

# “Infrastructure Inequality”

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Abstract:

What Americans experience the worst infrastructure and what are the costs of living with that infrastructure? We measure road roughness throughout America using vertical acceleration data from millions of Uber rides across thousands of American roads. Our measure correlates strongly with other measures of road roughness where they are available, and with outcomes such as driver speed. We use a simple model to quantify the overall costs of roughness based on how driver speed responds to changes in road roughness. We estimate the treatment effects of road roughness on speeds using road repaving events in Chicago, and discontinuous jumps in road roughness at town borders in almost 3,000 towns across the US. These estimates suggest that the roughness of the median road in the US generates welfare losses of 0.17 USD per driver-mile, which is 27% of the time cost ignoring roughness. Roads are much worse in dense, coastal areas, and in poorer towns and neighborhoods. Comparing towns, we find that a jump from 0 to 100 percent African-American corresponds to a welfare loss of .20 USD per driver-mile due to worse roads. For the city of Chicago, we find little correlation between measured road roughness and subsequent road repaving, suggesting that there may be welfare gains from better targeted road care.