Lot Shape Matters a Lot: The Geometry of Urban Land Market Frictions*

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January 21, 2026

Abstract

This study examines whether the geometric characteristics of land lots can be sources of frictions in the land market. We first propose a search-and-matching model of the land market that links shape irregularity to vacancy duration and the likelihood that a lot is put on the market. To test the theoretical predictions, we apply a Cox proportional hazards model for the duration analysis and a linear probability model for the listing decisions analysis to a rich set of GIS polygon data on vacant lots from a satellite city of Tokyo. We find that shape irregularity—measured as the areal deviation from a minimum bounding rectangle—is associated with longer vacancy and lower probability of being listed for sale. The results suggest that lot shape is not merely a passive spatial trait but a structural source of land market frictions, which could hinder the efficient supply of housing in high-demand areas.

Keywords: Vacant lot, Lot shape irregularity, Survival analysis, Listing decision, Land market frictions

JEL classification: R31, R33, C41

*We are grateful to Felipe Carozzi, Mariaflavia Harari, Christian Hilber, Mariko Nakagawa, and Atsushi Yamagishi for valuable comments and discussions. We also appreciate ZENRIN Co. for providing valuable data. This study is financially supported by Murata Science and Education Foundation and Center for Real Estate Innovation at the University of Tokyo. The views in this paper are those of the authors and do not necessarily reflect the official views of any affiliated institutions. All remaining errors are our own.

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