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From Samurai to Skyscrapers: How Historical Lot Fragmentation Shapes Tokyo

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Abstract

Skyscrapers can enhance agglomeration benefits, but the construction of skyscrapers involves a large footprint. Assembling fragmented lots to construct skyscrapers may not be achievable in the presence of transaction costs. We study how lot fragmentation shapes urban development by exploiting unique land-use history in central Tokyo as a natural experiment. Before 1868, 20% of the land was occupied by local lords' estates (daimyo yashiki), having a larger lot size compared with other areas. Meiji restoration in 1868 forced local lords to release their estates to the private market. To study its historical trajectory, we construct a 100 m*100 m-cell-level data set spanning 150 years. We find that cells previously used as local lords' estates more today have larger lots, taller buildings, more floor space, and higher land prices. Our spatial regression discontinuity design using a zoning boundary also confirms the results. By contrast, before WWII, local lords' estates had larger lots but lower land prices. The relationship between land prices and lot fragmentation today is present only in business zones and when the lot fragmentation is relevant for the footprint of skyscrapers. These results suggest that the cost of lot fragmentation increases with the advancement of the knowledge economy and construction technology.