The Multilevel Determinants of the Discrepancy between Homeowners' Perceived Housing Values and Measured Market Values of Their Homes: The Case of the Detroit Metropolitan Area

Minha Noh (presenter)
University of Michigan

Jeffrey Morenoff
University of Michigan

Elisabeth Gerber
University of Michigan

ABSTRACT

Housing-related inequalities in urban neighborhoods is an important driver of wealth disparities, and has gathered considerable attention in various academic disciplines and in policy. The discrepancy between people's subjective perceptions of their housing values and more objective measures of the market value could exacerbate such disparities, and is likely to be influenced by characteristics of individuals and the broader social context in which they live. This study uses data from the Detroit Metro Area Communities Study (DMACS) to examine the gap between people's perceptions of housing values and objective indicators of housing values from real estate sales prices and explores how this gap is related to characteristics of individuals and their neighborhood environments. It also examines whether the discrepancy between perceived housing values and the measured market values is spatially patterned and extent to which such spatial dynamics are explained by characteristics of local neighborhoods.

INTRODUCTION

Housing-related inequalities in urban neighborhoods is an important driver of wealth disparities, and has gathered considerable attention in various academic disciplines and in policy. The discrepancy between people's subjective perceptions of their housing values and more objective measures of the market value could exacerbate such disparities, and is likely to be influenced by characteristics of individuals and the broader social context in which they live. Prior research suggests that many homeowners think their homes are worth more than the home values estimated from tax assessments (Ihlanfeldt and Martinez-Vasquez 1986; Robins and West 1977) and from real estate appraisals (Robins and West 1977). Most homeowners also over-estimate their housing values compared to subsequent reported sales prices (Benitez-Silva et al. 2008; Goodman and Ittner 1992) and to previous sales prices (Chan et al. 2016; Kiel and Zabel 1999).

Studies have also explored some of the individual-level characteristics that account for this discrepancy, such as the length of home ownership (Kain and Quigley 1972). Research in economics and psychology has offered possible explanations for the tendency of home owners to overvalue their homes. For example, some owners may base their perceptions on only the most favorable comparable sales they know about (Babcock et al. 1996). However, there is a

dearth of research that systematically explores how the knowledge about one's home values are interconnected with wider patterns of social inequalities, especially focusing on urban areas.

In our study, we address the gap in the literature and investigate spatial patterns and multilevel determinants of such mis-estimation. First, we explore the relationship between individual- and neighborhood-level sociodemographic characteristics and the discrepancy between homeowners' perceived housing values and measured market values of their homes in Detroit. Furthermore, we examine the possibility of spatial clustering in the knowledge about residential property values that would exacerbate inequalities in wealth.

By investigating the factors that influence the knowledge of housing values, this study will contribute to research on wealth disparities. In addition, our focus on the case of Detroit will shed light on urban policy, particularly in areas where the housing market has undergone dramatic changes and in historically segregated neighborhoods.

DATA AND METHODS

We link two different sources of data for this inquiry. First, to derive current estimates of housing market values, we use the parcel-level data about sales prices and dates of homes accumulated by CoreLogic, a provider of property data. We use the following formula to calculate the predicted market value of houses in 2017: (last sales price of home × median sales price of houses sold for the Midwest census region in 2017) ÷ (median sales price of houses sold for the Midwest census region in the last sale year).

Second, we use survey data from the Detroit Metropolitan Area Communities Study (DMACS) on a representative panel of City of Detroit residents. The Wave 2 DMACS survey (n=444) asked respondents who own homes how much they think their home would be worth if they were to sell it, as well as a standard battery of individual and household demographic characteristics and geographic identifiers.

Linking data from both sources, we calculate the level of discrepancy between respondents' perceived housing values and the measured market values of their homes from the parcel-level sales data. To explore spatial patterns of discrepancy, we conduct kernel density estimation, based on the assumption that the values of a variable in nearby areas are similar to one another; each area's value of the variable is predicted based not only on the area's data sample, but also on the data samples of nearby areas by giving weights based on closeness. We map the level of discrepancy by sociodemographic characteristics of homeowners (income, level of education, and race) and by neighborhood socioeconomic status (poverty and education level) and racial composition at census tract level.

PRELIMINARY RESULTS

Results from our preliminary analysis show strong visual evidence of spatial clustering in the gap between perceived and objective housing values, as shown in the Figures below. People further away from Downtown and Midtown Detroit, where much of the city's recent development and re-investment have taken place, generally underestimate how much their home is worth,

while those who live in and around Downtown and Midtown are likely to estimate their home values to be higher than the market values estimated from sales data.

We also find that the discrepancy between perceived and objective housing values is related to individual-level income. As shown in Figure 1, respondents with higher incomes were likely to under-estimate the value of their homes relative to the objective market value estimates. The discrepancy between perceived and objective housing values is also related to neighborhood (i.e., tract-level) poverty, as illustrated in Figure 2. Homeowners living in poorer neighborhoods are more likely to perceive their homes as being worth more than their market values as estimated by sales data.

The discrepancy between perceived and objective housing values was also related to educational attainment at individual- and neighborhood-levels, as shown in Figures 3 and 4. Homeowners with higher levels of education generally perceive their home values to be lower than the market value, as do those in neighborhoods with a higher proportion of college graduates.

Black homeowners tend to perceive their home values to be lower than the market values, as demonstrated in Figure 5. Figure 5 also indicates that homeowners in tracts with the lowest proportion of Black residents tend to estimate their house values to be higher than market values. There appears to be racial stratification in knowledge about housing values.

Next steps before PAA meeting

While these initial descriptive results are intriguing, we have plans for substantial additions before the PAA meeting. First, we will utilize further wave(s) of data from the Detroit Metropolitan Area Communities Study, which will add to the representative sample. We are expecting about 900 more interviews to be completed in an upcoming survey wave (November 2018), increasing the overall sample to about 1200.

We will also use two additional empirical methods. Building on the kernel density estimation, we will conduct hot spot analysis to identify clusters within Detroit where the discrepancy is significantly higher or lower than the expected values. This will serve as a formal test for detecting spatial patterns of the discrepancy shown in the preliminary results. We will also conduct regression analysis to investigate factors affecting such discrepancy at both individual- and neighborhood-levels.

SOURCES

Babcock, L., X. Wang and G. Loewenstein. 1996. Choosing the Wrong Pond: Social Comparisons in Negotiations that Reflect a Self-Serving Bias. *The Quarterly Journal of Economics* 111(1): 1–19.

Benitez-Silva, H., S. Eren, F. Heiland and S. Jimenez-Martin. 2008. How Well do Individuals Predict the Selling Prices of Their Homes? Working Paper 2008–10, FEDEA. Accessed at http://ideas.repec.org/p/fda/fdaddt/2008-10.html.

Goodman, J.L., Jr. and J.B. Ittner. 1992. The Accuracy of Home Owners' Estimates of House Value. *Journal of Housing Economics* 2: 339–357.

Ihlanfeldt, K.R. and J. Martinez-Vazquez. 1986. Alternative Value Estimates of Owner-Occupied Housing: Evidence of Sample Selection Bias and Systematic Errors. *Journal of Urban Economics* 20(3): 356–369.

Kain, J.F. and J.M. Quigley. 1972. Note on Owners' Estimate of Housing Value. *Journal of the American Statistical Association* 65: 532–548.

Kiel, K.A. and J.E. Zabel. 1999. The Accuracy of Owner-Provided House Values: The 1978–1991 American Housing Survey. *Real Estate Economics* 27(2): 263–298.

Robins, P.K. and R.W. West. 1977. Measurement Errors in the Estimation of Home Value. Journal of the American Statistical Association 72(358): 290–294.

Figure 1. Discrepancy between Perceived Values and Measured Market Values of Houses by Individual-Level Income

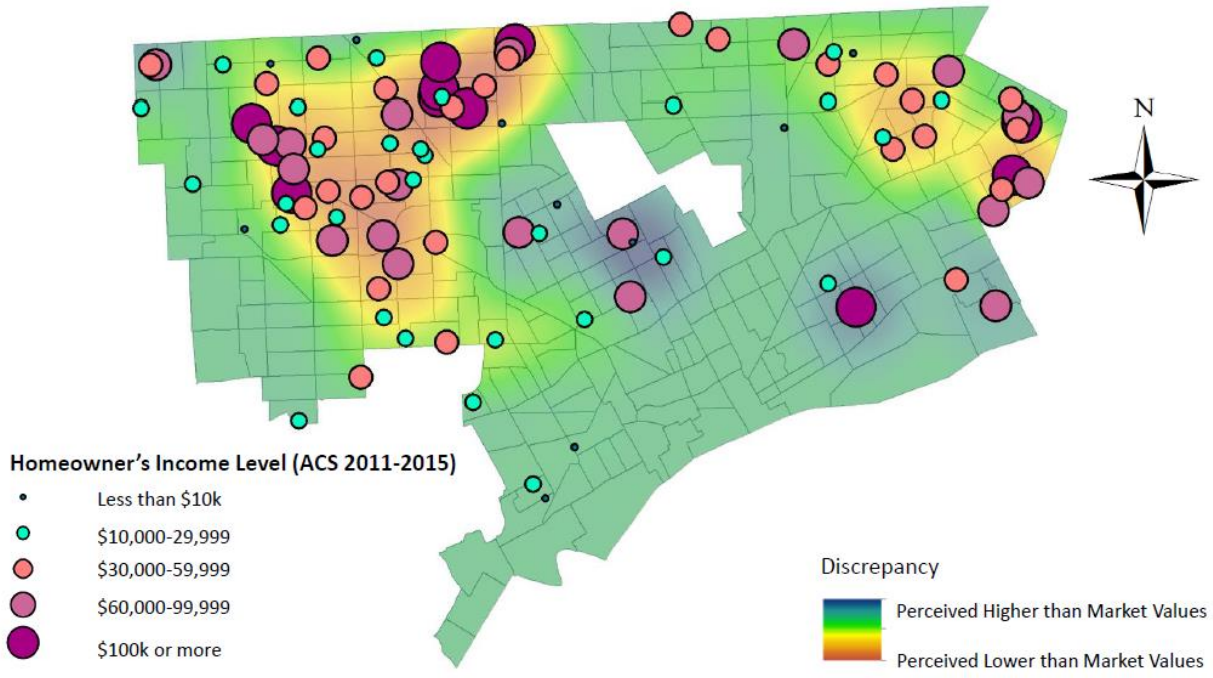

Figure 2. Discrepancy between Perceived Values and Measured Market Values of Houses by Neighborhood Poverty

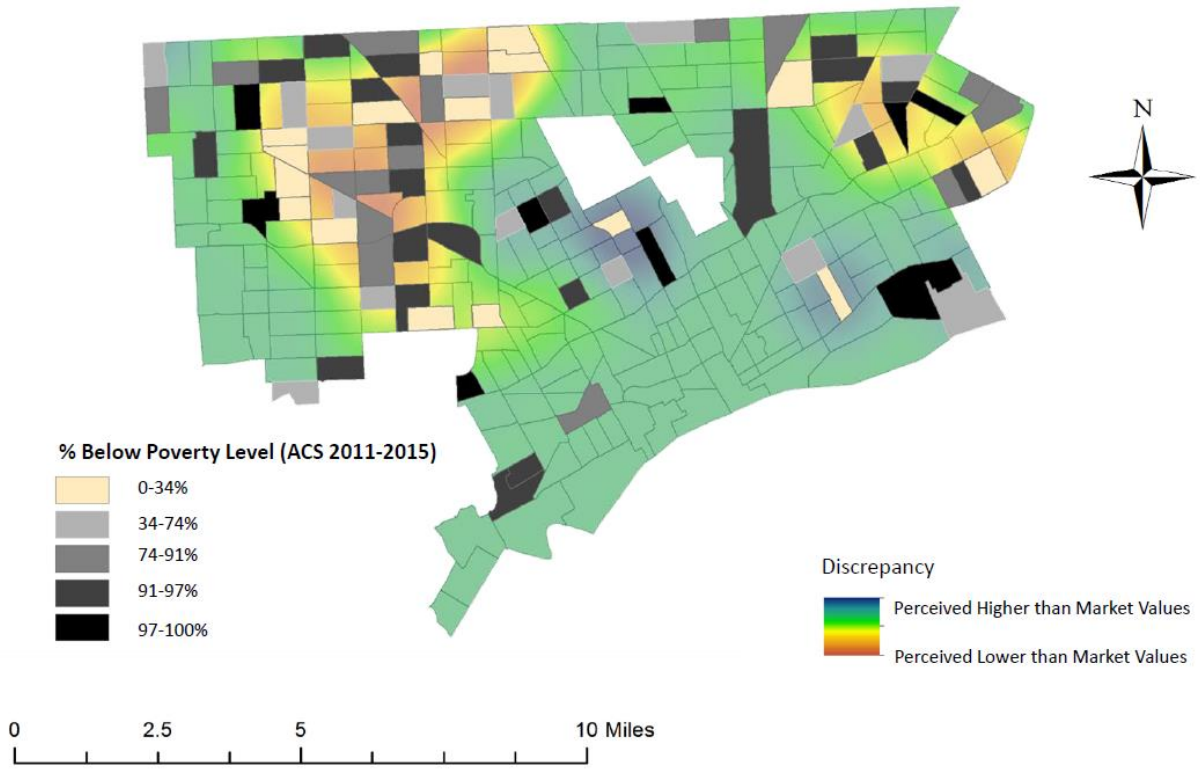

Figure 3. Discrepancy between Perceived Values and Measured Market Values of Houses by Individual's Education Level

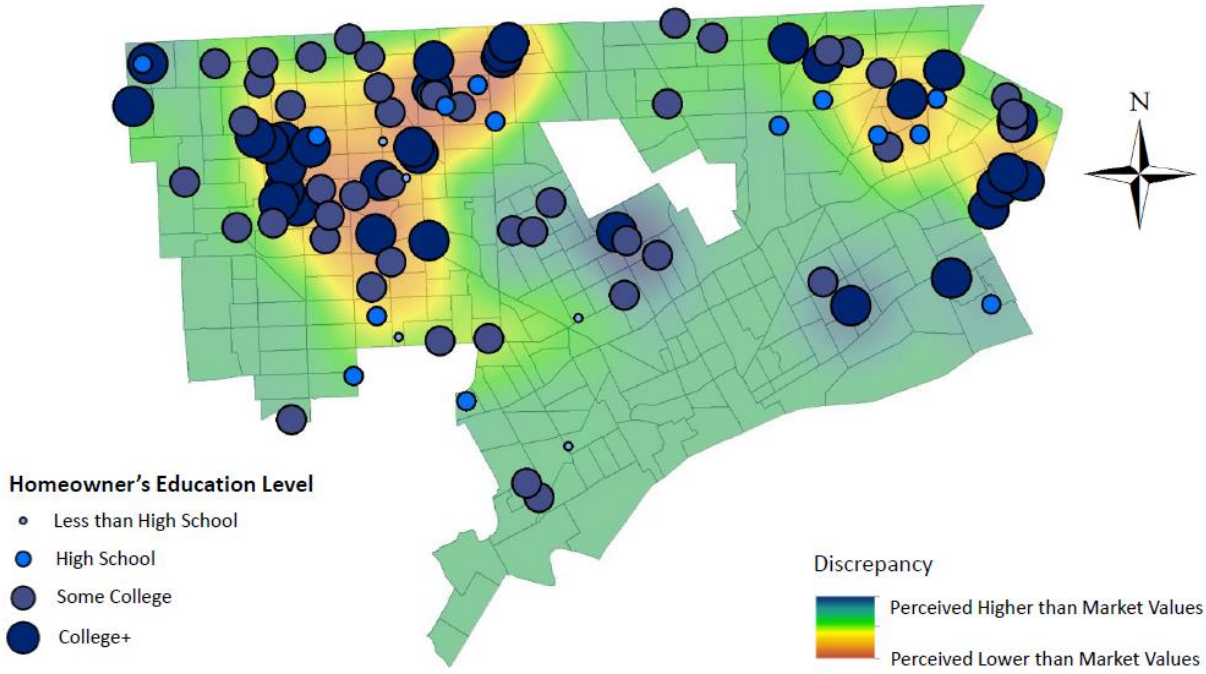

Figure 4. Discrepancy between Perceived Values and Measured Market Values of Houses by Neighborhood Education Level

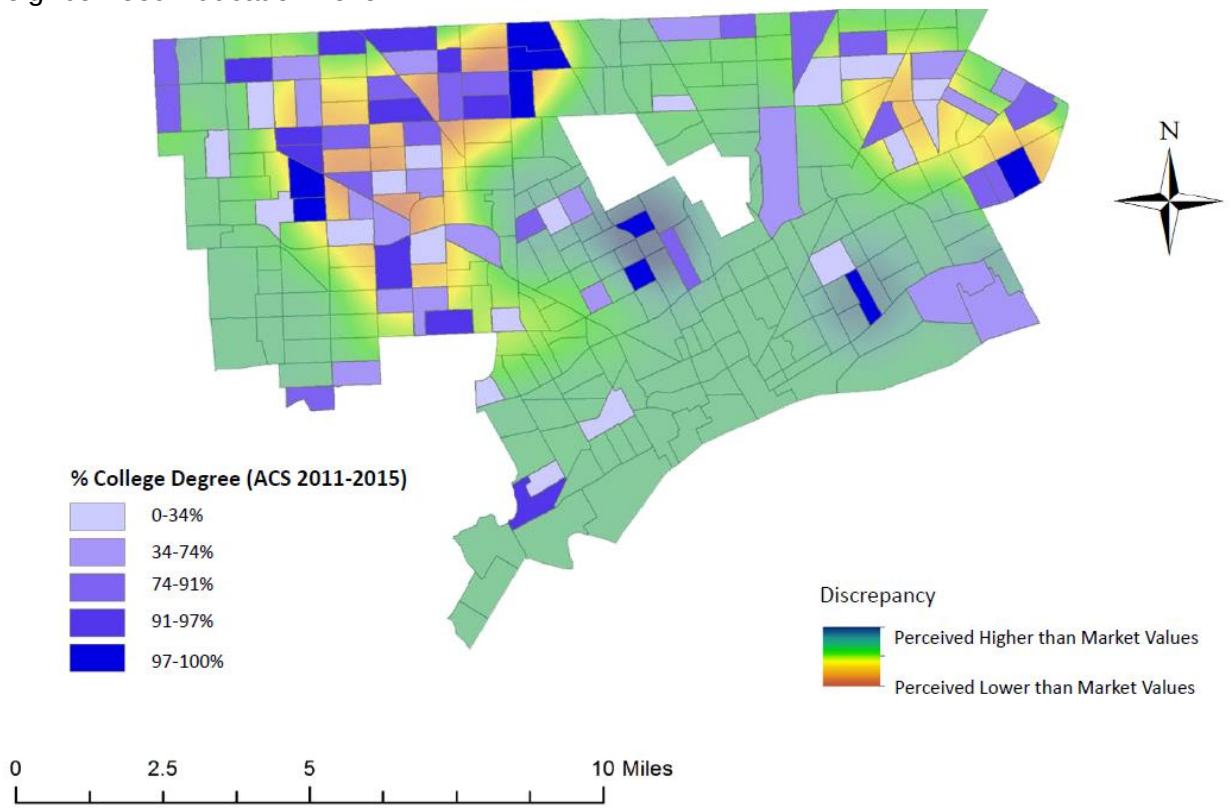

Figure 5. Discrepancy between Perceived Values and Measured Market Values of Houses by Individual's Race and Neighborhood Racial Composition