with urban routes are more limited. The model only considered private routes operating in direct competition with public highways, and did not evaluate local roads or private monopolies. However, only recently has the electronic toll-collection technology advanced to the point that charging for minor streets has become a possibility.

Roth (1996) notes the separation evident in the public sector between funding and responsibility for maintenance and safety. In contrast, a private operator would incur all liabilities in exchange for the ability to retain all profits. This single point of responsibility would likely result in lower costs, better response to needs for improvement and more efficient investments. However, Friedman and Boorstin (1996) note that these improvements would be much more difficult to realize on intra-city networks than on longer-distance routes. The logistics of charging for use are more challenging, and the natural monopoly of a precise route plays a greater role when access to parcels takes precedence over traffic throughput.

Social equity concerns with regard to privatization are also greater lower in the functional hierarchy of roads, as accessibility becomes more important than mobility. Local streets provide benefits above and beyond vehicle throughput and have uses aside from deliberate automotive trip-making. As these benefits accrue more to parcels than to users, public agency provision is more reasonable for local streets than for major highways, and the incentives for privatization may be less.

Based on historical experience (Levinson, 2002), implementing tolls on existing untolled roads is likely to be politically difficult and unpopular. A factor that may improve acceptability is the presence of competition. This is observed when a toll highway runs parallel to a public road, and users can determine whether they value the likely faster trip on the toll road enough to justify paying the toll. The effect would be even more pronounced if multiple toll facilities were to function as substitutes, competing on price or quality of service. This is one reason that privatizing major highways may be more acceptable and more successful than privatizing an entire network of municipal roads. If all major highways were tolled and all local roads remained free, users unwilling to pay the toll would still have options. If all roads within a city were controlled by a single private operator (a privatized "road utility", for instance), users would have no choice but to pay whatever the operator charged, or not travel by road. As with other utilities, careful regulation would be needed to ensure the operator's incentive to maximize network efficiency remains.

Whether rate regulation is in fact *economically necessary* is the subject of debate; for instance Stigler and Friedland (1962) argue there is no difference in prices in the electrical sector due to regulation, because electricity is competitive with other energy sources in the long run. Winston and Yan (2011) also describe some cases in which the gains to society of privatization may be greater without regulation. One expects from experience with other utilities, toll roads, and road concessions in other countries that it would be *politically necessary* to have some public guarantee of an upper bound on the rates a road utility could charge, as provided by a regulatory agency. The risk is that an upper bound on revenue would be too tight, resulting in financial losses (and one of the causes of municipal takeover), as occurred in the then-private mass transit sector throughout in the United States in the early to mid 20th century.

An alternative to competing routes within the road travel market is a competition for the right to operate all roads within the market. Economic solutions to the monopoly problem include auctions for the privilege for operating routes which would allow the public to recover these monopoly profits, or reverse auctions where firms would bid to charge the lowest rate to operate the route. Future franchising such as Present Value of Revenue (PVR) auctions may entice government agencies to reconsider the toll finance mechanism. The PVR auctions are similar to the so-called Demsetz auctions used in the build-operate-transfer (BOT) approach, with the exception that private firms compete through bidding for the present value of toll revenue they want to obtain from the project. In this way, the consequences of these auctions are: no renegotiations (franchise terms are lengthened or shortened to meet bid PVR); no special clauses such as competition (the governments may build additional competing infrastructure projects because of previous consequence); incorporated buyout option (private firms receive their PVR bid, and governments acquire the infrastructure without bargaining behavior); and others. However, disadvantages of PVR auctions include: no incentives to increase demand (if demand increases it shortens the franchise term), and thus projects that require higher service quality may not be appropriate for PVR auctions (Engel, Fischer, & Galetovic, 2006).

## 3. Roads as a utility

A model that has been insufficiently explored in the United States is that of public utilities. Many utilities share with transportation systems the characteristic of having a networked structure. Most, if not all, of these utilities are operated on the basis of a payment-for-use system. Utility pricing varies regionally, some locales vary prices by time of day, and users often have the option of choosing different rate plans. These models are never strict marginal cost pricing, but they may improve upon average cost pricing. There are strong parallels between public utilities and transportation services, though some differences exist in the nature of the services consumed, the role of

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