

The Luck Celebration Hypothesis: How License Lotteries Affect the Licensed Purchase

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Lotteries are one of the most common rationing mechanisms. For example, the U.S. Department of Labor conducts lotteries to grant H-1B work visas to potential foreign workers, and the Traffic Management Bureau in Beijing, China, conducts lotteries to grant license plates to potential buyers of small passenger automobiles for private usage. Lotteries are often chosen out of concern for fairness. However, the impact of lotteries goes much further. This research examines the effect of permission lotteries on a sequential permitted purchase. For example, how would a license plate lottery affect the buyer's car purchase decision? Intuitively, license plate lotteries should not influence the later car purchase. For one, although license plates are a scarce resource, cars are not, so one does not need to increase the spending on a car due to the scarcity of its license plate. For another, unlike auctions, lotteries randomly select a group of buyers from the population of all potential buyers, so the lottery winners should be representative of the population—no richer, no poorer. Our findings, however, are rather counterintuitive: buyers actually upgrade their budget if they receive a purchase permission from a lottery. We define “permission” broadly as access to a purchase opportunity, including but not limited to license plates for automobile purchases, invitations to exclusive events, and tickets to commercial fairs. We study the relationship between permission lotteries and the permitted purchase with a two-step approach: first, we let data speak (empirical analyses of big data from the field; 28,996,696 observations total), and second, we conduct hypothesis testing (experimental designs in the lab). This research makes two unique contributions: (a) it reveals an unanticipated and powerful downstream consequence of permission lotteries on the permitted purchases, and (b) it provides data-driven recommendations for policy makers on allocation method designs.