Abstract: Traffic congestion is a problem whose solution economists have known of for more than 90 years, yet been unable to implement widely. One major barrier is concern among policy makers and the public that congestion pricing makes most road users worse off. This concern is supported by the standard economic models of congestion pricing, in which pricing is a Kaldor-Hicks improvement: the winners gain more than the losers lose.

In this paper I show that a judiciously designed toll applied to a portion of the lanes can be a Pareto improvement even before the revenue is spent. Since all road users will be better off this should ease adoption. I achieve this new result by extending the bottleneck model to reflect an important additional traffic externality which traffic engineers have recently identified: additional traffic does not simply increase travel times, but also introduces additional frictions that can reduce throughput.

By using a toll to smooth the rate that people depart for work it is possible to avoid these frictions, increasing speed and throughput. While our ability to obtain a Pareto improvement from pricing the entire road depends on the correlation between agents’ value of time and schedule flexibility, pricing a portion of the lanes will always be a Pareto improvement as long as prior to pricing there were always some drivers with a high value of time on the highway.

Estimates of drivers' preferences for California State Route 91 suggest that pricing the majority of the highway will be a Pareto improvement and that the welfare gains are on the order of $1,000 per driver per year.

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