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Poverty Research Flash

No. 2011-04

Highlighting New Poverty Research

by Robert D. Plotnick, Jennifer Romich, Jennifer Thacker, and Matthew Dunbar

"A Geography-Specific Approach to Estimating the Distributional Impact of Highway Tolls: An Application to the Puget Sound Region of Washington State." (Forthcoming). *Journal of Urban Affairs.*
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The West Coast Poverty Center's **POVERTY RESEARCH FLASH** highlights new research by Center faculty affiliates and others on causes, consequences, and effective policy responses to poverty, with an emphasis on changing labor markets, demographic shifts, family structure, and social and economic inequality. More information about the West Coast Poverty Center is available from our website: wcpc.washington.edu

April 2011

A Geography-Specific Approach to Estimating the Distributional Impact of Highway Tolls: An Application to the Puget Sound Region of Washington State.

Background. Policymakers are increasingly turning to tolls to raise revenue for road maintenance and construction as well as for achieving other goals such as reduced congestion on roadways. While the benefits of better roads and less traffic may be widely shared, some argue that tolling may be an inequitable way of achieving those goals because tolls are regressive – that is, they place a comparatively greater economic burden on low-income drivers than on more affluent drivers. The impact on low-income drivers is one way to think about the impacts of tolling, but are there other ways of assessing the impacts?

Methods. WCPC Affiliate and Professor of Public Affairs Robert D. Plotnick, WCPC Associate Director and Associate Professor of Social Work Jennifer Romich, and their colleagues Matthew Dunbar and Jennifer Thacker use a novel approach to assess the equity impacts of tolling on the Puget Sound region's population. The researchers combine descriptive information about area households from the 2007 American Community Survey with data from a 2006 local survey that included demographic characteristics of households as well as information about where respondents work and live. They use Geographic Information Systems (GIS) methods to map likely commuting routes. The routes allow them to estimate the financial impacts of tolling various highway segments in the Puget Sound area on low-income households (with incomes under 200 percent of the federal poverty line) and non-low-income households.

Findings. While the majority of workers in the Puget Sound area commute by car, regardless of income (76 percent of low-income workers and 83 percent of non-low-income workers), the mapped commuting patterns showed that low-income and non-low-income commuters are concentrated on different roads. Just under one-third of low-income workers use the 12 highway segments the researchers identified that might be subject to tolling, compared with 46 percent of non-low-income drivers. Low-income households account for 19 percent of the region's population, but workers from low-income households made up between 3 and 22 percent of commuters using any individual highway segment that might be subject to tolls. The segment on which tolls will be collected beginning in spring 2011, the SR 520 bridge, has the lowest share of users who are low-income (3 percent).

As expected, the researchers found that installing tolls on heavily-used segments of the region's six major highways would have a greater financial impact on commuters from households with incomes below 200 percent of the federal poverty line than on households with higher incomes. However, the researchers find that the degree to which this is the case depends on whether the impacts are examined across users of tolled roads, commuters, or all low-income households. For example, based on recent commuting patterns, installing a one-way toll of $2 on SR 520 would mean that a household earning the median annual income for low-income households ($15,600) would pay $960, or 6.2 percent of its income for tolls each year if a worker in the household's commute included using SR 520. The $960 cost of tolls would represent only 1.3 percent of income for a family earning the median for non-low-income households ($76,350). However, if the costs of the tolls were spread across all households (not just the one percent of low income and five percent of non-low-income commuters who use this segment of highway), a household earning $15,600 a year would pay an average of $6, or .04 percent of its income, in tolls, compared with $36 (.05 percent) for a household earning $76,350.

The researchers argue that, when examined this way, tolling that particular highway segment does not fall more heavily on low-income households. Further, in this case, they argue that tolling is clearly less regressive than alternative methods of financing new road construction, such as gas taxes or sales taxes which would affect all low-income households.

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The West Coast Poverty Center serves as a hub for research, education, and policy analysis leading to greater understanding of the causes and consequences of poverty and effective approaches to reducing it in the west coast states. The Center, located at the University of Washington, is one of three regional poverty centers funded by the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation (ASPE). More information about the West Coast Poverty Center is available from our website: wcpc.washington.edu

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A Geography-Specific Approach to Estimating the Distributional Impact of Highway Tolls: An Application to the Puget Sound Region of Washington State

New research from Robert D. Plotnick, Jennifer Romich, Jennifer Thacker, and Matthew Dunbar

Key Findings

- The majority of workers in the Puget Sound area commute by car, regardless of income (76 percent of workers from low-income households and 83 percent of workers from non-low-income households).
- Mapped commuting patterns showed that drivers from low-income and non-low-income households are concentrated on different roads as they travel from home to work.
- As an example of how tolling's distributional impacts vary depending on how those impacts are assessed, the cost of a $2 toll among drivers who use a particular road in the Puget Sound area amounts to 6 percent of annual income for the median low-income household, but only one percent for the median non-low-income household. However, if the costs of the tolls are averaged across all households (not just commuters who use the tolled road), the median low-income household would pay an average of .04 percent of its income in tolls, compared with .05 percent for the median non-low-income household.
- When tolling's impacts are assessed across all households rather than just users of the tolled roads, tolling is seen to be less regressive than alternative methods of financing new road construction, such as gas taxes or sales taxes which would affect all low-income households.