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## *EZ-Tax: The link between the visibility of taxes and the level of taxation*

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**H**ow much did you pay in tolls the last time you drove on a toll road? You probably paid using electronic toll collection such as EZ-Pass in much of the Northeastern United States, and Fast-Trak in the Bay Area. As a result, you may have very little sense of current toll rates.

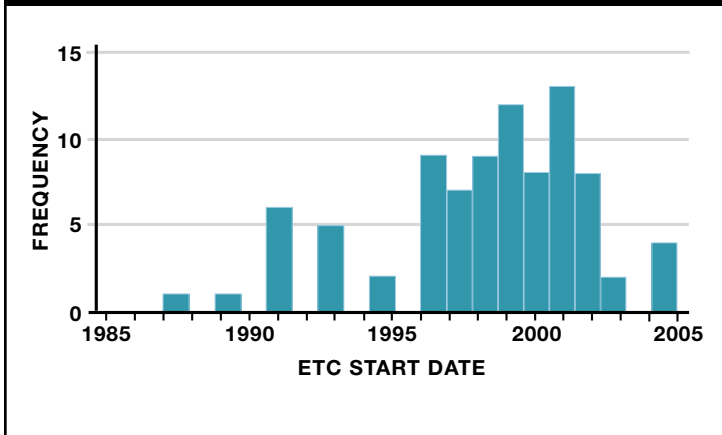
Electronic toll collection is just one example of a tax technology that makes the taxes people pay less visible. Many prominent economists and policy-makers believe that when taxes are less visible, it is easier for the government to raise tax rates beyond the level that an informed citizenry would want. For example, Milton Friedman publicly lamented what he believed to be his inadvertent contribution to the growth of government by encouraging the introduction of Federal income tax withholding during the Second World War. More recently, in 2005, the President's Advisory Panel on Federal Tax Reform failed to reach consensus on a proposal to replace part of the existing income tax with a value added tax (VAT) in large part because of concerns by some panel members that a VAT is less visible than an income tax and therefore would make it easier for the government to raise taxes.

Despite the widespread belief in the link between tax visibility and tax rates—and the influence this belief has on public policy discourse—we do not actually have any empirical evidence on the subject. To investigate the link between tax visibility and tax rates, MIT Economist Amy Finkelstein studied the impact of the introduction of electronic toll collection (ETC) on the toll rate on over 100 bridges, tunnels and roads throughout the United States.

Finkelstein notes that this provides a very useful framework for modeling the effects of tax visibility because different toll facilities in the United States introduced electronic toll collection at different times over the last 20 years, and about one-third have not yet introduced it. Figure 1 shows the diffusion of electronic toll collection over time. The first system was introduced in 1985. New sys-



**FIGURE 1:** Distribution of Electronic Toll Collection Start Dates



Not surprisingly, driving behavior is not very sensitive to small changes in toll rates under manual toll collection, but it becomes even less responsive to toll rates as the drivers switch to using electronic toll collection. That is, once taxes are less visible, they have less impact on individual behavior.

tems were still being introduced in the last year of her data, 2005. Finkelstein studies the impact of ETC by comparing changes in toll rates before and after the introduction of ETC to comparable changes for highways that did not have ETC.

Finkelstein's findings are consistent with the belief that less visible tax systems produce higher tax rates. She finds that toll rates are 20 to 40 percent higher under electronic toll collection than they would be under manual toll collection—even after taking into account the fact that many facilities offer toll discounts to drivers who use the electronic technology.

Finkelstein also produces interesting evidence that electronic toll collection reduces drivers' awareness of toll rates. She examines the sensitivity of the decision to drive on a road to the toll rate.

Of course, there are explanations other than a decline in tax visibility for why tax rates would increase and driving behavior would become less responsive to tax rates after toll facilities introduce electronic toll collection. These other explanations, however, are not consistent with the data. For example, a natural alternative explanation is that electronic toll collection reduces the wait time at toll booths, and individuals are willing to pay more for this better service. However, it does not appear that toll authorities increase tolls in response to other reductions in wait time at toll booths, such as when bridges switch from collecting tolls in both directions to only charging them in one direction, thus halving the waiting time for a round-trip bridge crossing.

The evidence from electronic toll collection suggests there is something to the belief that less visible tax systems can produce higher tax burdens. Whether this evidence can be generalized to federal income tax withholding or value added taxes remains an open question for further work.



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