The Impact of Opportunity Zones on Commercial Investment and Economic Activity

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What we do (or what we plan to do..)

- Big picture question: Are OZs working? Do we see evidence of increased economic activity?
  - Commercial investment (prices and transactions)
  - Quality changes in restaurants
  - Housing (future work)
  - Foot traffic in local businesses, businesses opening and closing, and employment (future work)
- Last year we expected 2020 to be the first year in which OZs would take off (if ever). Treasury had finalized the rules, December 2019 was the final period to invest and receive the full tax benefits.
- Now we have to take into account Covid-19 and not clear how the pandemic is interacting with OZ investment.

OZ Details

- ⇥ OZ Background
- ⇥ Why might OZs be different?
- ⇥ OZ Eligibility
- ⇥ ACS Stats

Why focus on investment?

- Increased private investment was the direct goal of the legislation
- Increased private investment may be a necessary condition to see other impacts
    - Employment, resident well-being, poverty, etc. all downstream effects, may take longer to observe
    - Tax incentives largest for investment in early period
- If OZs don't increase investment, then tax benefits from OZ investment may have been better invested in other programs to help disadvantaged
    - CEA (2020) estimates $75 billion of capital raised by Opportunity Funds through 2019, at federal cost of $11 billion (18% of SNAP cost in 2019)

Data (1)

- Commercial investment `▸ sumstats`
  - Transaction level data from Real Capital Analytics (RCA)
  - Universe of transactions valued at over \$2.5 million from 2010 through 2020
  - Numerous details on each transaction:
    - price, age of structure, type of transactions (e.g., new construction or sale of existing structure), address, buyer objectives, buyer and seller information, and many details on financing of the loans.
  - Focus on number and dollar amount of investments
  - Summary of summary stats: Selected tracts are more likely to be industrial, lower prices and older buildings compared to other tracts. More transactions compared to Eligible but not selected but about equal to Ineligible tracts.

Annualized dollars of investments per quarter by tract type, 2010-2019
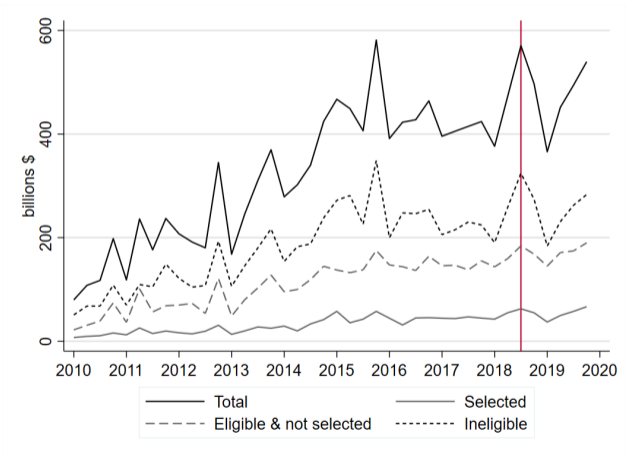
Fuzzy Multivariate Regression Discontinuity Approach

- OZ eligibility depended on meeting at least one of:
    1. Official poverty rate of at least 20 percent
    2. Median income below 80 percent of the median income in the state or metropolitan area
    3. Contiguous with a census tract meeting one of the conditions in (1) or (2) and have a median income less than 125 percent of the qualifying census tract
- Use (multivariate) eligibility cutoffs to get "intent to treat" effect of being **eligible** as OZ
- Use "fuzzy" design to get "treatment on treated" effect of being **selected** as OZ

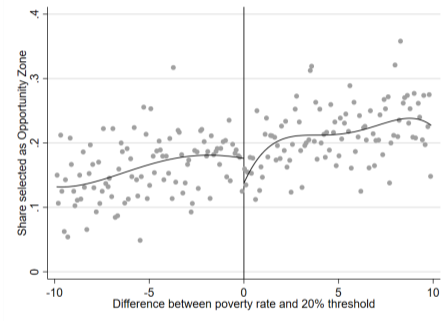# Distribution of census tracts across eligibility standards
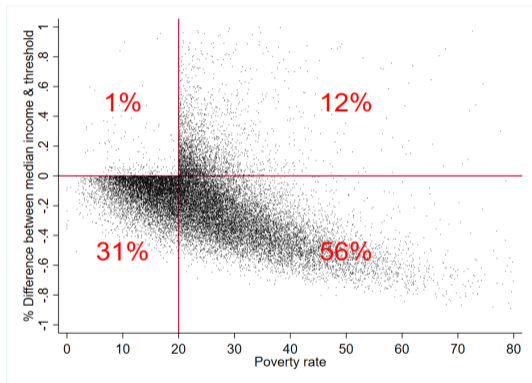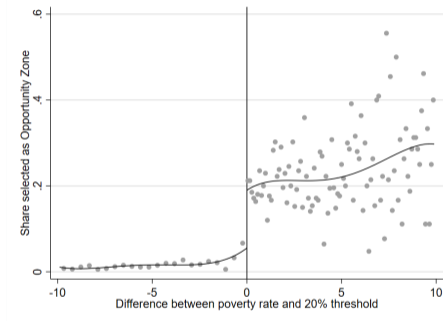

(a) Eligible tracts
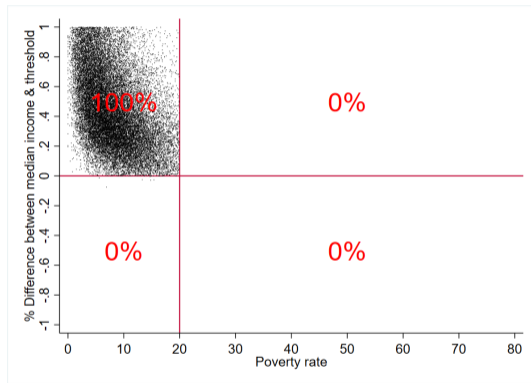
(b) Ineligible tracts

Share of tracts designated as OZs by difference between poverty rate and threshold

(a) Tracts with median income below 80% of MSA/state median income

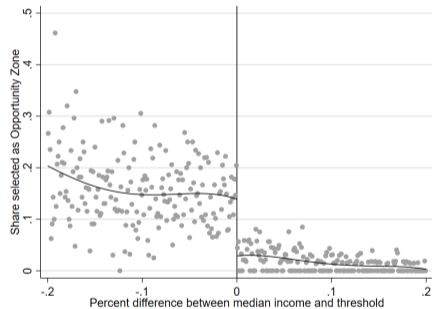(b) Tracts with median income above 80% of MSA/state median income

Sources: American Community Survey 2011-2015 5-year pooled sample; U.S. Department of the Treasury.
Notes: Each dot represents the sample average within each bin. Fitted lines are based on a polynomial of degree 4 fitted separately to points on either side of the cutoff.

Share of tracts designated as Opportunity Zones by difference between median income and threshold
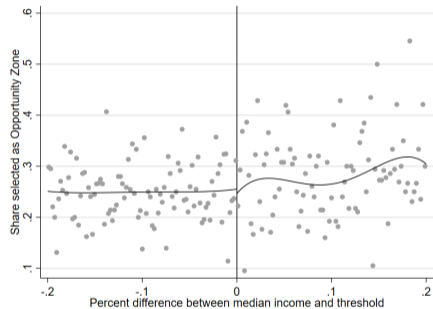
(a) Tracts with poverty rate above 20%

(b) Tracts with poverty rate below 20%

Sources: American Community Survey 2011-2015 5-year pooled sample; U.S. Department of the Treasury.
Notes: Each dot represents the sample average within each bin. Fitted lines are based on a polynomial of degree 4 fitted separately to points on either side of the cutoff.

Two-dimensional RD

Combine the poverty and income variables into a single running variable with a single cutoff point for eligibility.

In particular we construct the running variable r:

$$r_{i,m} \equiv \max\{\frac{P_i - 20}{20}, -\frac{I_i - 0.8 * I_m}{0.8 * I_m}\}$$

where P_i is the poverty rate and I_i is the median income in census tract i, and I_m is the median income in MSA or state m.

Share of tracts designated as Opportunity Zones by running variable
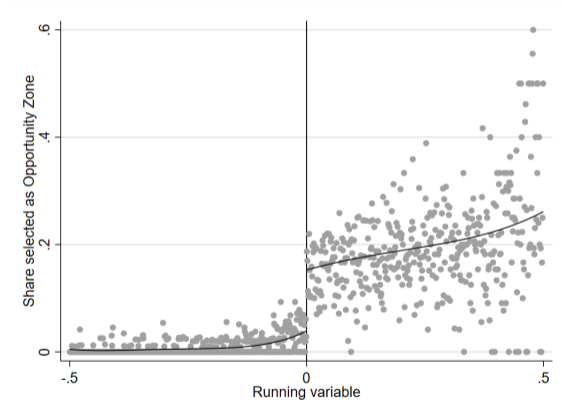
Sources: American Community Survey 2011-2015 5-year pooled sample; U.S. Department of the Treasury.
Notes: Each dot represents the sample average within each bin. Fitted lines are based on a polynomial of degree 4 fitted separately to points on either side of the cutoff.

Dependent variables

We consider four primary investment related outcomes

1. 0/1 any investment
2. normalized number of investments
3. dollars of investments
4. normalized dollars of investment

Normalization: the number (dollars) of investment is taken as the ratio of the number (dollars) of investments in a tract in a given period to the mean number (dollars) of investments per tract/period in the same county over the pre-OZ designation time frame.
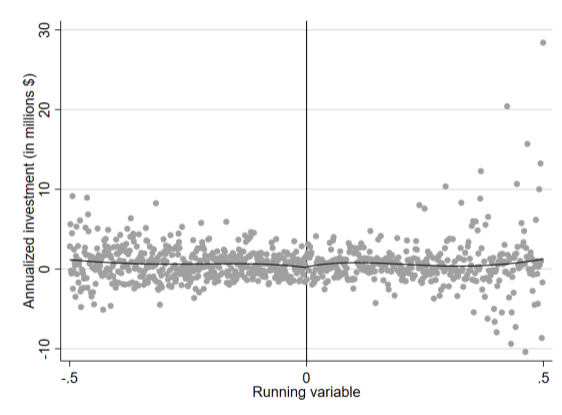
Probability of any investment during treatment period by running variable
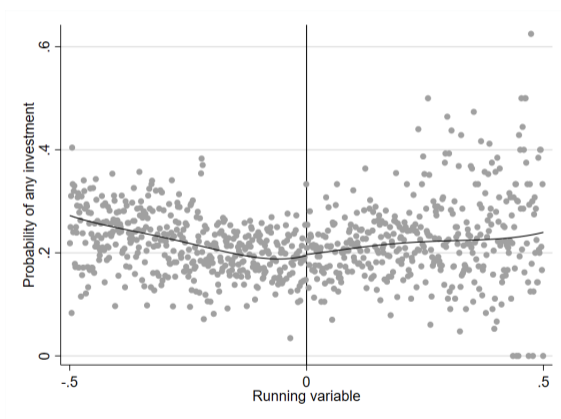
Sources: American Community Survey 2011-2015 5-year pooled sample; U.S. Department of the Treasury.
Notes: Each dot represents the sample average within each bin. Fitted lines are based on a polynomial of degree 4 fitted separately to points on either side of the cutoff.

Change in dollars of investment in treatment period by running variable

Sources: American Community Survey 2011-2015 5-year pooled sample; U.S. Department of the Treasury.
Notes: Each dot represents the sample average within each bin. Fitted lines are based on a polynomial of degree 4 fitted separately to points on either side of the cutoff.

Impact of OZ designation on investment (fuzzy multivariate regression discontinuity estimates

	Prob. of investment	Norm. number of investments	Dollars of investment	Norm. dollars of investment
Without controls	0.055	-0.747	1.799	0.395
	(0.114)	(1.105)	(2.963)	(1.417)
With controls	0.043	-1.262	1.606	0.063
	(0.112)	(1.248)	(2.710)	(1.525)

(Scale up the RD estimates by the probability of being selected.)

Difference-in-Differences

Using only eligible tracts:

$$y_{i,s,t} = \delta_i + \gamma_{s,t} + \beta D_{i,t} + \epsilon_{i,s,t}$$

for each census tract i in state s during quarter t.

$y_{i,s,t}$ is the outcome of interest.

δ_i is a time-invariant tract fixed effect.

$\gamma_{s,t}$ is a state by quarter interacted effect.

$D_{i,t}$ is an indicator variable equal to 1 if census tract i was selected as an OZ and quarter t is the quarter on or after the OZ policy took effect (which we take as the third quarter of 2018).

β represents the treatment effect of OZ designation. $\epsilon_{i,s,t}$ is the error term.
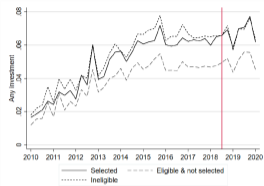
Persistent poverty
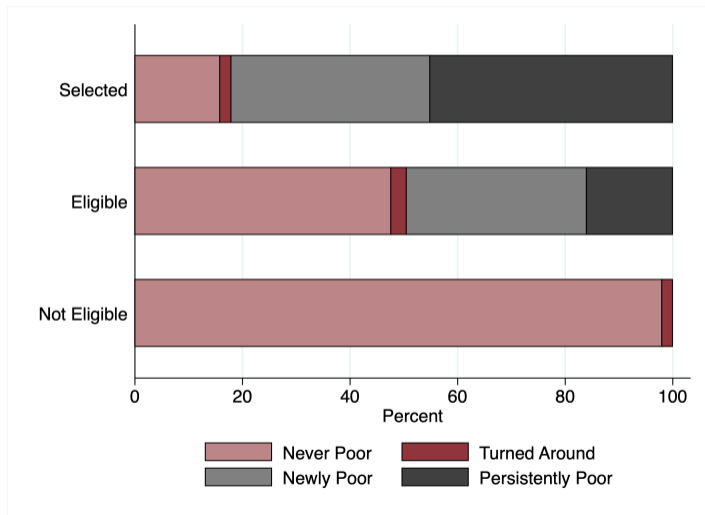
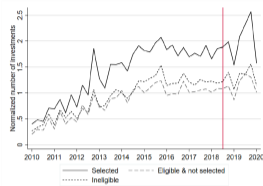# Poverty rate and median income trends, 2010 - 2019
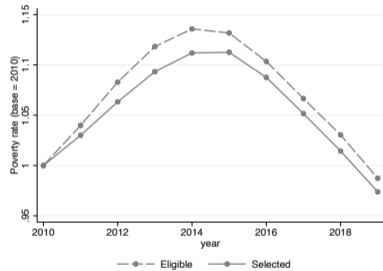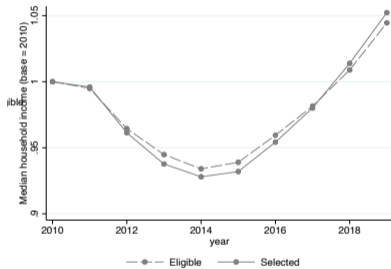
Sources: American Community Survey, 2006-2010; 2007-2011; 2008-2012; 2009-2013; 2010-2014; 2011-2015; 2012-2016; 2013-2017; 2014-2018; 2015-2019 5-year pooled sample; U.S. Department of the Treasury.
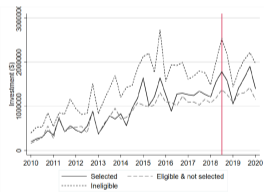
Trends in various investment outcomes, by tract type

(a) Any investment

(b) Normalized number of investments

(c) Dollars of investment

(d) Normalized dollars of investment

Sources: American Community Survey 2011-2015 5-year pooled sample; U.S. Department of the Treasury.
Notes:

Treatment effect for various investment outcomes, difference in differences estimates (4-qtr changes)
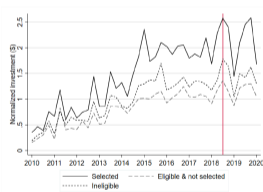

(a) Any investment

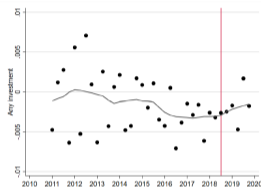(b) Normalized number of investments

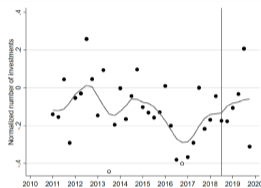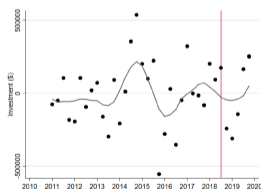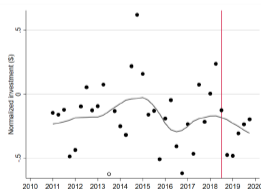(c) Dollars of investment

(d) Normalized dollars of investment

Sources: American Community Survey 2011-2015 5-year pooled sample; U.S. Department of the Treasury.
Notes:

Data (2)

Economic activity–SafeGraph data

- Anonymous location data from tens of millions of Americans' cell phones
- Observe exact establishments people visit
- Focus on "Restaurant and Other Eating Establishments"–largest category in the data (about 14% of all establishment visits)
- Roughly 30% of establishments are "branded"
- Create restaurant quality index to proxy for economic development

Restaurant quality

Basic idea:

- Estimate the probability that a restaurant brand is located in an ineligible tract during Jan-Jun 2018. The higher the probability, the higher the quality.
- Within each census tract, take these quality measures and weight them by number of visits—this gives us a restaurant quality weighted average for each census tract.
- Selected: .507 (.134); Eligible: .533 (.137); Ineligible: .572 (.148)
- Measure the change in this quality index over time relative to the base period
- How does change happen?
  - (relatively) more people go to pre-existing higher quality restaurants
  - new restaurants open that are of higher-than-average quality for the census tract..and people go to them.

Distribution of restaurant quality index
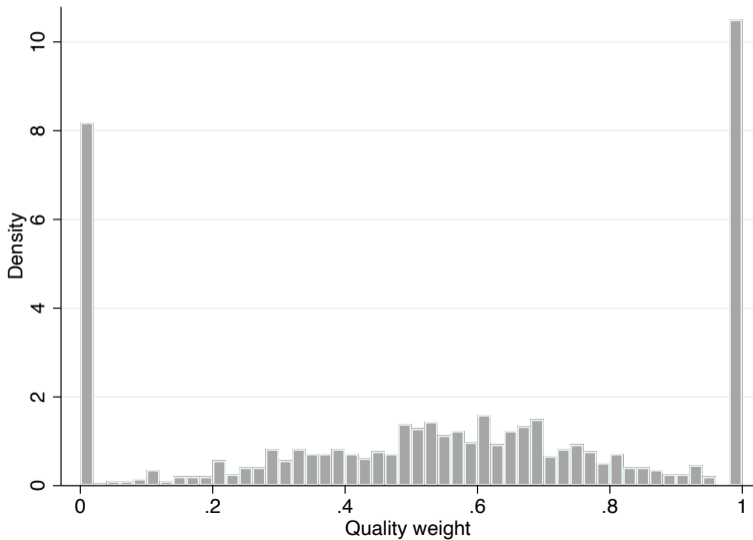
Change in restaurant quality index (Jan-Jun2018 – Jul2018-Dec2019)
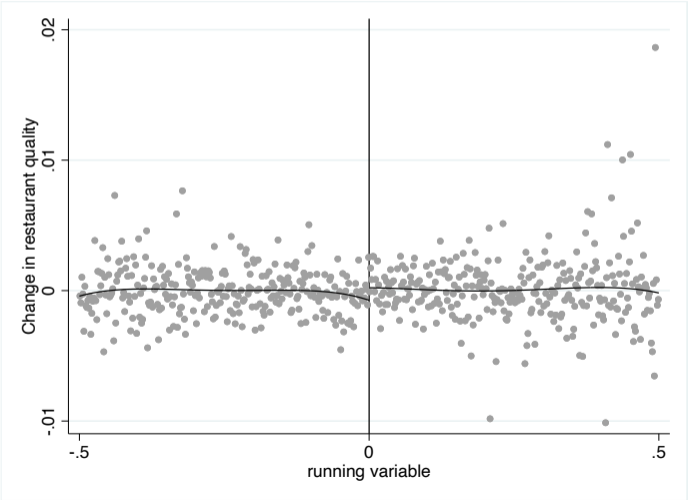
Conclusion

- The persistence of economic disadvantage in some areas in the United States, combined with reduced geographic mobility, has led to renewed calls for policies that can improve the economic circumstances of residents in struggling regions.
- No evidence that OZ tax incentives have significantly increased commercial investment in selected tracts
- Restaurant quality–a proxy for smaller scale investment and more general economic improvement–also shows no evidence of improvement
- Results are consistent across RD and DinD estimation
- Future (1): Dig deeper into Safegraph, e.g. employment outcomes, new business creation
- Future (2): Zillow data on housing
- Fugure (3): Longer time frame?

OZ Background

- Each state governor designated up to 25 percent of eligible census tracts as OZs.
- The final list of designated OZs was officially published by the U.S. Treasury on July 9, 2018
- Census tracts are designed to contain 1,200 to 8,000 residents
- There are approximately 75,000 total census tracts in the United States.
    - Just over 42,000 were eligible to be OZs, and just over 8,700 were actually designated as OZs
- All U.S. census tracts fall into one of three groups: (1) not eligible, (2) eligible and not chosen and (3) eligible and chosen.
- ↦ OZ Details

Why might OZs be different?

- First time that such place-based policies that allow uncapped private investment into areas throughout the country have been implemented.
- Much of the existing research on EZs and similar type designations is based on experiences during the 1990s or earlier
- OZs are focused on attracting private capital into distressed areas, as opposed to subsidizing employment
- Wide flexibility in terms of the type of investment and does not cap the amount of investment that is subject to tax-preferred treatment
-

OZ Eligibility (at least one)

- (a) Official poverty rate of at least 20 percent
- (b) Median income below 80 percent of the median income in the state or metropolitan area
- Contiguous with a census tract meeting one of the conditions in (a) or (b) and have a median income less than 125 percent of the qualifying census tract.
- (▸ OZ Details)

Summary Statistics–American Community Survey, 2011-2015, 5-year pooled sample

| | Eligible | | Not Eligible |
| | Selected | Not Selected | |
Num. Tracts	(8,762)	(33,415)	(31,951)
Median Income ($)	39,071	51,258	94,153
	(15,248)	(17,287)	(31,435)
Poverty Rate	32.51	21.66	7.58
	(14.5)	(11.9)	(4.4)
Unemployment	14.4	10.3	6.1
	(8.1)	(5.9)	(3.2)
LFP	57.1	61.3	66.1
	(11.1)	(10.1)	(9.8)
Education			
Less than HS	.21	.16	.06
	(.12)	(.11)	(.05)
HS	.32	.31	.22
	(.09)	(.10)	(.11)
Some College	.29	.31	.30
	(.08)	(.09)	(.09)
College	.18	.21	.42
	(.13)	(.15)	(.19)

▸ OZ Details

Summary Statistics–Real Capital Analytics, 2011-2015

	Eligible		Not Eligible
	Selected	Not Selected	
Num. Tracts	(8,762)	(33,415)	(31,951)
At least one transaction (%)	41.3	35.5	43.5
Avg. number of transactions	1.2	0.9	1.3
Avg building age	36.3	31.7	29.0
	(35.6)	(28.9)	(28.5)
Median Census Tract Level Price ($000)	4118.5	4575.0	5500.0
Median Price/sq ft, $	101.5	122.0	150.0
Property Type (%)			
Industrial	40.9	33.8	27.4
Office	26.8	26.0	33.1
Retail	32.3	40.2	39.5

▸ Data (1)