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Residential Property Price Indexes: Spatial Coordinates versus Neighbourhood Dummy Variables

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The paper addresses the following question: can satisfactory residential property price indexes be constructed using hedonic regression techniques where location effects are modeled using local neighbourhood dummy variables or is it necessary to use spatial coordinates to model location effects. Hill and Scholz (2018) addressed this question and found, using their hedonic regression model, that it was not necessary to use spatial coordinates to obtain satisfactory property price indexes for Sydney. However, their hedonic regression model did not estimate separate land and structure price indexes for residential properties. In order to construct national balance sheet estimates, it is necessary to have separate land and structure price indexes. The present paper addresses the Hill and Scholz question in the context of providing satisfactory residential land price indexes. The spatial coordinate model used in the present paper is a modification of Colwell's (1998) spatial interpolation method. The modification can be viewed as a general nonparametric method for estimating a function of two variables.