Does adding inventory increase sales? Evidence of a scarcity effect in U.S. Automobile dealerships

Cachon, Gérard P.

Gallino, Santiago

Olivares, Marcelo

 is the relationship between inventory and sales? Clearly, inventory could increase sales: expanding inventory creates more choice (options, colors, etc.) and might signal a popular/desirable product. Or, inventory might encourage a consumer to continue her search (e.g., on the theory that she can return if nothing better is found), thereby decreasing sales (a scarcity effect). We seek to identify these effects in U.S. automobile sales. Our primary research challenge is the endogenous relationship between inventory and sales-e.g., dealers influence their inventory in anticipation of demand. Hence, our estimation strategy relies on weather shocks at upstream production facilities to create exogenous variation in downstream dealership inventory. We find that the impact of adding a vehicle of a particular model to a dealer's lot depends on which cars the dealer already has. If the added vehicle expands the available set of submodels (e.g., adding a four-door among a set that is exclusively two-door), then sales increase. But if the added vehicle is of the same submodel as an existing vehicle, then sales actually decrease. Hence, expanding variety across submodels should be the first priority when adding inventory-adding inventory within a submodel is actually detrimental. In fact, given how vehicles were allocated to dealerships in practice, we find that adding inventory actually lowered sales. However, our data indicate that there could be a substantial benefit from the implementation of a ?maximize variety, minimize duplication? allocation strategy: sales increase by 4.4% without changing the total number of vehicles at each dealership.