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Imperfect Competition, Consumer Behavior, and the Provision of Fuel Efficiency in Vehicles

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This study addresses an issue that has been overlooked in previous studies of fuel economy standards and alternatives: that imperfect competition can affect manufacturer incentives to deploy fuel-saving technologies. Although it is well known that market power affects price markups, the distributional effects of regulation, and even the fleet mix, its effects on the choice of fuel economy have largely been ignored. When consumers have heterogeneous tastes for fuel economy, vehicle manufacturers with market power have an incentive to choose fuel economy to differentiate their product line, segment consumers, and thus obtain higher prices for their fleet of vehicles. In this situation, fuel economy tends to be over-provided in classes whose consumers value it more than others, and underprovided in classes whose consumers value it less than in others. As a result, imperfect competition in the product market creates a market failure in the provision of fuel economy. Overlooking this market failure leaves out an important motivation for fuel economy regulation that will bias estimates of policy cost-effectiveness. On the other hand, average fuel economy regulation is not necessarily the best response to the distortions caused by price discrimination, and alternative forms may be preferred. We complement theoretical analysis with numerical simulations to assess the potential magnitude of the problem. The results will inform policymakers about the extent to which fuel economy policy needs to keep an eye on market power issues, and the corresponding sensitivity analysis helps to identify key parameters for further empirical research.

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