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**Authors**
Sallee, James, PhD
Tarduno, Matthew, PhD

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# Congestion Pricing Can Be Equitable If a Portion of the Revenue is Returned to Drivers

**James Sallee, Ph.D. and Matthew Tarduno, Ph.D.**
**Department of Agricultural and Resource Economics, University of California, Berkeley**

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## Issue

Economists have long argued in favor of congestion pricing, under which drivers pay a fee or toll to enter roadways during peak times. An increasing number of global cities have adopted or are considering pricing programs. Even so, these regimes remain relatively rare and controversial. One key concern with congestion pricing is fairness. Road pricing can pose a substantial burden for low-income drivers, many of whom have little option to avoid travel during peak times and limited opportunity to choose other modes of travel.

Prior research has shown that congestion pricing regimes tend to be regressive in terms of their initial burden, that is, in terms of who ends up paying more to use the roads.[1] But, the ultimate effect of a road pricing program depends also on how its revenue is used. Some or all of the revenue from a congestion pricing program can be returned to households, and this can fundamentally change the program's fairness.

Can congestion pricing be both efficient and fair if program revenue is given back to drivers? We examined a road pricing pilot program in Seattle to answer this question and considered implications for congestion pricing in California. We analyzed data from a two-year experiment to document who paid more and explored the consequences of using program revenue to send rebates to households.

## Key Research Findings

**Congestion pricing is highly regressive.** In the Seattle experiment, wealthier households paid more to drive than lower-income households. But the difference was small. As a result, lower-income households paid much more as a fraction of their income than did wealthier households. This makes the policy regressive, according to the standard economic definition. On average, low-income households paid charges equal to 6.7% of their weekly income, whereas high-income households paid charges equal to less than 1% of their weekly income.

**Congestion pricing can be more progressive if program revenue is returned to households as a rebate.** Regressive effects can be fully reversed if program revenue is rebated to all households equally. Because the equal or uniform rebate represents a larger fraction of household income to lower-income households, a program that rebates 100% of the toll revenue would be highly progressive. Uniform household rebates are a common feature of many environmental tax proposals.[2] A related example is the California Climate Credit, which gives each household in the state an equal portion of revenue from the state's carbon cap-and-trade program as a credit on utility bills.

**Half of program revenue needs to be rebated to make road pricing progressive.** Policymakers may want to use program revenue for other purposes, including paying administrative program costs, improving transportation infrastructure, or shoring up local budgets. Data from the Seattle experiment suggest that around 50% of the program revenue needs to be returned to households in a uniform rebate in order to eliminate the program's regressive impact.

**Even a program that is progressive on average will make many lower-income households worse off.** Households with similar incomes vary widely in their driving habits. This heterogeneity means that a uniform rebate is more than enough to compensate some households, but not nearly enough to keep others whole. On average, a progressive program will still leave some households— those with especially high travel demands—worse off. This result motivates consideration of targeted rebates, under which households with greater travel needs qualify for bigger rebates. The Seattle data, however, show that it will be very difficult to target rebates based on observable characteristics like neighborhood location, income or household size.

**Results in California would likely be similar.** The research examines data from the National Household Travel Survey to see how driving patterns and the relationship between driving and income in Seattle compare to patterns in San Francisco and Los Angeles, both of which are actively exploring road pricing mechanisms, as well as other California metropolitan areas. Households in Seattle look quite similar to households in California cities in terms of their travel demand and characteristics, which implies that key results about regressivity and rebate targeting would likely be similar in the Golden State.

## More Information

This policy brief is drawn from the report, "Can Rebates Foster Equity in Congestion Pricing Programs?" prepared by James Sallee and Matthew Tarduno with the University of California, Berkeley. The report can be found at www.ucits.org/research-project/2020-26. For more information, please contact James Sallee at sallee@berkeley.edu.

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[1]David Levinson, "Equity effects of road pricing: A review" Transport Reviews 30(1), 2010, pp. 33-57 for a review.

[2]Gilbert E. Metcalf, "A proposal for a U.S. carbon tax swap" Brookings Institution Discussion Paper 2007-12, 2007.

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