



# *Data Talk* How Changes in Property Taxes Shape Communities: Two Case Studies

#LiveAtUrban

# Housekeeping

- Event is being recorded and the recording will be posted online afterward.
- The slides are available online.
- All participants are muted.
- Type your **questions** or **comments** into the Q&A box at any time.



#LiveAtUrban

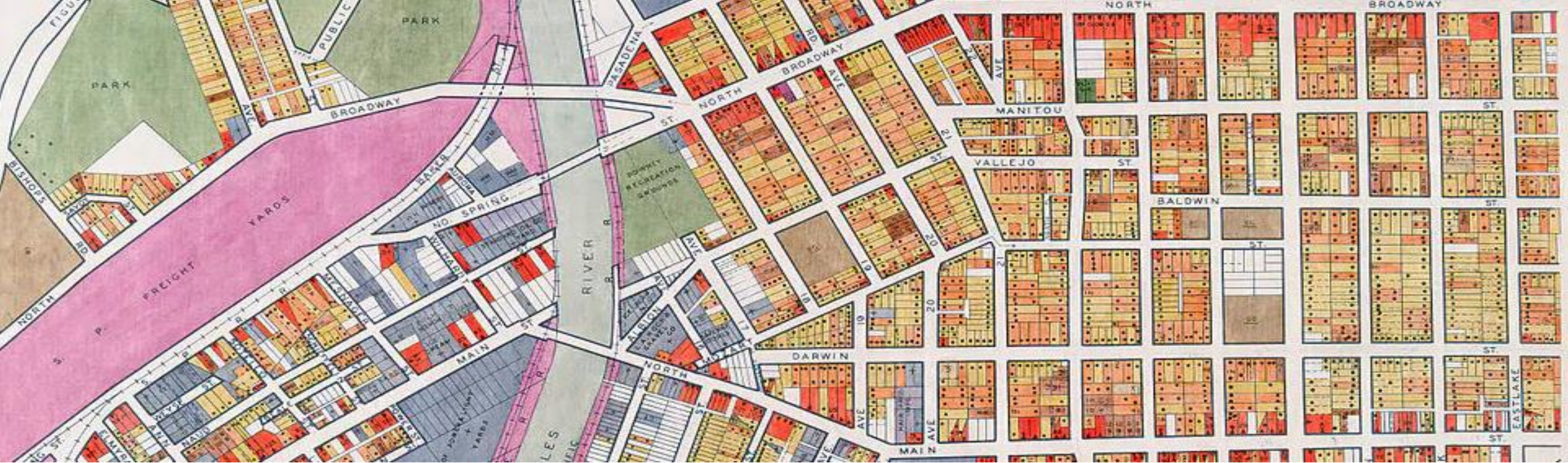


The background of the slide is a photograph of city buildings. On the left is a modern building with a glass and steel facade. To its right is a multi-story brick building with several fire escapes attached to its exterior. The sky is a clear, pale blue.

# *Data Talk* How Changes in Property Taxes Shape Communities: Two Case Studies

#LiveAtUrban





# Housing and Land Use Implications of Proposed Split Roll Tax Reform

Sarah Strochak | August 2020



Joint work with Solomon Greene, Dan Teles, Patrick Spauster, and Laurie Goodman  
Housing Finance Policy Center and Metropolitan Housing and Communities Policy Center

# Proposition 13

- Limits property tax increases
- Locks in assessed value at purchase price or 1975 property value
- Apportions property tax revenue among local governments
- Lowered the tax burden for long-time property owners and increased the tax burden for new homebuyers and commercial owners
- Made local governments more reliant on state aid and other taxes

# Proposed Split Roll Reform

- Continues to assess and tax residential and agricultural properties under the rules of Proposition 13
- Reassesses commercial and industrial properties based on market value
- Redistributes new tax revenue between the state, local governments, special districts, schools, and community colleges (60% to local governments 40% to schools)
- Exempts properties valued at under \$3M, unless the property owner has greater than \$3M in property statewide



# Housing Implications of Split Roll

- Increases revenue for local governments and can help balance tax rolls. Additional revenue could be allocated to support affordable housing development.
- May also alter the incentives for both zoning and development. Critics argue that split roll will worsen “economic zoning” while defenders argue that it can incentivize multifamily development and reduce the need for local governments to chase sales tax.
- We examine the split roll proposal in the context of California’s housing crisis, which is defined by a shortage of new multifamily housing and a lack of access to affordable housing.

# Our Model

- By combining property records with land use and zoning data, we estimate the financial incentives...
  - For municipalities to rezone from residential to commercial or industrial uses (**at risk parcels**)
  - For private owners and developers to shift from a commercial or industrial to residential use (**opportunity parcels**)
- We then compare the relative strength of these incentives and discuss how they might influence future land use and residential development if the split roll proposal is passed



# Data Sources

1. Interviewed with state and local stakeholders to help design the model
2. Collected apportionment ratios for each case study city to determine how much additional revenue a municipality keeps for each dollar it collects.
3. Determine at risk and opportunity parcels using First American property records data for information on ownership, location, surrounding land use, current assessed values, and zoning.
4. Identified base rates of appreciation from Moody's commercial price index to create a wedge between new commercial or industrial and new residential over time.

# Selecting Case Study Cities

- Viable, quality data
- Diversity of:
  - Region
  - Urban/suburban places
  - Population
  - Apportionment schedules
  - Home values
- After selecting cities, we interviewed statewide and local stakeholders



# Identifying At-Risk Properties

Properties at risk of being rezoned from residential to commercial or industrial use\*:

- Vacant land OR improved land with aging residential structure
- Land currently zoned to allow residential use
- Land within 0.25 miles of a commercial or industrial area\*
- Properties with estimated current market value of greater than \$3M

\* Whether we include commercial and/or industrial uses in at-risk analysis depends on use restrictions in local zoning code.



# Identifying At-Risk Parcels: Los Angeles

Vacant

Aging residential structure

Proximity to industrial parcels

Zoning allows multifamily

Predicted market value > \$3M

Parcels remaining

177,420

40,899

29,309

Final at risk parcels:  
3,830

# Quantifying Municipal Incentives to Rezone At-Risk Properties to Exclude Residential Use

- Estimate the market value of improved land using a model based on similar sales in the area
- Estimate the short-term incentive as the additional revenue from reassessment of all at-risk vacant properties in year one
- Estimate the long-term incentive as the “wedge” in tax revenue between original (residential) and converted (industrial or commercial) use for all at-risk properties over time, based on assumptions about market strength

# Identifying Opportunity Properties

Properties for which split roll may increase incentives for owner or developers to convert from commercial or industrial to residential use:

- Privately owned land
- Vacant land OR improved land with an aging commercial or industrial structure
- Land currently zoned to allow commercial or industrial and residential use
- Properties with estimated current market value of greater than \$3M



# Identifying Opportunity Parcels: Los Angeles

Vacant

Aging commercial/  
Industrial structure

Privately owned

Zoning allows  
commercial

Predicted market value  
> \$3M

Parcels remaining

27,526

26,356

21,232

Final opportunity parcels:  
8,104

# Quantifying Owner/Developer Incentives to Convert Commercial or Industrial Properties to Residential Use

- Estimate the market value of improved land that using a model based on similar sales in the area
- Estimate the “wedge” in owners’ property tax liability between the converted use (residential) and the unconverted but redeveloped use (commercial/industrial) over time, based on assumptions about market strength

# Limitations of Model

- In our at-risk analysis, we only estimate potential changes to zoning and permitted uses, not what will be entitled and built. But the strength or weakness of the incentive may apply more broadly to municipal decisions re entitlements.
- We do not assess potential legal challenges to rezoning to exclude multifamily solely in order to generate tax revenue (for at-risk analysis) nor can we quantify countervailing political pressures related to zoning changes and entitlements (such as community opposition or developer lobbying).



# Parcel Counts for All Four Case Study Cities

	At risk parcels		Opportunity parcels	
	Vacant	Aging residential	Vacant	Aging commercial/ Industrial
Los Angeles	3,679	151	7,928	176
Fresno	10	9	257	34
Chula Vista	4	1	80	11
Berkeley	21	2	68	20

# Key Assumptions

## TIMING

- No properties convert (change use or zoning) until after split roll is implemented
- For any given year (1, 5, 10, or 20) we calculate long-run incentives by comparing a world in which every property has converted since split roll was implemented.

## APPORTIONMENT

- New tax revenue generated when residential properties are re-assessed upon a sale or because of improvements are apportioned at current (2019) apportionment rates
- New tax revenue generated when commercial properties are re-assessed at market value is apportioned with 40% going to schools and 60% going to local governments (“split roll revenue”). Local government then divide that 60% proportionally based on current apportionment rents.

## APPRECIATION

- Low annual commercial price growth: 2.0%
- Medium annual commercial price appreciation: 3.5%
- High annual commercial price appreciation: 5.7%

# Revenue Gain from Reassessment of Vacant At-Risk Parcels: Los Angeles

	Total value	Total revenue
Annual revenue on Vacant At Risk Parcels	\$364,199,617	\$964,226
Potential Revenue if Reassessed	\$1,851,708,224	\$3,790,956
<hr/> <b>Additional Revenue (difference)</b>		<b>\$2,826,720</b>
<i>For context:</i>		
<i>Los Angeles Total Property Tax Revenue</i>		<i>\$1,612,148,631</i>
<i>Percent of Total Property Tax Revenue</i>		<i>0.18%</i>

**Note:** The apportionment rate for assessed properties without Prop 15 in place is 0.265%. With Prop 15 in place, it decreases to 0.205%.



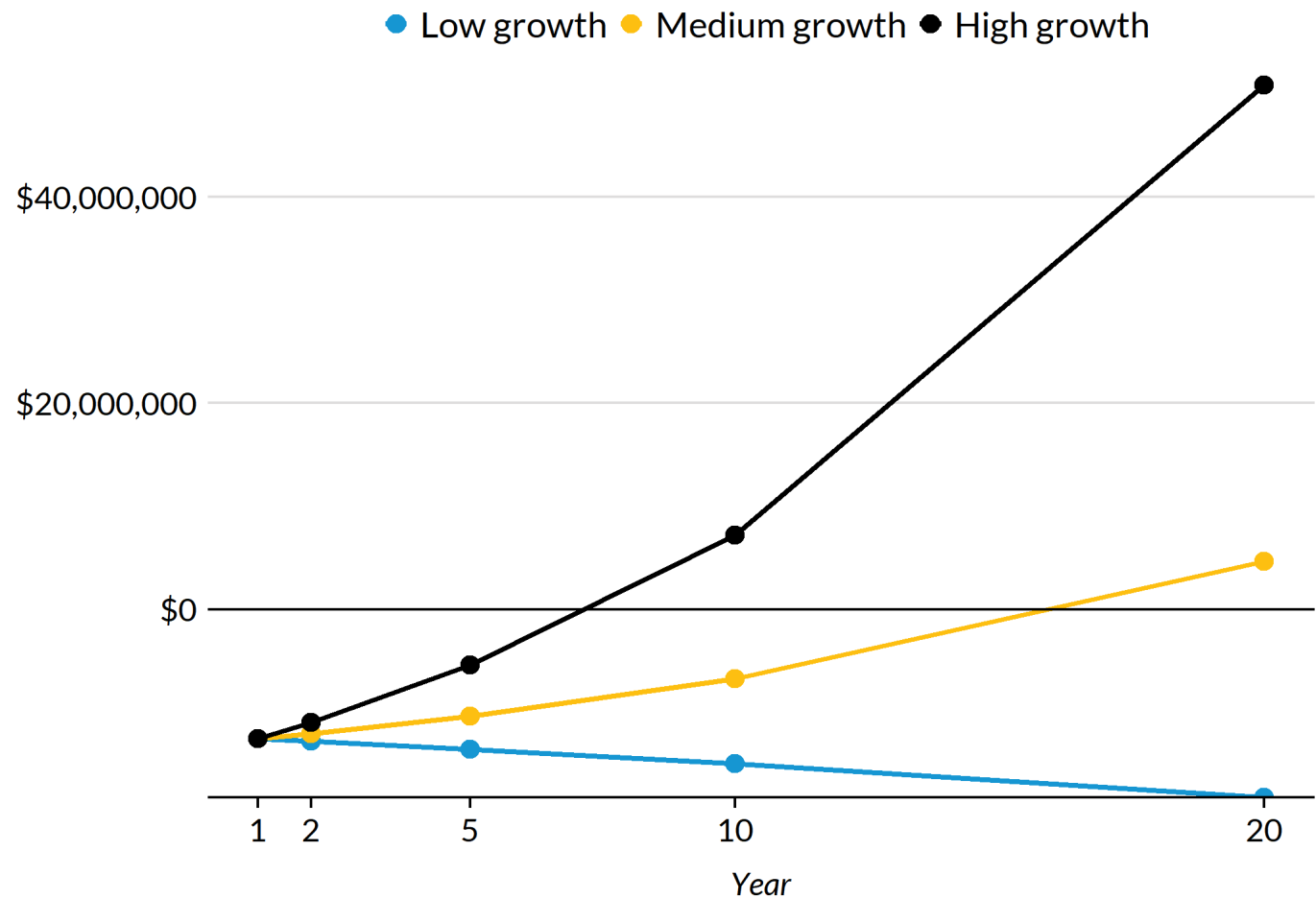
# Long-Term Incentive to Rezone At-Risk Parcels: Los Angeles

Revenue to the city in year since split roll was enacted

Year	Low growth		Medium growth		High growth	
	Property remains residential	Property converted to commercial	Property remains residential	Property is converted to commercial	Property remains residential	Property is converted to commercial
1	61,633,654	49,089,516	61,633,654	49,089,516	61,633,654	49,089,516
2	62,866,327	50,071,306	62,866,327	50,809,033	62,866,327	51,886,269
5	66,714,249	53,136,070	66,714,249	56,337,489	66,714,249	61,269,389
10	73,657,922	58,666,515	73,657,922	66,920,383	73,657,922	80,828,040
20	89,788,595	71,514,155	89,788,595	94,423,540	89,788,595	140,669,211

# Long-Term Incentive to Rezone At-Risk Parcels: Los Angeles

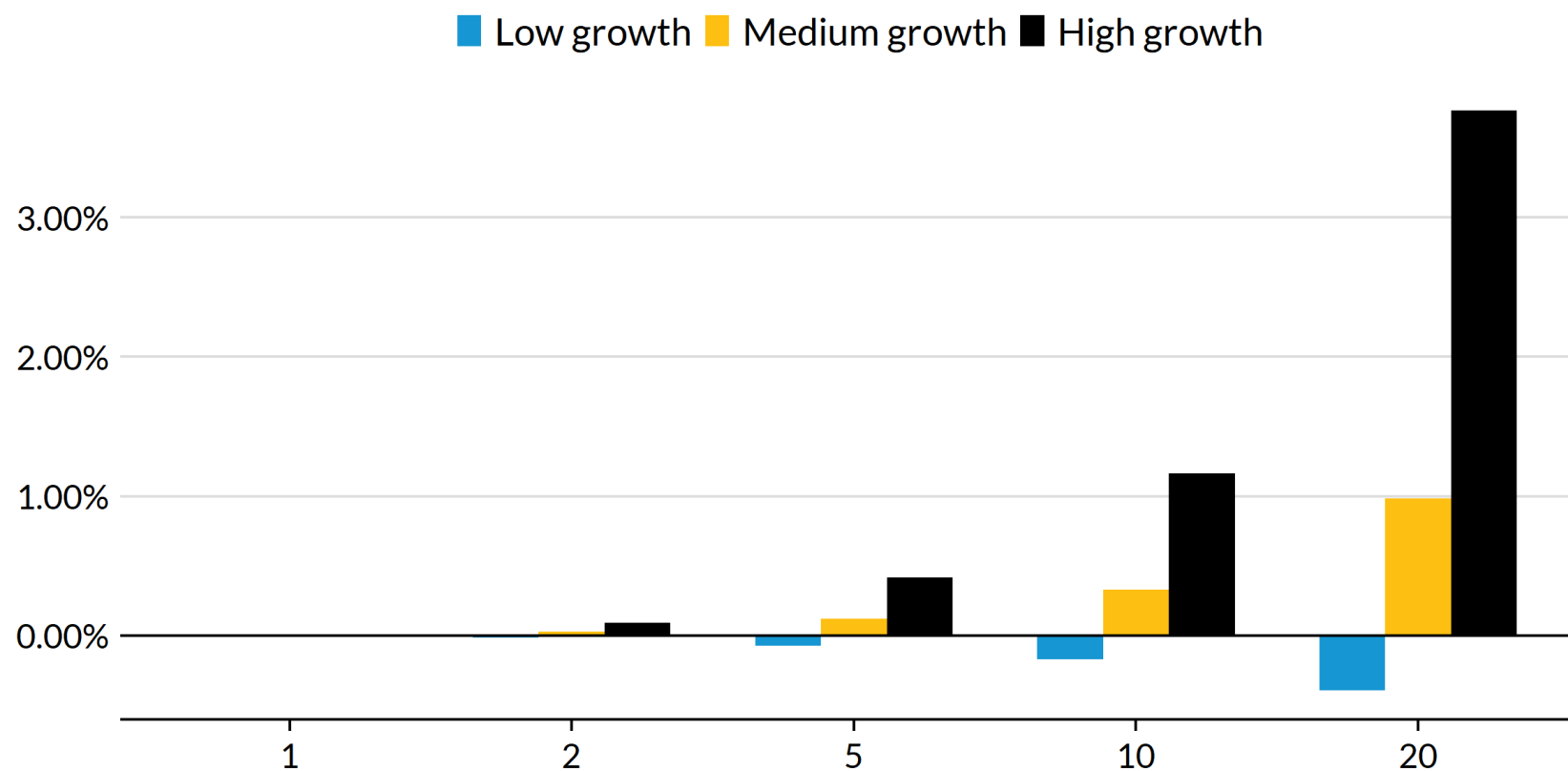
## Revenue to the city in year since split roll was enacted



**Note:** Under a low growth scenario, revenue will decline, because commercial development will be subject to a lower apportionment ratio- 0.205%, as opposed to 0.265% before split roll.

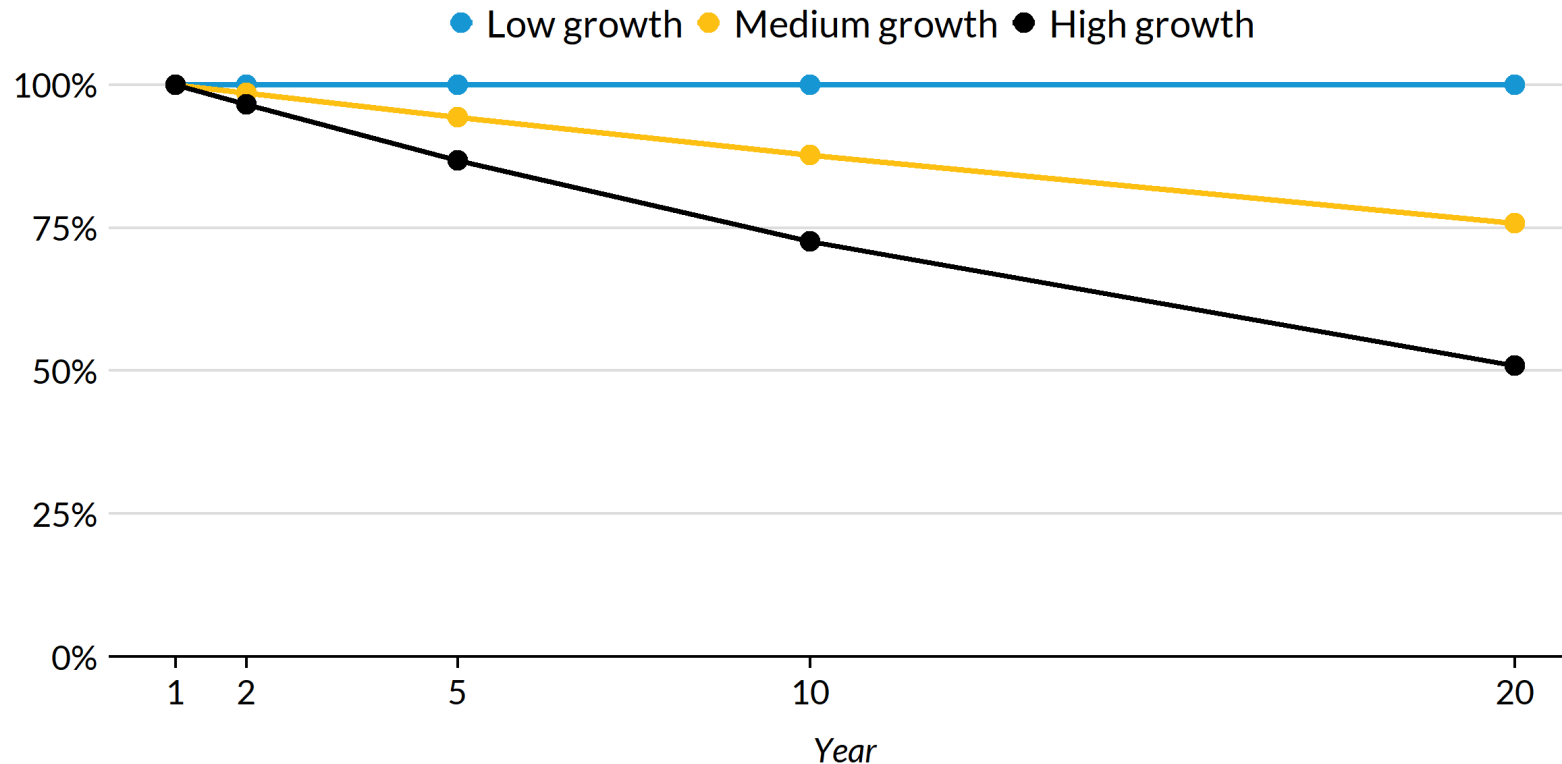
# Long-Term Incentive to Rezone At-Risk Parcels: Los Angeles

Increased revenue as a share of city's total property tax revenue



# Opportunity Parcels: Los Angeles

Over 20 years, taxes paid on a residential structure will be 25-50% less than taxes paid on a commercial structure of the same value, under medium-high price appreciation.



# Opportunity Parcels: Los Angeles

Tax savings if parcels are sold, converted to residential use, and reassessed

Year	Low growth	Medium growth	High growth
1	0	0	0
2	0	11,831,071	29,106,905
5	0	51,341,749	130,435,526
10	0	132,368,803	355,408,462
20	0	367,402,037	1,109,052,388



# Comparing incentives

## Long run, under moderate price appreciation

Year	Los Angeles		Fresno		Berkeley	
	At risk benefits	Opportunity benefits	At risk benefits	Opportunity benefits	At risk benefits	Opportunity benefits
Short term	\$2,826,730	n/a	\$140,814	n/a	\$10,084	n/a
1	-\$12,544,138	\$0	-\$15,808	0	-\$106,449	\$0
2	-\$12,057,293	\$11,831,071	-\$5,107	\$1,055,032	-\$101,468	\$40,687
5	-\$10,376,759	\$51,341,749	\$30,696	\$4,578,385	-\$84,368	\$176,565
10	-\$6,737,538	\$132,368,803	\$104,363	\$11,803,948	-\$47,665	\$455,219
20	\$4,634,945	\$367,402,037	\$319,075	\$32,762,964	\$65,726	\$1,263,502

**Note:** At risk benefits = new revenue to the city. Opportunity benefits = tax savings to private owners, if properties trade and convert. Results are not presented for Chula Vista due to small number of at risk parcels.

# Key Takeaways

- Across cities, very few parcels are viable for conversion from residential use to industrial or commercial under existing land uses and zoning codes. Across cities, there are more parcels eligible to be converted from commercial or industrial use to residential use.
- Short-term incentives for cities to rezone vacant residential properties are limited and only a small fraction of total property tax revenue.
- Long-term incentives for owners and developers to build/convert to residential uses are much stronger than for municipalities to rezone under medium and high price appreciation scenarios
- Additional revenue from sales or redevelopment are larger than potential revenue from split roll reassessment.



# *Data Talk* How Changes in Property Taxes Shape Communities: Two Case Studies

#LiveAtUrban



# Effects of Gentrification on Homeowners: Evidence from a Natural Experiment

Lei Ding

Federal Reserve Bank of Philadelphia

August 6, 2020



## Disclaimer



The views expressed here are those of the authors and do not necessarily reflect the views of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.



# Overview of the Study



Two research questions

- What are the causal effects of gentrification on homeowners?
- What have been the effects of gentrification-relief programs?

# Motivation: Effects of Gentrification on Homeowners



- Growing concern about gentrification before COVID-19; particularly on displacement of low-income renters and long-term homeowners living on fixed incomes.
  - Gentrification: increased investment and influx of middle- and upper-class residents in low-income neighborhoods
  - Implies residential displacement of preexisting residents



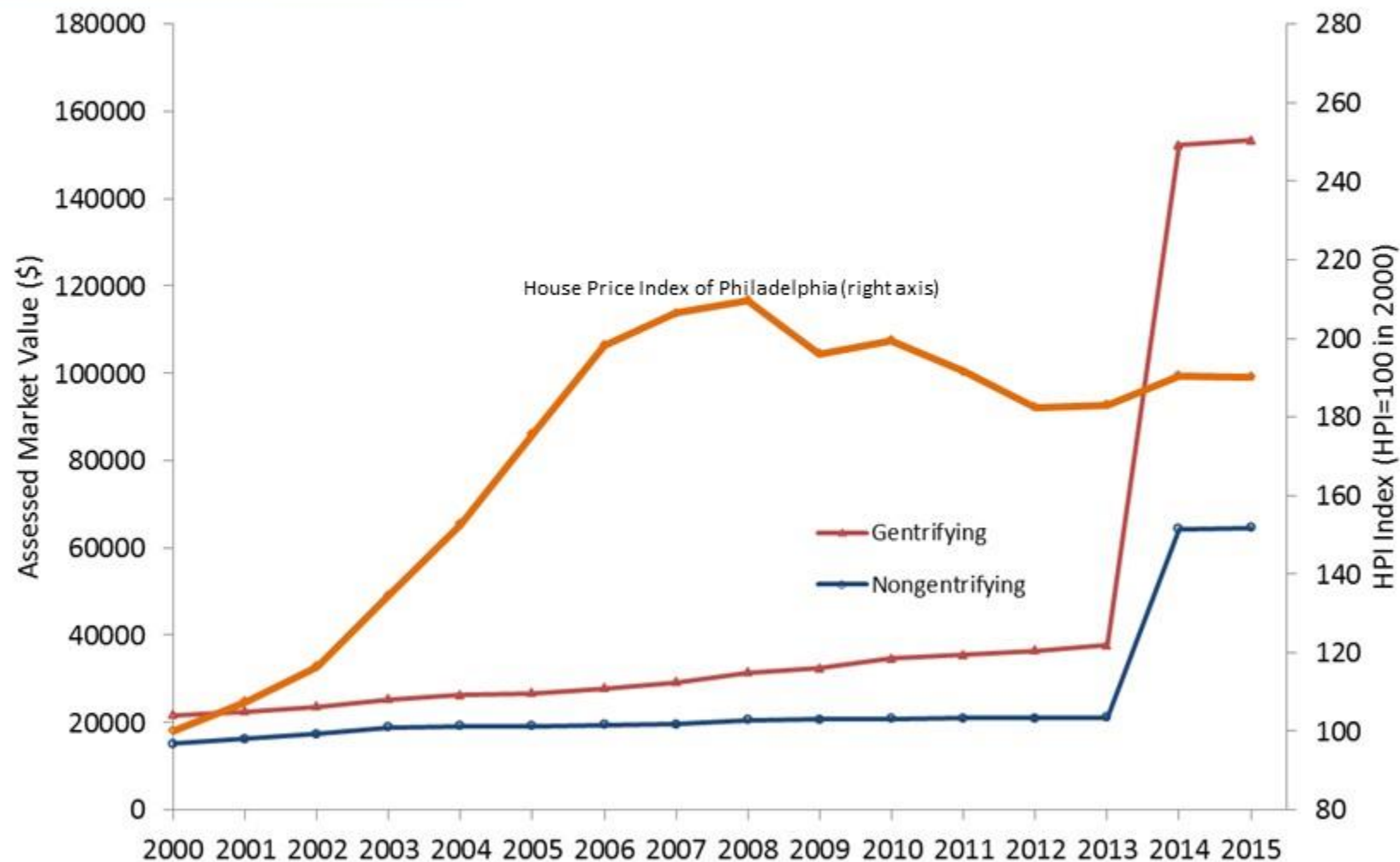
## Motivation: Effects of Gentrification on Homeowners



- Gentrification shock is often concurrent with outcomes
  - Gentrification is an ongoing, evolving process that often occurs simultaneously with increases in property taxes
- Challenges in decouple property tax effects from housing wealth effect
  - Gentrification could increase both housing wealth and property tax payments
  - Moves can be induced by wealth effects or property tax increases (forced moves)

**Philadelphia: housing wealth accrues with gentrification; but property tax effects were not manifest until 2014**

# Average Assessed Market Value and HPI Philadelphia, 2000 – 2015



Notes: Properties in gentrifying and nongentrifying neighborhoods are within a half-mile radius of the boundary of a gentrifying tract. House price index is for single-family units only.

Source: Authors' calculations using data from the City of Philadelphia and CoreLogic Solutions.





## Philadelphia's Actual Value Initiative (AVI)

### Property taxes in Philadelphia before 2013

- Low assessments of properties: no comprehensive market value reassessment since 1980s
- Extremely high rates of tax delinquency (about 20%)
- Lesser reliance on property taxes compared with other jurisdictions

### Property taxation system overhaul in 2013

- Comprehensive reassessment of property market values
- Revenue-neutral: had both positive & negative effects on property taxes



# Identification: Effects of Gentrification on Homeowners



Property-level analysis:

$$Y_{ijt} = \beta_0 + \beta_1 * GENTRIFY_j + \beta_2 * AVI_t + \beta_3 * GENTRIFY_j * AVI_t + \gamma * X_i + TRACT_j + YEAR_t + \epsilon_{ijt}$$

- $Y_{ijt}$  represents the value of the outcome measure  $Y$  for property  $i$  in year  $t$
- $X_i$  represent a set of property characteristics
- $N_i$  represents the fixed effect of the tract in which property  $i$  is located
- $GENTRIFY_j$  is the dummy variable which represents whether tract  $j$  had been gentrifying during the 2000-2013 period
- $AVI_t$  is the time dummy (1 for the post-2014 period)
- $GENTRIFY_j * AVI_t$  is the two-way interaction of the time and treatment dummies.

Treatment:

- Treatment is the AVI itself: how AVI impacts gentrifying and nongentrifying neighborhoods differently
- Treatment can also be considered as gentrification (coupled with several tax relief programs) on tax delinquency/displacement outcomes

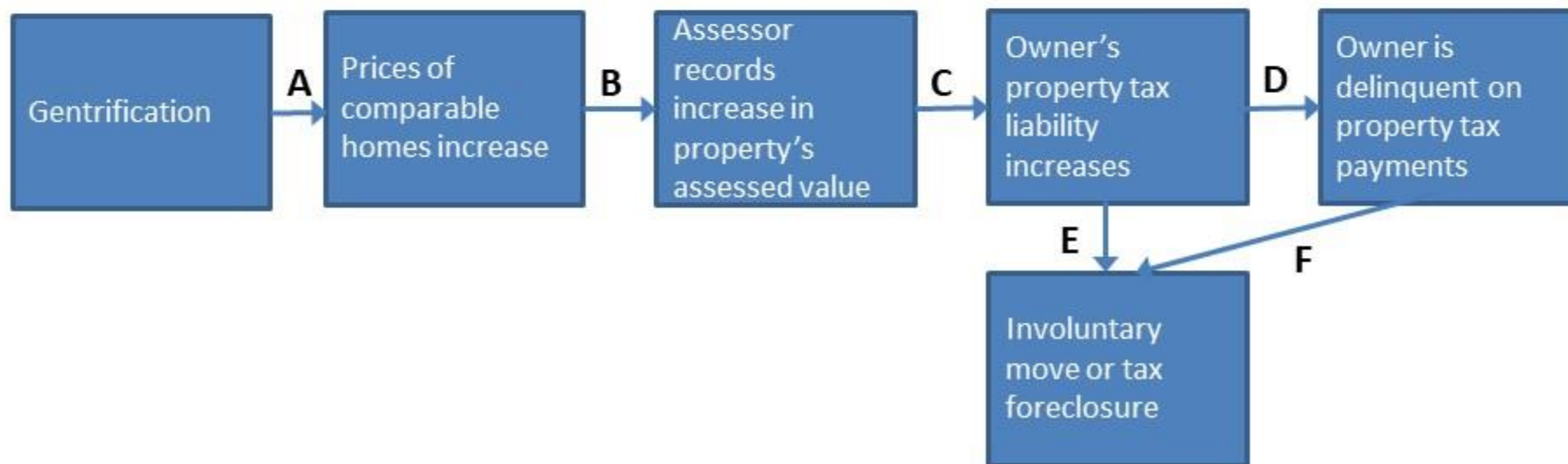
Control group:

- Potentially affected tracts: low-income (below city median)
- Control group limited to non-gentrifying tracts within 0.5 miles of gentrifying tracts

# Identification: Effects of Gentrification on Homeowners



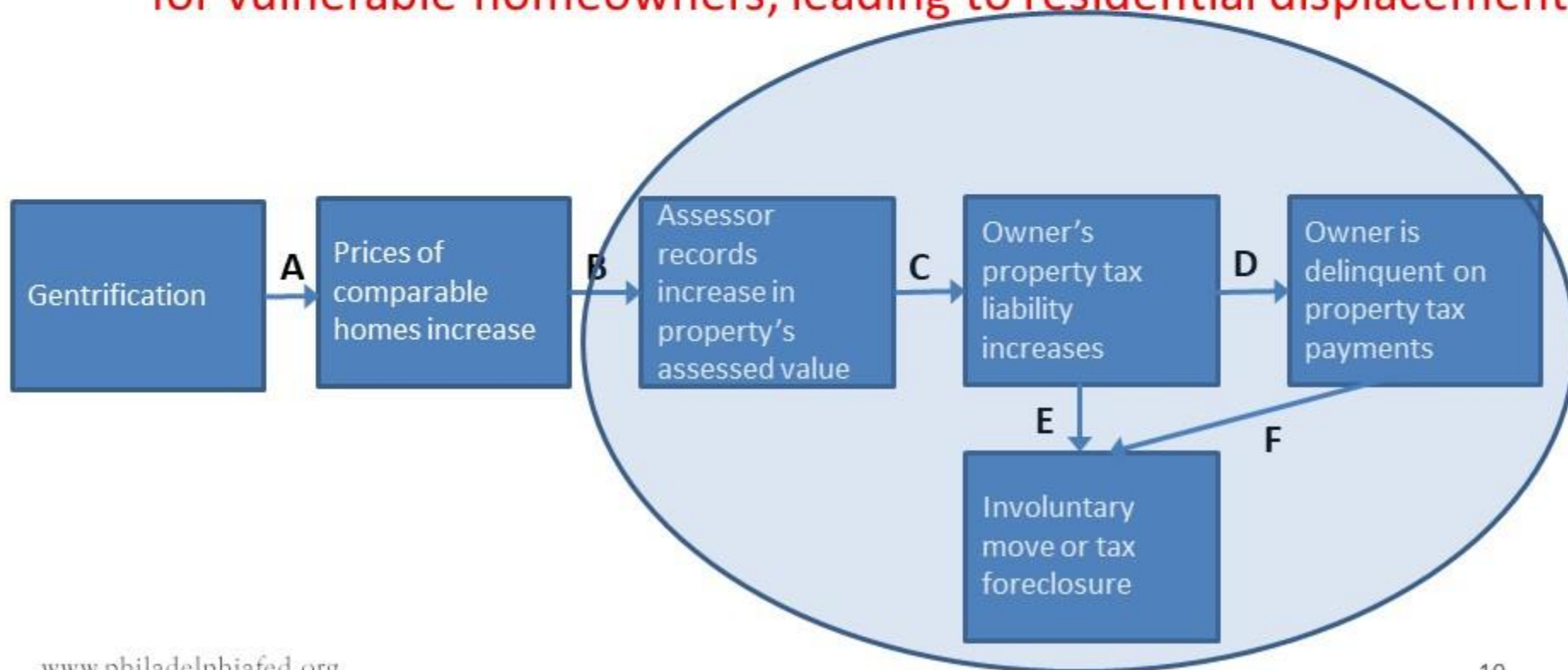
- Help unpack “black box” of displacement
  - Renters: evictions, landlord harassment, rent increases
  - **Homeowners: property tax increase poses a liquidity problem for vulnerable homeowners, leading to residential displacement**



# Identification: Effects of Gentrification on Homeowners



- Help unpack “black box” of displacement
  - Renters: evictions, landlord harassment, rent increases
  - **Homeowners: property tax increase poses a liquidity problem for vulnerable homeowners, leading to residential displacement**





## Effects of Gentrification-relief Programs

- Homestead Exemption
  - Benefits: exemption of up to \$30,000 of assessed value from taxation (later \$45,000)
  - Eligibility: owner-occupied primary residences
  
- Longtime Owner Occupants Program (LOOP)
  - Benefits: property's taxable value capped for 10 years (later as long as homeowners remain eligible)
  - Eligibility
    - Low or moderate-income: below 150 percent of the area median income
    - Long-term homeowners: have lived in their homes for at least 10 years
    - Assessed values increase by 300 percent in one year (later an increase by 50 percent or more)
    - Current on property taxes
  
- Identification: a three-way DID regression to evaluate the effects of the tax exemption and abatement programs



# An Illustration



	2013 (Pre-AVI)	2014 (Post-AVI)
	Property 1	Property 1
Tax rate	0.09771	0.0134
Predetermined ratio	32%	100%
Assessed market value	\$100,000	\$100,000
Property tax	\$3,127 ( $\$100,000 \times 0.32 \times 0.09771$ )	\$1,340 ( $\$100,000 \times 0.0134$ )
Percent change from 2013		-57%



# An Illustration



	2013 (Pre-AVI)	2014 (Post-AVI)	
	Property 1&2	Property 1 (gentrifying)	Property 2 (nongentrifying)
Tax rate	0.09771	0.0134	0.0134
Predetermined ratio	32%	100%	100%
Assessed market value	\$100,000	\$500,000	\$300,000
Property tax	\$3,127 (\$100,000 × 0.32 × 0.09771)	\$6,700 (\$500,000 × 0.0134)	\$4,020 (\$300,000 × 0.0134)
Percent change from 2013		114%	29%



## An Illustration: Homestead

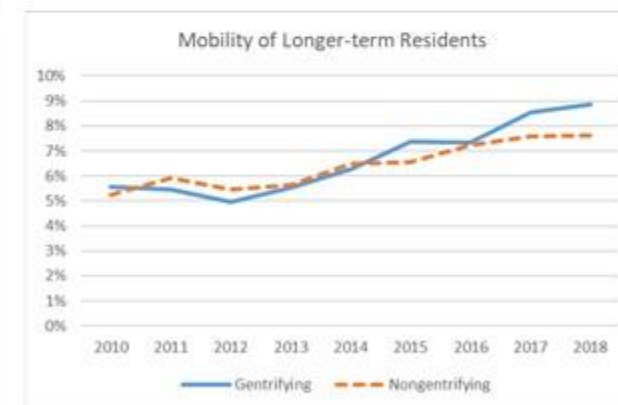
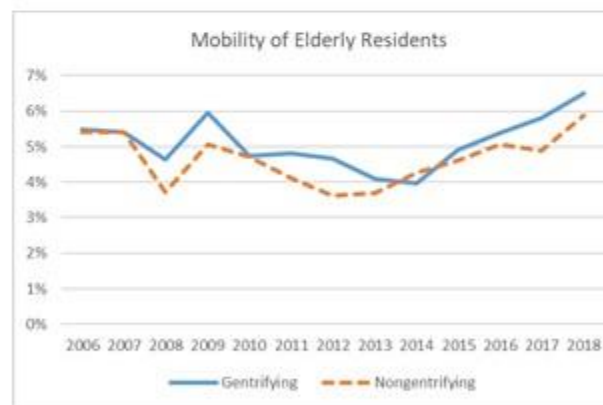
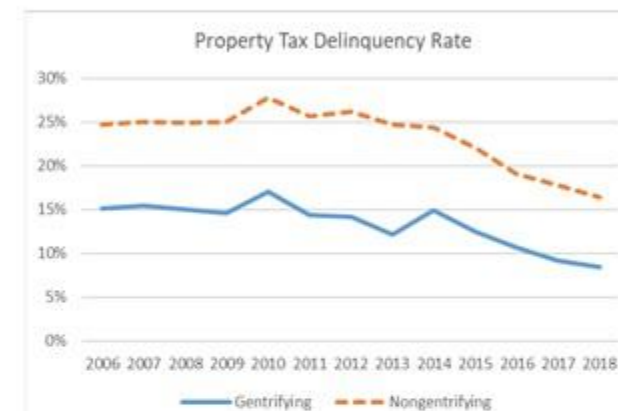
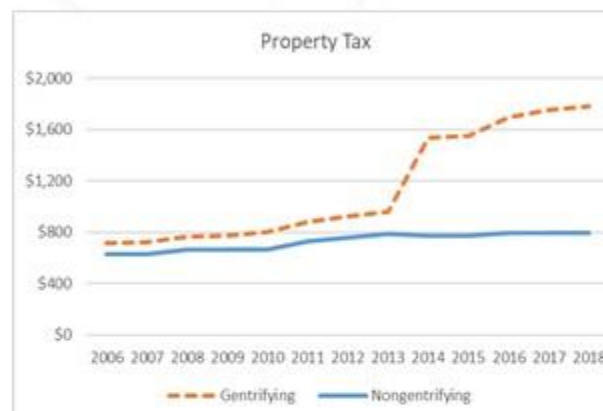
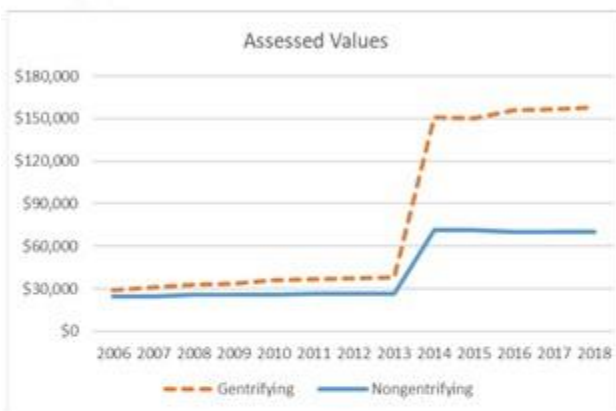
	2013 (Pre-AVI)	2014 (Post-AVI)	
	Property 1&2	Property 1 (gentrifying)	Property 2 (nongentrifying)
Tax rate	0.09771	0.0134	0.0134
Predetermined ratio	32%	100%	100%
Assessed market value	\$100,000	\$500,000	\$300,000
Homestead exemption		\$30,000	\$30,000
Property tax	\$3,127 ( $\$100,000 \times 0.32 \times 0.09771$ )	\$6,298 ( $(\$500,000 - \$30,000) \times 0.0134$ )	\$3,618 ( $(\$300,000 - \$30,000) \times 0.0134$ )
Tax saving		\$402	\$402
Percent change from 2013		101%	16%

# An Illustration: LOOP



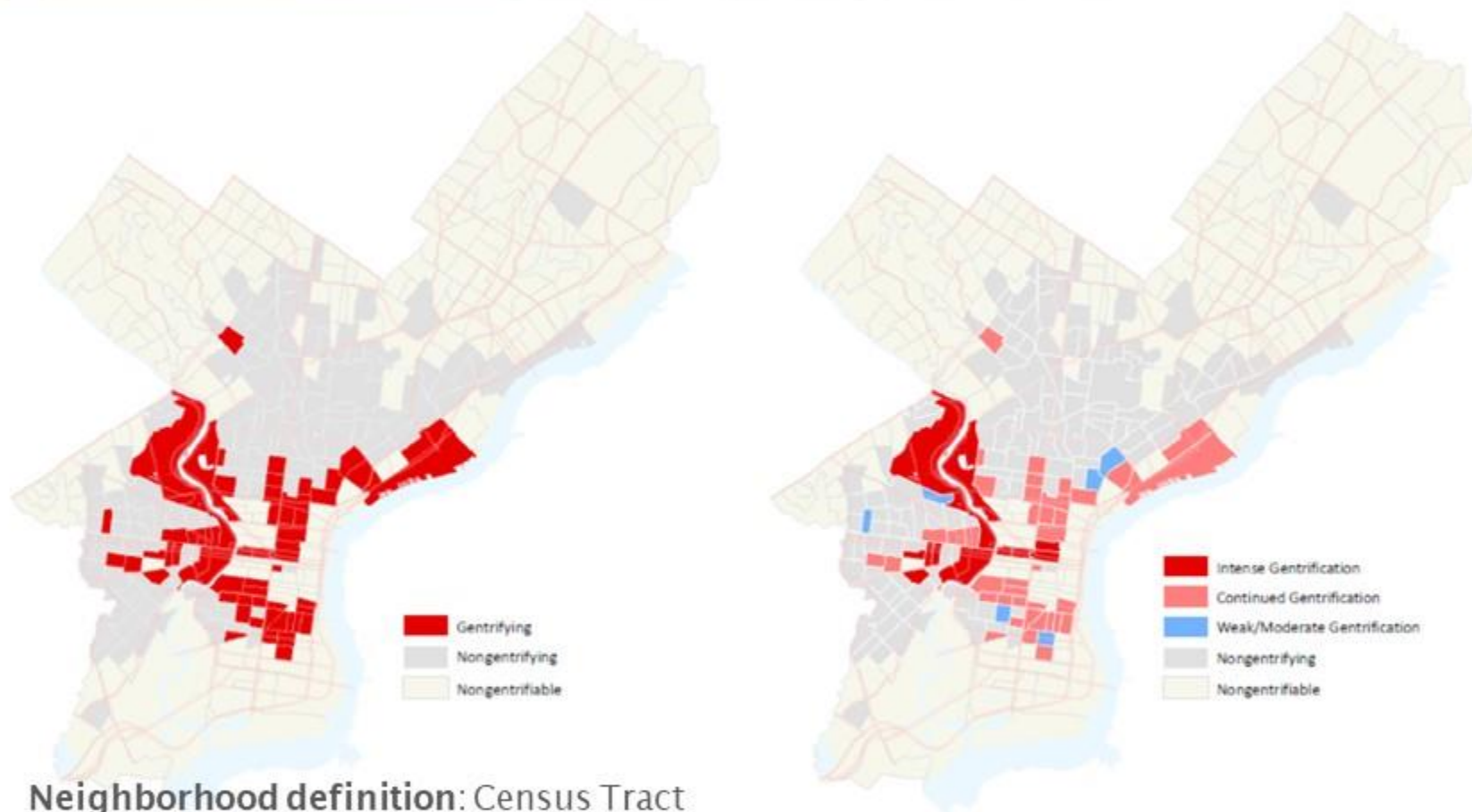
	2013 (Pre-AVI)	2014 (Post-AVI)	
	Property 1&2	Property 1 (gentrifying)	Property 2 (nongentrifying)
Tax rate	0.09771	0.0134	0.0134
Predetermined ratio	32%	100%	100%
Assessed market value	\$100,000	\$500,000	\$300,000
Capped assessed value (with LOOP)		\$300,000 (300% of the assessed value in 2013)	\$300,000 (300% of the assessed value in 2013)
Property tax	\$3,127 ( $\$100,000 \times 0.32 \times 0.09771$ )	\$4,020 ( $\$300,000 \times 0.0134$ )	\$4,020 ( $\$300,000 \times 0.0134$ )
Tax saving		\$2,680	0
Percent change from 2013		29%	29%

# Changes in Major Outcomes over Time





# Data: Gentrification Measure



**Neighborhood definition:** Census Tract

**Gentrifiable:** Initial income was below the *citywide* median in 2000.

**Gentrifying:** Percent change in rent or home value during 2000–2013 is above median increase among city tracts AND Percent change in college-educated residents is above median increase



## Tax assessment and tax delinquencies

- Philadelphia Dept. of Revenue (DOR)
  - Property-level tax assessment and tax amount (2010-2018)
  - Tax payment behavior (2010-2018)
  - No information on race/ethnicity, income, age
- CoreLogic Real Estate Data
  - Property characteristics
  - Census tract location of property
  - Deed transactions

## Residential mobility

- Federal Reserve Bank of New York/Equifax Consumer Credit Panel (CCP)
  - Anonymized 5 percent, nationally representative random sample of individuals in the U.S. with an SSN and a credit report
  - Reports the updated census geography each quarter for the same individuals over time
  - Reports individuals' credit use, updated risk score (credit score), mortgage, age
  - Does NOT include information on race/ethnicity, income, tenure



# Gentrification's Effects on Property Assessments and Tax Amounts



	Coefficient	Standard Error
<b>Assessed value (\$)</b>		
Gentrification dummy	71,673.0***	334.1
Categorical gentrification variables		
Weak/moderate	43,957.4***	375.9
Intense	175,921.1***	1,510.0
Continued	109,081.1***	454.9
<b>Tax amount (\$)</b>		
Gentrification dummy	539.6***	4.4
Categorical gentrification variables		
Weak/moderate	360.6***	5.2
Intense	1,044.6***	20.8
Continued	793.9***	6.3

Notes: \*\*\*, \*\*, \* represent significance at the 0.001, 0.01, or 0.05 level respectively; †p<.10. Sources: Authors' calculations using data on property assessments and tax payment history from the Department of Revenue of the City of Philadelphia and CoreLogic Solutions.



# Gentrification's Effect on Tax Delinquency

	Coefficient	Standard Error
<b>Tax delinquencies</b>		
Gentrifying	0.041***	0.002
Categorical gentrification variables		
Weak/moderate	0.042***	0.002
Intense	0.061***	0.009
Continued	0.038***	0.003
<b>New delinquencies</b>		
Gentrifying	0.009***	0.001
Categorical gentrification variables		
Weak/moderate	0.008***	0.001
Intense	0.016***	0.005
Continued	0.010***	0.001

Notes: \*\*\*, \*\*, \* represent significance at the 0.001, 0.01, or 0.05 level respectively; †p<.10. Sources: Authors' calculations using data on property assessment and tax payment history from Revenue Department of the city of Philadelphia and CoreLogic Solutions.

# Effect on Mobility of Elderly and Long-term Homeowners



	Coefficient	Standard Error
<b>Residential mobility</b>		
Elderly residents (ages 55–84)	-0.004	0.005
Elderly homeowners (ages 55–84)	-0.010	0.013
Longer-term residents (5+ years)	0.006	0.004
Longer-term homeowners (5+ years)	0.013	0.010

Notes: \*\*\*, \*\*, \* represent significance at the 0.001, 0.01, or 0.05 level respectively; †p<.10. Sources: Authors' calculations using data on property assessments and tax payment history from the Department of Revenue of the City of Philadelphia and CoreLogic Solutions, and data from the FRBNY/Equifax Consumer Credit Panel.

# Why No Significant Increase in Mobility of Vulnerable Population?



## Appeals for reassessments

- Homeowners in gentrifying neighborhoods may stop paying the full amount of property taxes while filing appeals for reassessments; not necessarily liquidity constraints.
- Our evaluation suggests the delinquency rates were somewhat inflated by appeals; but unable to determine the extent of their contribution to the observed delinquency rates.

Fewer transactions (and resulting moves) due to increased property taxes

# Why No Significant Increase in Mobility of Vulnerable Population?



- Adoption of gentrification-relief programs
  - The more well-targeted LOOP program is more effective in reducing tax delinquencies in gentrifying neighborhoods

	Likely LOOP Exemption		Homestead Exemption	
	Coefficient	Standard Error	Coefficient	Standard Error
Assessment (\$)	4,874.0***	1,094.9	-3,214.6***	675.0
Tax amount (\$)	-462.0***	14.6	258.6***	8.8
Tax delinquencies	-0.021***	0.006	0.040***	0.004
New tax delinquencies	-0.008**	0.003	0.006***	0.002

Notes: \*\*\*, \*\*, and \* represent significance at the 0.001, 0.01, and 0.05 level, respectively. Sources: Authors' calculations using data on property assessments and tax payment history from the Department of Revenue of the City of Philadelphia and CoreLogic Solutions.



# Robustness Check



- Results are robust using
  - A shorter (2 years) post-treatment period
  - Alternative gentrification measures (Freeman, 2005; Ellen and O'Regan, 2011)
  - Different control groups (all nongentrifying neighborhoods)
  - Neighborhood (tract) as unit of analysis

# Summary and Discussion



- Gentrification increases property values, property taxes, and the delinquency risk on property tax bills
  - Larger increase in intensely gentrifying neighborhoods
  - Somewhat inflated by nonpayment during appeals for reassessment
- No sign of higher-level of departure of elderly or financially disadvantaged homeowners in gentrifying neighborhoods
  - Property tax relief programs were offered to mitigate effects of sudden & sharp rise in property taxes on vulnerable households
  - Historical lack of strong enforcement of tax foreclosure
  - Gentrification not necessarily leads to displacement?

# Summary and Discussion



- Tax abatement/exemption programs mitigate the delinquency risk of homeowners
  - Well-targeted tax relief programs, like LOOP, are more effective in lowering delinquency risk and displacement of homeowners
- Homestead exemption results are mixed
  - Relatively smaller relief for homeowners in gentrifying tracts
- Longer-term effects on tax foreclosure, displacement and housing market still need to be monitored



# Thanks!

The working paper can be downloaded at:  
<https://doi.org/10.21799/frbp.wp.2020.16>





# *Data Talk* How Changes in Property Taxes Shape Communities: Two Case Studies

#LiveAtUrban





*First American*

# Gentrification, Split Roll Taxes and The Dodger?

August, 2020

First American Financial Corporation makes no express or implied warranty respecting the information presented and assumes no responsibility for errors or omissions. First American Financial Corporation is a parent holding company that does business through its operating subsidiaries. First American and the eagle logo are registered trademarks or trademarks of First American Financial Corporation and/or its affiliates.

The following presentation is for informational purposes only and is not and may not be construed as legal advice. First American Financial Corporation is not a law firm and does not offer legal services of any kind. No third party entity may rely upon anything contained herein when making legal and/or other determinations regarding title practices. You should consult with an attorney prior to embarking upon any specific course of action.

©2015 First American Financial Corporation and/or its affiliates. All rights reserved. ▼ NYSE: FAF



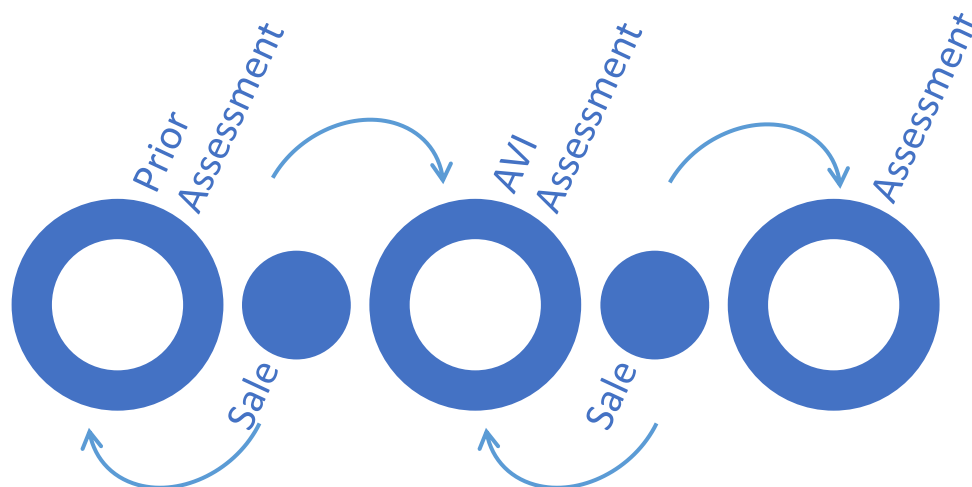
#FirstAmEcon



@mflemingecon

## Effects of Gentrification on Homeowners: Evidence from an Natural Experiment- Lei Deng and Jackelyn Hwang

- **Using an Exogenous Shock-** Philadelphia's property tax overhaul in 2013 (Actual Value Initiative or AVI) provides a great opportunity to test two key aspects of gentrification: the housing wealth effect caused by gentrification and the liquidity constraint effect.
- **Testing Policies-** Because of the concern that the liquidity constraint effect could impact existing homeowners and force involuntary sales, the tax overhaul included programs (LOOP) to mitigate the risk. The effectiveness is also "testable."
- **Identifying the Owner Occupier-** It's important to understand that the owner occupier identification process is "backward looking". At the time of sale the available tax assessment is reflecting the seller's occupying status. In other words, from the public record we know whether the seller was a homeowner or occupier, but we don't know what the intent of the buyer is. That comes with the subsequent tax assessment update.
- **Proxy for renter versus owner-** Understanding the difficulty of understanding occupancy intent is challenging, the existence of a mortgage may not be a good proxy for homeownership. Many landlords rent AND have a mortgage on the rental property.

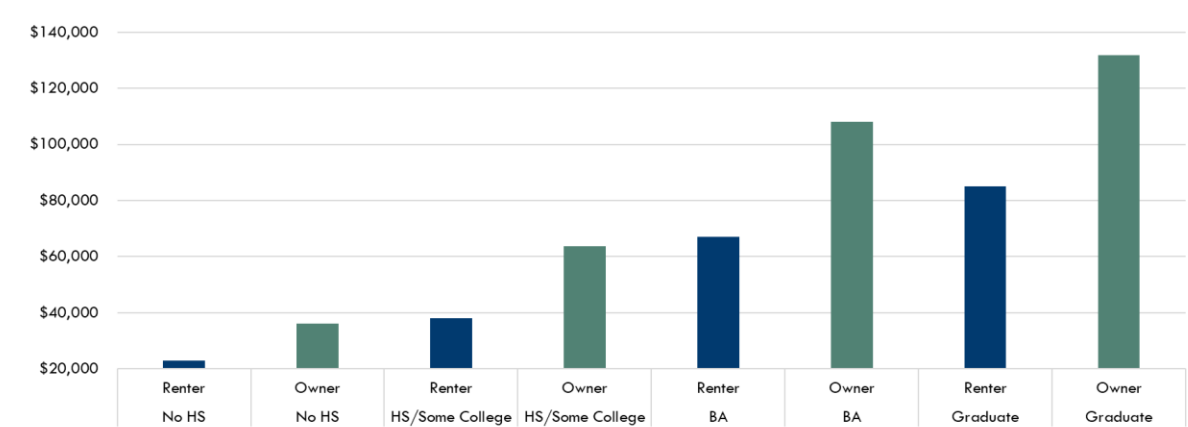


# Effects of Gentrification on Homeowners: Evidence from an Natural Experiment- Lei Deng and Jackelyn Hwang

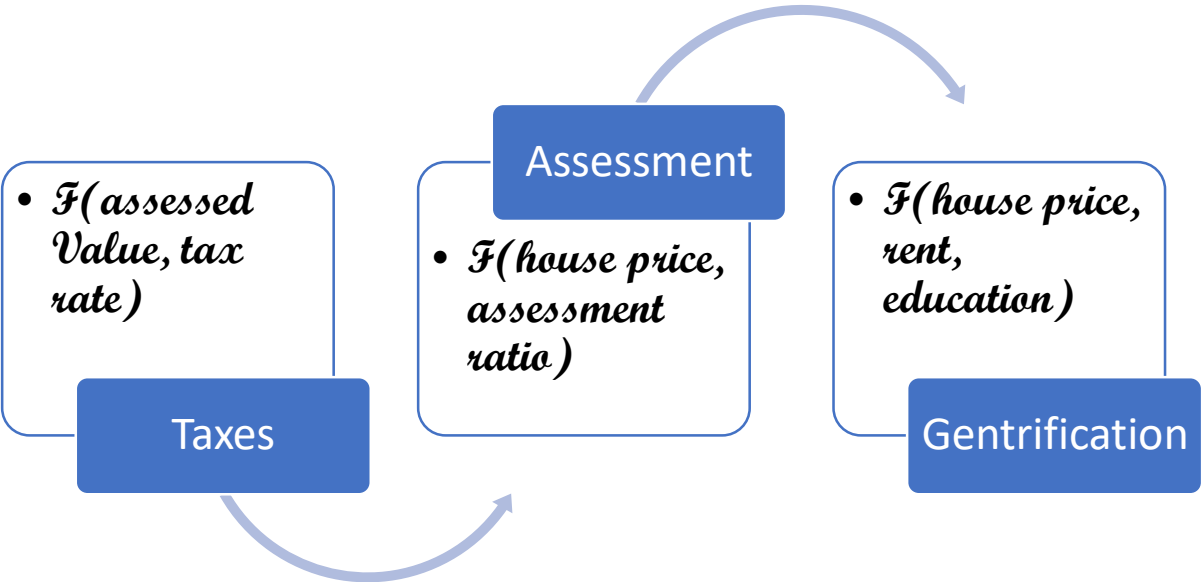
- Gentrification and Education
  - Census tracts are identified as gentrifying if the base period median household income was below the city median AND it subsequently experienced above city-median rent OR home price growth.
  - Additionally, the share of college educated residents has to rise faster than the city-median increase.
  - Income is not used as the argument is that “gentrifiers” tend to be younger and incomes tend to be lower for younger people (true), but these in-migrating gentrifiers are affording to live there, and aren’t they are the ones driving the rents and prices up?
  - Educational attainment is proxy for income
- Gentrification Endogeneity
  - Regressions show that the Gentrification neighborhood effect is strongly and positively correlated with assessed values and taxes.
  - But there is an endogeneity concern.

### Education Pays Off

Median Household Income by Educational Attainment and Tenure Choice in 2019

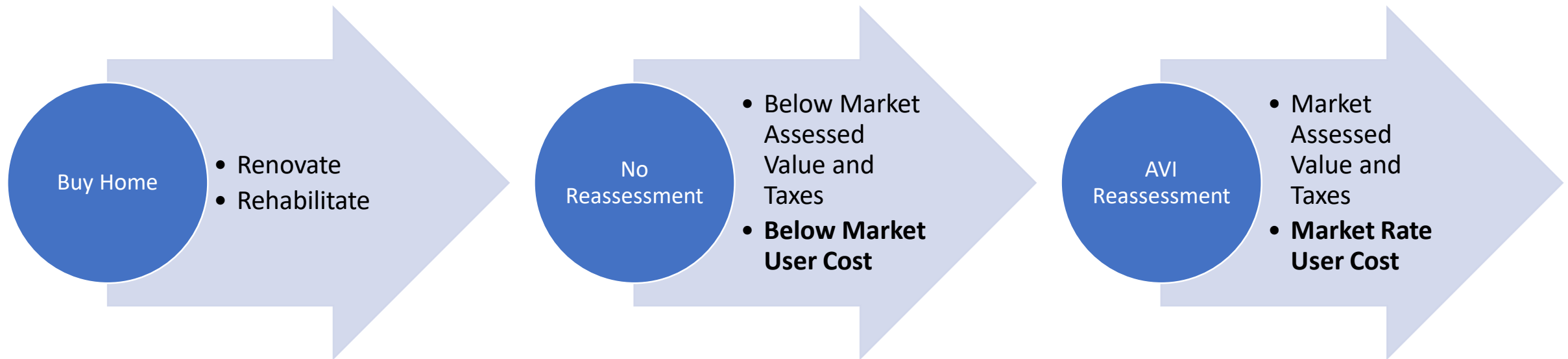


Source: First American Calculations, IPUMS CPS, 2019



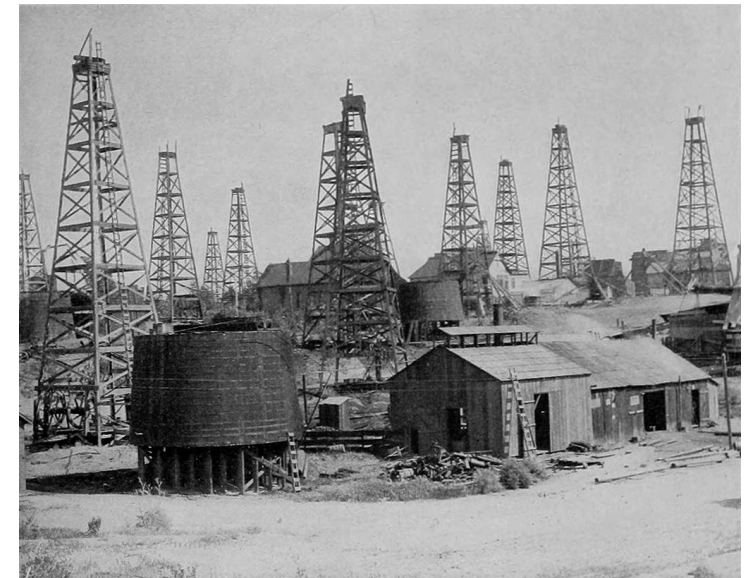
## Effects of Gentrification on Homeowners: Evidence from an Natural Experiment- Lei Deng and Jackelyn Hwang

- Tax Dodging Gentrification
  - The authors find that “the sharply increased property taxes for properties in gentrifying neighborhoods have suppressed... demand...” and find a reduction in the volume of transactions.
  - They also note that there was an increase in the volume prior to the tax increase.
  - In English- Gentrifiers are tax dodgers!
  - Prior to AVI the user cost of buying and renovating (new construction forces a reassessment) would be below market value because the home continues to be assessed and taxed based on it's original value.
  - Post AVI the user cost benefit is gone and the home is effectively more “expensive”. Or more correctly, prior to AVI the tax structure was incenting gentrification by under-taxing and reducing the user cost.



# Housing and Land Use Implications of Proposed Split Roll Tax Reform- Sarah Strochak

- An exercise in the struggle with public records data! Sarah should be commended for all of the data preparation that went into this research. Land use and zoning data is notoriously inconsistent and zoning codes in particular are very unstandardized.
- But first I had to take a history lesson
  - The first zoning ordinance? 1908 in Los Angeles. Clearly separating districts of residential and industrial use.
  - Dangerous businesses and odorous land uses (slaughterhouses and tanneries) banned from residential areas.
  - Prohibition of laundries (dominantly owned by Chinese residents and citizens)
- Race based zoning ordinances were passed in multiple cities in the nineteen-teens. Although struck down by the courts, the reality took time to catch up with the law.
- What's Euclidian zoning? Characterized by the segregation of land uses into specified districts- residential single and multifamily, commercial and industrial. This typifies the zoning in most cities in the 20<sup>th</sup> century.
- But this limits the ability to “mix uses” which is becoming more popular with “Hierarchical” Euclidian zoning or Smart Zoning.
- Name one city with no formal zoning regulation? Houston!





## Housing and Land Use Implications of Proposed Split Roll Tax Reform- Sarah Strochak

- Split Roll Reform
  - Assess Commercial and Industrial properties based on market value
  - Redistribute tax revenues between local government and schools
- Zoned Use is not the same as Land Use
  - In fact, with hierarchical zoning the allowable uses are “backwards intensity” compatible.
  - Therefore, just because the zoning says you can, it doesn’t mean the market will.
- Hence Sarah’s study of the incentives
  - **At Risk Properties**- those that could be “up-zoned” from residential to commercial with the hope of commercial use and higher tax revenue.
  - **Opportunity Parcels**- Revert underutilized commercial parcels to residential (most likely multifamily) to avoid higher taxes.
- Findings (in English)
  - The Opportunity Value is MANY MANY times more beneficial than the At Risk benefit.
  - Are we to conclude that Tax Dodging the Split Roll will rule the day?
  - And what do we get from that? More housing units you say?!



# Keeping Up With Increasing Demand- The Big Building Short

New Housing Units and Households (Year-Over-Year, Millions)



Source: Census Bureau, HUD (obsolescence rate of 0.31% of existing stock), 2018



**The Almanac Singers  
State Of Arkansas**

The background of the slide is a photograph of city buildings. On the left is a modern building with a glass and steel facade. To its right is a multi-story brick building with several fire escapes attached to its exterior. The sky is a clear, pale blue.

# *Data Talk* How Changes in Property Taxes Shape Communities: Two Case Studies

#LiveAtUrban





# *Data Talk* How Changes in Property Taxes Shape Communities: Two Case Studies

#LiveAtUrban