SPATIAL ECONOMICS

The Geospatial Economics of Chicago and Urban Development

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Research Question and Motivations

The Question

What are the areas that have potential for development and need investment?

Measures of Progress

A way to show the progress and compare across decades

Quality of Life

Economic activity comes from people, and if they are able access more things, there will be more economic activity

Boundary Definitions

Aggregations by political boundaries often show a skewed picture of the material conditions

Transit Economics

Jupiter is a gas giant and the biggest planet in the Solar System

Places to Live

Looking for quick ways to evaluate the location of an apartment

Tax Increment Financing

Purpose

Funding tool to "build and repair roads and infrastructure, clean polluted land and put vacant properties back to productive use, usually in conjunction with private development projects".

Source of Funds

Funds are generated by the increase in property value properties in the designated areas. The property taxes generated off of any growth after the area designation are then used to fund projects.

Determination

TIF designated areas must be areas characterized by blight which means areas that potentially have excessive vacancies, lack of physical maintenance, lack of community planning, dilapidation, etc.
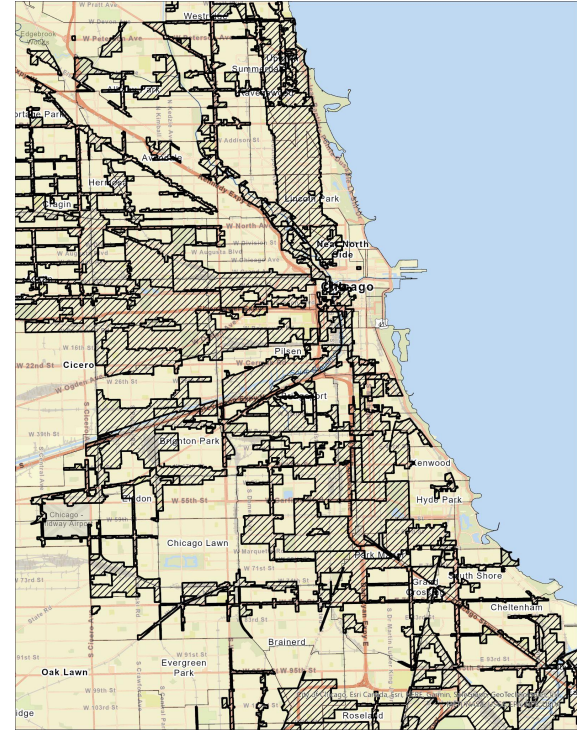
Data

CMAP

Neighborhood boundaries, transit economic data, transit accessibility and walkability scores from 2017

CENSUS

TIGER Census tract boundaries, ACS 5 year economic data including income and household property value from 2020

Chicago Data Portal

TIF boundaries, TIF project data and expenditure from 2017 to 2020

Process

Layering TIF projects over CMAP/Census data and Clusters

Mapping

Machine learning labeling based on 18 economic characteristics

Clustering

Median aggregation on tract level

Aggregation

Join with Census ACS data

Joins

Join on all relevant layers on tracts as the base

GIS Joins

Extract data from ACS with TidyCensus, export shapefiles from CDP and CMAP

Exports

Clustering Analysis on Active TIF Spending
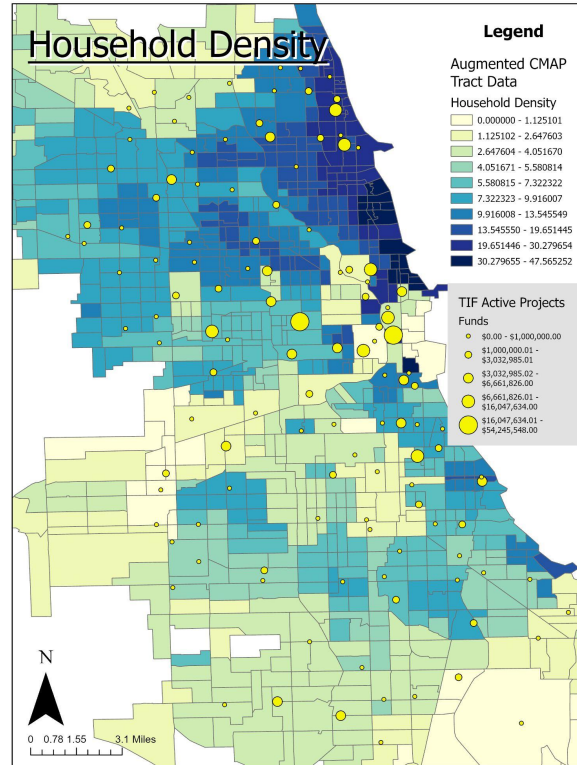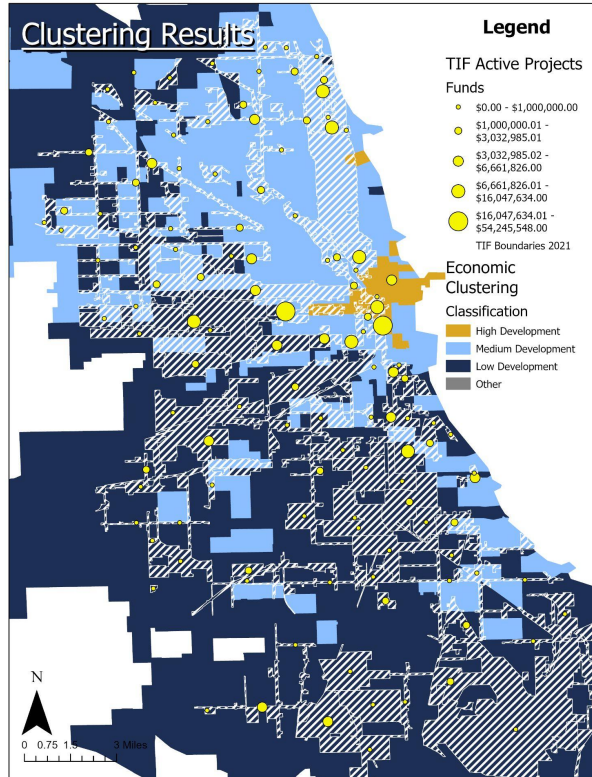
29% Low development areas makeup 29% of TIF spending or about $1.5 million

36% Medium development areas make up 36% of TIF spending or about $1.9 million

35% Highly developed areas get 35% of TIF spending or $1.8 million

Recommendations

A

Redistribute funds across TIF districts. Some TIF funds have much greater funding than others

B

Reshape and assign new TIF districts

C

More public transit projects and funding in low transit areas

D

A more fundamental change in place based economic relations

References

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