

# **Distributional Effects of Vehicle Ownership Restrictions**

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*Abstract :*

We study vehicle population controls, their dynamic effects, alternative policy designs, and implications for efficiency and equity. We leverage data on the universe of vehicles in Singapore, the number of which is limited by the Vehicle Quota Scheme (VQS). Under the VQS, car registrations must be accompanied by permits allocated in fortnightly auctions; after ten years, car permits expire and may be renewed at the prevailing auction price. First, we observe that the effective tax on vehicle ownership fluctuates by as much as S\$10,000 per year per vehicle, possibly mispricing the negative externalities of ownership and use. To explain these large fluctuations in permit prices, we formulate a dynamic equilibrium model of vehicle ownership and replacement by individuals and firms. This model will be taken to administrative microdata to evaluate welfare under the current and alternative designs.