Decomposition methods and housing markets

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Decomposition techniques based on OLS regression are widely used to examine cross-sectional or intertemporal changes in unconditional means of any dependent variable. Thereby, these changes can be decomposed into a portion due to changing characteristics and into a part induced by changing coefficients. Meanwhile, there has been much progress in extending decomposition methods to the whole unconditional distribution. These methods have been rarely applied in the field of housing economics but have proven to offer relevant insights into the evolution of price distributions.
I will introduce a distributional decomposition method and its application to housing markets. To execute this method, conditional quantiles of rental prices are initially calculated by quantile regression. This first step yields results that indicate to which amount a particular flat property is priced implicitly at specific points on the conditional price distribution. These implicit prices (coefficients) already reveal insightful information on the structure of the rental price distribution. In addition, quantile regression results are used to set up a so-called counterfactual simulation, enabling the user to construct prices of one period, assuming that characteristics of the former period remain constant. This allows one to split changes in the unconditional distribution of rental prices over time into two effects: the characteristic effect denotes changes that would be generated by altered characteristics; while the coeffcient effect captures changes due to altered implicit prices. I will provide technical details and an empirical example. I will also present further research questions.