Where is the Opportunity in Opportunity Zones

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February 19, 2021

Introduction

What are we Interested in?

- We are interested in the following;
  - It is obvious there is direct tax benefit.
  - However, there might also be some positive spillover effects (gentrification).
  - More general, is the law simply a tax pass-trough to existing landowners, or is there actually some value creation?
- We analyze **prices** and **liquidity** of commercial real estate.
  - Any expected future rent growth, should be priced in now.
  - We argue that young properties cannot enjoy the tax breaks, thus any effect measured here, must come from the fact that positive gentrification effects are expected.
  - We also analyze older properties and vacant land sales. We compare any possible price increases here and compare it with the total maximum tax break possible. (A bit back-of-the-envelope.)

- Consider the following two Eqs;

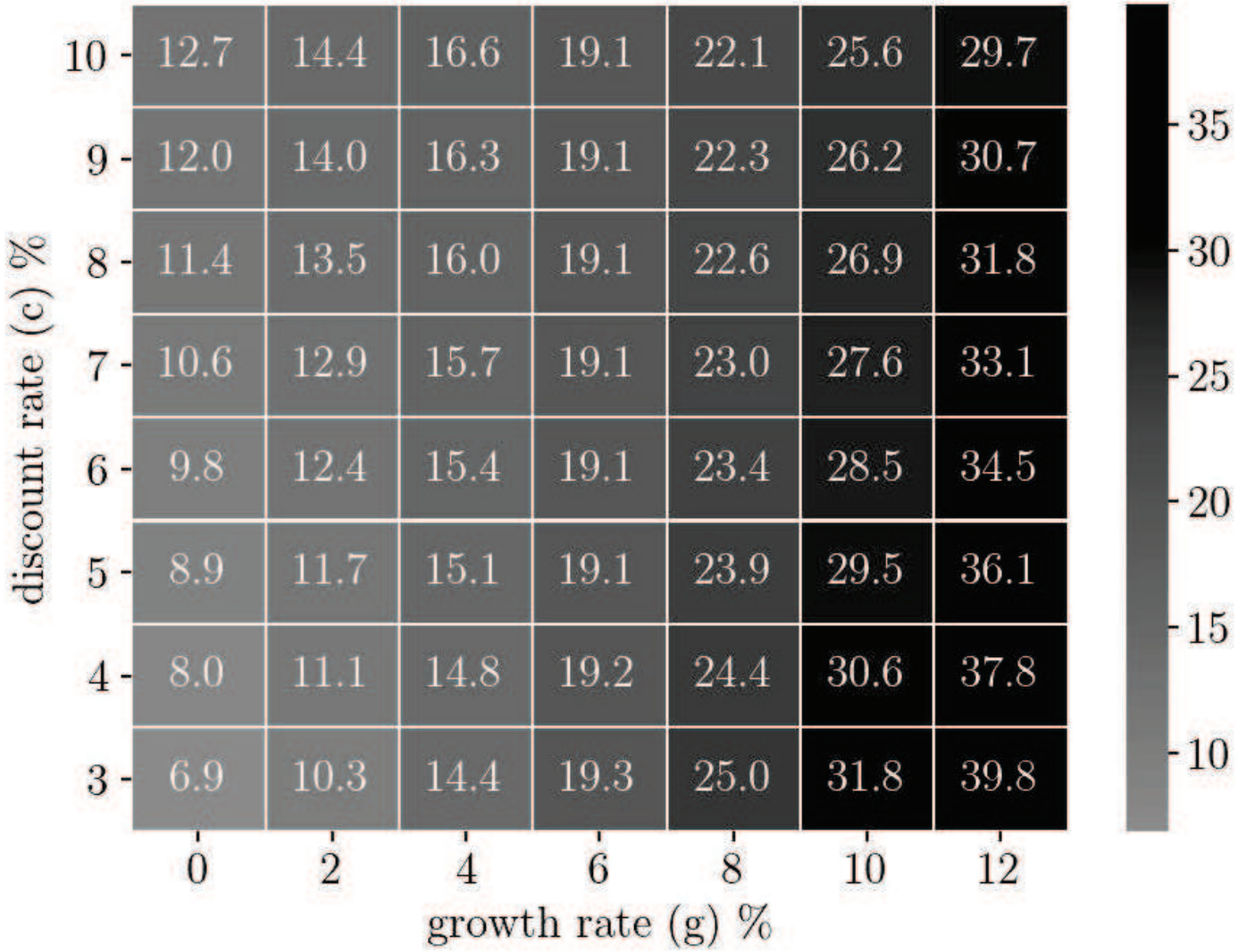
$$\textbf{no OZ: } I_0 = \sum_{t=1}^{T} \frac{CF_t}{(1+c)^t} + \frac{TV}{(1+c)^T} - I_0 x - \frac{(TV - I_0)x}{(1+c)^T}$$

$$\textbf{OZ: } I_0 = \sum_{t=1}^{T} \frac{CF_t}{(1+c)^t} + \frac{TV}{(1+c)^T} - \frac{(1-0.15)I_0 x}{(1+c)^{t_i}}$$

- where we assume;
  - $TV = I_0 \times (1+g)^T$.
  - The initial investment is funded entirely from (past) capital gains.
  - Cash flow and discount rates are **after-tax**.
- We can compute the difference between the two;

$$\Delta OZ = x\left(1 - \frac{0.85}{(1+c)^{t_i}} + \frac{(1+g)^T - 1}{(1+c)^T}\right).$$

Size of the Benefit

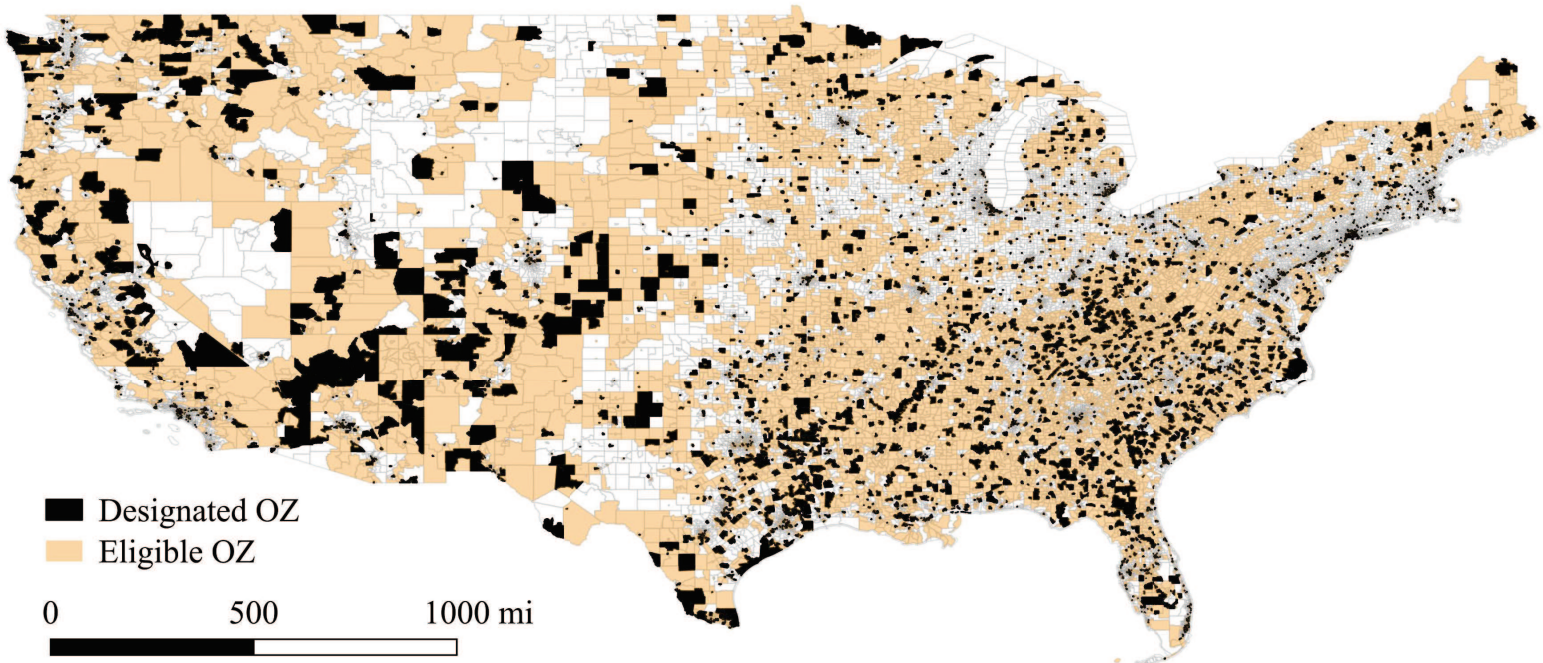


Methodology and Data

Design Philosophy

- Many census tracts were chosen by the federal government to be potential OZ. Out all these eligible census tracts, the individual states designated about 25% of these.
- In essence we perform a Difference-in-Differences (DiD) setup exploiting this designation process.
  - First we perform Propensity Score Matching (PSM) to closely match 1 on 1 designated census tracts with eligible (but not designated) census tracts, based on poverty and income levels.
  - We only look at a relative tight band around the treatment (which happened early 2018), to alleviate any non-parallel trend issues (2017 – 2019). We also look within counties.
  - We run a OLS (for pricing) and Logit (for liquidity) which includes a treatment dummy.
  - Given that we believe age might have an effect, we also break the sample in age cohort and do rolling regressions.
  - Finally, we also look at how persistent/consistent the designation effect has been.

OZ location



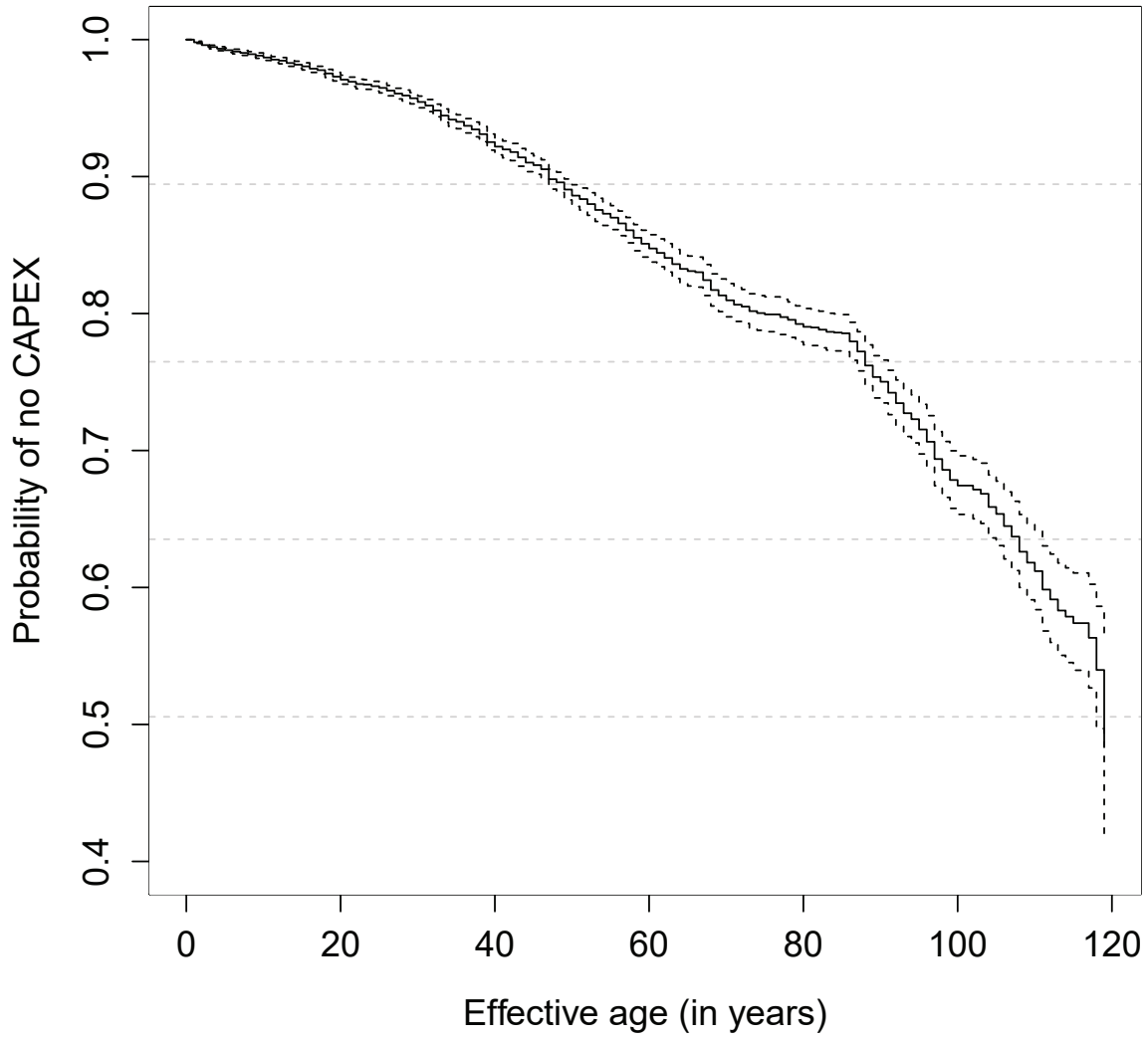
Propensity Score Matching (PSM)

Panel A: Before Propensity Score Matching		
	Eligible	OZ
Avg. median income	$ 44,604	$ 35,252
Std.	$ 14,560	$ 13,405
Poverty rate	0.198	0.283
Std.	0.114	0.135
N.	10,994 (79%)	2,979 (21%)
Panel B: After Propensity Score Matching		
	Eligible	OZ
Avg. median income	$ 35,481	$ 35,252
Std.	$ 12,755	$ 13,405
Poverty rate	0.277	0.283
Std.	0.135	0.135
N.	2,979 (50%)	2,979 (50%)

Real Capital Analytics Data

- For this research we use data provided to us by Real Capital Analytics (RCA).
- RCA is the premier transaction data provider world-wide.
- According to their numbers, they “catch” 95% of all transactions in the US.
- The property needed to have been sold for at least $2.5M in its history once. (So no mom and pop stores.)
- We got the full dataset, meaning 100% of their transaction prices, plus a full set of characteristics, like size, age, property type, location, etc.
- After only looking at the OZ properties + control group between 2017 and 2019, we end up with 12,111 observations for the **existing properties**, and 1,129 observations of **vacant land** transactions.

Kaplan-Meyer To CAPEX



Results

	(I) [1 – 120]	(II) [1 – 30]	(III) [31 – 80]	(IV) [81 – 120]	(V) Land
Transaction Prices					
OZ area	-0.061***	-0.043	-0.081***	-0.075*	-0.143*
(1=yes)	[-3.51]	[-1.63]	[-2.91]	[-1.83]	[-1.75]
OZ designation	0.001	-0.014	-0.014	0.066*	0.320***
(1=yes)	[0.07]	[-0.61]	[-0.57]	[1.75]	[3.19]
Liquidity					
OZ area	-0.013	0.146***	-0.058***	-0.011	-0.049
(1=yes)	[-0.82]	[1.82]	[-2.61]	[1.38]	[-0.46]
OZ designation	0.020	-0.048	0.092	0.054	0.285**

Model II (Prices)

	(I) [1 – 120]	(II) [1 – 30]	(III) [31 – 80]	(IV) [81 – 120]	(V) Land
	Transaction Prices				
OZ area (θ_z)	-0.061***	-0.045*	-0.081***	-0.073*	-0.134
(1=yes)	[-3.49]	[-1.67]	[-2.86]	[-1.77]	[-1.61]
$\mu_{t=2018.I \& t \geq t_d, z}$	-0.004	-0.054	-0.008	0.125	0.330*
(1=yes)	[-0.11]	[-0.92]	[-0.13]	[1.27]	[1.73]
$\mu_{t=2018.II, z}$	0.068**	0.035	0.079*	0.141**	0.375***
(1=yes)	[2.53]	[0.85]	[1.86]	[2.29]	[3.04]
$\mu_{t=2019.I, z}$	0.048	0.017	0.022	0.182**	0.271*
(1=yes)	[1.58]	[0.35]	[0.47]	[2.43]	[1.91]
$\mu_{t=2019.II, z}$	0.064**	0.048	0.082*	0.028	0.223
(1=yes)	[2.12]	[1.04]	[1.76]	[0.36]	[1.45]

Model II (Liquidity)

	(I) [1 – 120]	(II) [1 – 30]	(III) [31 – 80]	(IV) [81 – 120]	(V) Land
			Liquidity		
OZ area (θ_z)	0.014	0.102***	0.009	0.069	-0.086
(1=yes)	[0.47]	[3.37]	[0.30]	[1.29]	[-0.79]
$\mu_{t=2018.I \& t \geq t_d, z}$	-0.090**	-0.063	-0.049	-0.199**	-0.053
(1=yes)	[-2.23]	[-1.00]	[-0.85]	[-1.96]	[-0.23]
$\mu_{t=2018.II, z}$	-0.059*	-0.075	-0.024	-0.069	0.192
(1=yes)	[-1.92]	[-1.58]	[-0.55]	[-0.88]	[1.21]
$\mu_{t=2019.I, z}$	-0.058	-0.136**	-0.039	0.171*	0.683***
(1=yes)	[-1.63]	[-2.44]	[-0.77]	[1.80]	[3.75]
$\mu_{t=2019.II, z}$	0.078**	0.124**	0.078	-0.109	0.314
(1=yes)	[2.24]	[2.34]	[1.59]	[-1.08]	[1.63]

Other Models

- We also estimated a couple of other ("robustness") models;
  - **Breaking up by property type.** We find the biggest effects in office and apartment.
  - **Breaking up by major metros vs non-major metros.** The biggest effect is in the non-major metros, but still large in the major metros.
  - **By size of the real estate.** Most of the price effect in the smaller properties, but liquidity increase mostly for large properties.
  - **Directly measure spillover effects.** We find no spillover effects.

Concluding Remarks

How Large is The Effect?

- For the existing - older - properties;
  - Assuming investors put exactly the same amount of capital expenditures in the property, the total maximum benefit is approximately 32%.
  - The largest price effect we find is 21%.
- For the vacant land;
  - Assuming the average Land Value Fraction (LVF) is 20% for commercial real estate in the US, we find the maximum theoretical benefit is 80%.
  - Our largest estimate is 53%.
- For new properties (needed to find the indirect effect) we do not find a price increase, however we do see that liquidity is up in (late) 2019.