Detroit’s Post Recession Life: Resilience and Recovery?

The story of Detroit since the recession of 2008 has primarily been presented as a story of triumph. Using private capital, a managed bankruptcy, and a surging interest among millennials, the city of Detroit has sought to reinvent itself for the 21st century. However, it is possible to tell a much darker story of abandonment, savaging of the local communal structures and income flows that made the city possible, and displacement of local communities (and indeed, these narratives are not necessarily in tension with each other). In this capstone, using a variety of response variables, I would like to model the features that led to the successful development of some neighborhoods/zip codes/census tracts over others, as a means of trying to isolate some of the specific factors that correlate with the success of particular neighborhoods/census tracts. What specific factors and innovations had the strongest impact on the neighborhood density, on the average income, on the local crime rate, or on the number of businesses developed? Can similar targeted interventions help other areas? Which organizations have had strong track records with these interventions?

In general, I conceptualize of my project as a useful guide for city planners and policy makers, who are interested in the revitalization and the maintenance of cities and neighborhoods. I think it could be useful to study one particularly distressed example of how a city bounced back or failed to do so, and the promise and limits of specific local initiatives. While most of the project will focus on the general picture, a more focused part of the modeling will look at the efficacy of a specific group of targeted investments on local job creation, business development, housing prices, and local development, as a proxy for the broader work of nonprofit groups. This part of the modeling was developed in conjunction with some local nonprofits who would like data on the impact of their contributions to Detroit’s cultural and recreational facilities.

I envision this as primarily approached through regression methods (and perhaps classifiers). The data cleaning here will be extensive, and it will require converting data for the city into data specific to the neighborhood/zipcode/census tract, since much of this data has locational markers, and that allows me to isolate it at a neighborhood level. From that data, it will be possible to generate more specific forms of data, such as businesses registered in a neighborhood in 2015 or number of graffiti complaints, which can then be used to create models. A worry here is that that size of the dataset is not sufficient to use zipcodes or neighborhoods, but that census tracts are not actually meaningful units.

For this project, I will be drawing on Detroit’s extensive open data resources.

Detroit Open Data

* Detroit Business Certification Registry (starts 2015)
* Building Permits (2010-Present)
  + Trade Permits (2010-Present) is this the same as building permits? (Electrical, Mechanical, Plumbing, Elevator, HVAC)
* Improve Detroit database (starts 2014)
* Auction Sales—of foreclosed houses (starts 2014)
* Blight Violations 2004-present
* Deployment of city resources, police, fire, schools, parks, libraries (probably a lot of these would be dummy variables)
* Liquor Licenses (active 2015-2016, can also find duration with begindate)
* Demolitions (starts 2014)
* Crime Data (2009-2016)
* Presence of transit stations
* Bike lane presence
* Capital Improvement Projects
* Fire data
* Child Care Providers
* Colleges and Universities
* Zoning (as a categorical variable)
* Parks/Recreation Centers
* Property Sales (can be used to compose a list of average prices, 2005-Present)
* Hospitals
* 2010/2015 census data
* Environmental data

Target variables (may have to be content with setting 2016 as an endpoint of analysis, and

* Average House Price
* Population Density
* Per capita income?
* Businesses opened
* Auction sales
* Blight violations
* Building permits
* Crime data

Different Means of Organizing the Data:

* Zipcodes (31)
* Neighborhoods (209)
* Election Precincts (491—electoral turnout might be interesting here, given that Trump won Michigan)
* Council Districts 8- (added bonus of civic policy)
* Census Tracts (310)
* Census Block Groups (880)