Assessing Assessors

2025 Brookings Municipal Finance Conference

July 22nd, 2025

Huaizhi Chen, University of Texas at Dallas

Lauren Cohen, Harvard Business School

Market Summary > Apple Inc

212.48 USD

Following

+1.30 (0.62%) ↑ today

Closed: Jul 21, 7:59 PM EDT • Disclaimer

After hours 212.67 +0.19 (0.089%)

1D | 5D | 1M | 6M | YTD | 1Y | 5Y | Max

Open	212.10	Mkt cap	3.17T	52-wk high	260.09
High	215.78	P/E ratio	33.16	52-wk low	169.21
Low	211.63	Div yield	0.49%	Qtrly Div Amt	0.26

1247 N Notre Dame Ave

Illiquid assets such as real estate are very difficult to value.

Survey of faculty and students indicate that a same property could have large ranges from $600,000 to $2,000,000 as an estimated price.

Last sold in 2018 for $271,200.

Zillow gives $1.2M valuation with $1.01M to $1.41M as the estimated range.

However, these valuations are extremely important for multitude of purposes, and in this study, public finance.

Local General Revenue

Outside of federal and state transfers, property taxes are the largest source of revenue for local governments.

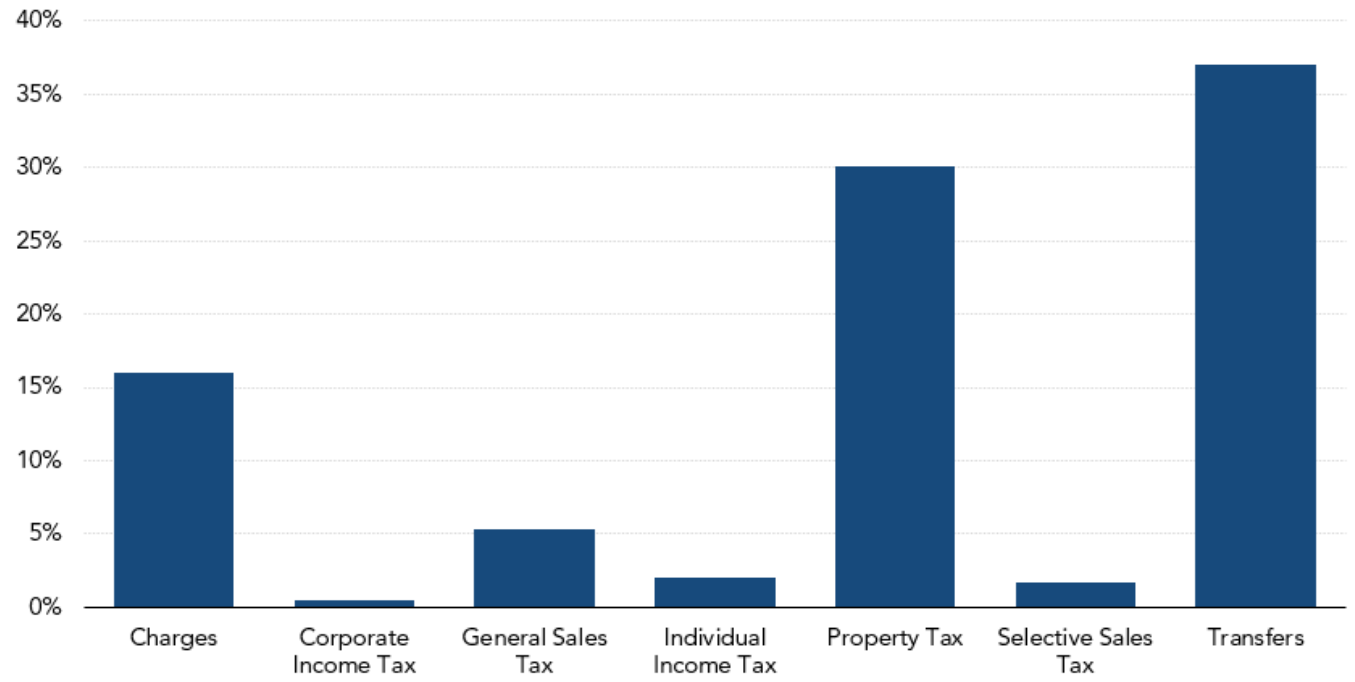
These annual taxes are collected in proportion to individual property values - scaling to a taxpayer's price of real estate asset.

There are over 3,000 counties operating in the US, each with its own method of valuing properties and rates for tax collections.

FIGURE 3

Sources of Local General Revenue

Share of total local general revenues, by source, 2021



Source: US Census Bureau Annual Survey of State and Local Government Finances, 1977-2021 (compiled by the Urban Institute via State and Local Finance Data: Exploring the Census of Governments; accessed 14-Jul-2023 10:05), https://state-local-finance-data.taxpolicycenter.org.

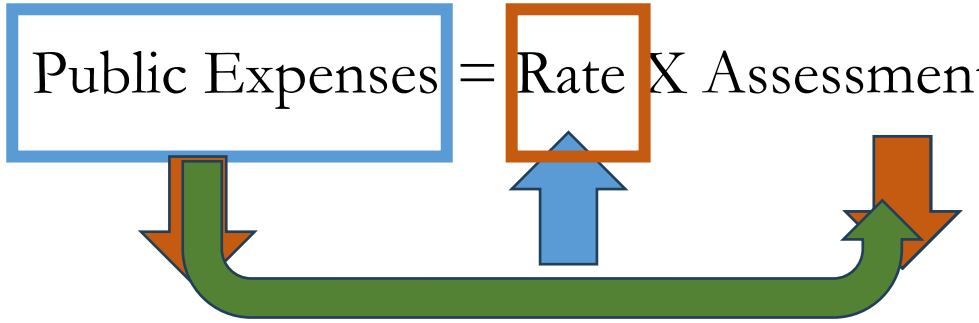
Political Economy of Public Offices and Real Estate

In the public sector, property tax revenues are determined by the combination of tax rates and property value:

Tax Revenue = Rate X Assessment Value

Tax Revenue = Public Expenses

Public Expenses = Rate X Assessment Value



How does public budgeting affect assessment values?

Steve J. Bestolarides
Assessor/Recorder/County Clerk

Office of the Assessor

The Office of the Assessor is dedicated to preparing fair and equitable assessments to all taxable property in San Joaquin County. The County Assessor has a constitutional responsibility to determine the value of and assess all taxable property in the County. That assessment is used to compute the annual property tax bill. The 2024-2025 property tax assessment roll grew to $116.1 billion; over $1 billion in property tax dollars that support education, public safety and local services.

Mission statement from San Joaquin County

Results

1) We document property revenue smoothing across the timeseries and cross-section of local governments. Boom and bust of the real estate market in the 2000s are mostly absent in the time series of aggregate tax revenue.

2) Proxies of market returns having difficult time explaining changes in assessment values. This smoothing of assessment values insulate tax rates from having to adjust to changes in markets value.
   - A 1% increase in market value reflect 0.1% increase in assessment values, leading to no more than 0.1% decrease in tax rates.

3) Relating valuation to public finance, counties with budgetary deficits tend to have the highest level of overassessments when computed against sales-transaction values.

Results

4) Using quasi-experimental evidence from referendums in Illinois, we show that passing a referendum leads to increases in property assessment values without increasing the median transaction values.

5) Passing a referendum leads to a 23% of the mean likelihood that assessment values will increase, and a marginal decline in the median home transaction price.

6) Collecting data on assessors, we demonstrate the extent of assessment flexibility by showing that assessors households tend to have lower assessment value growth than comparable homes.

7) We show there is a positive correlation between budgetary smoothing and an assessor's own home's undervaluation.

Data

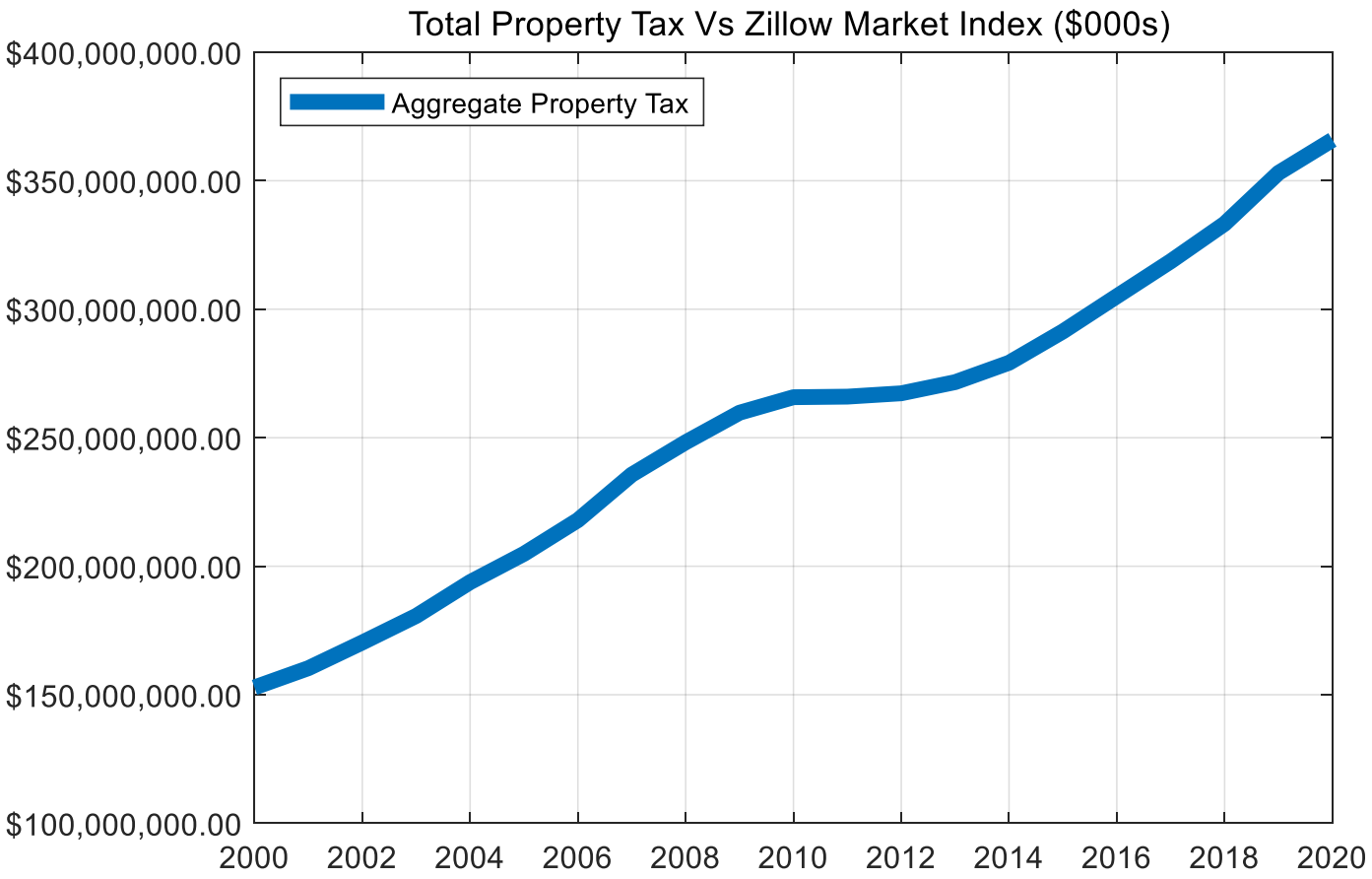
Zillow (ZTrax) Property Tax Value and Transaction Histories

Census Government Unit Level Spending and Revenues

Hand Collected Referendums From Illinois from 2006 to 2015.

Hand Collected Assessor Names and Identity Histories

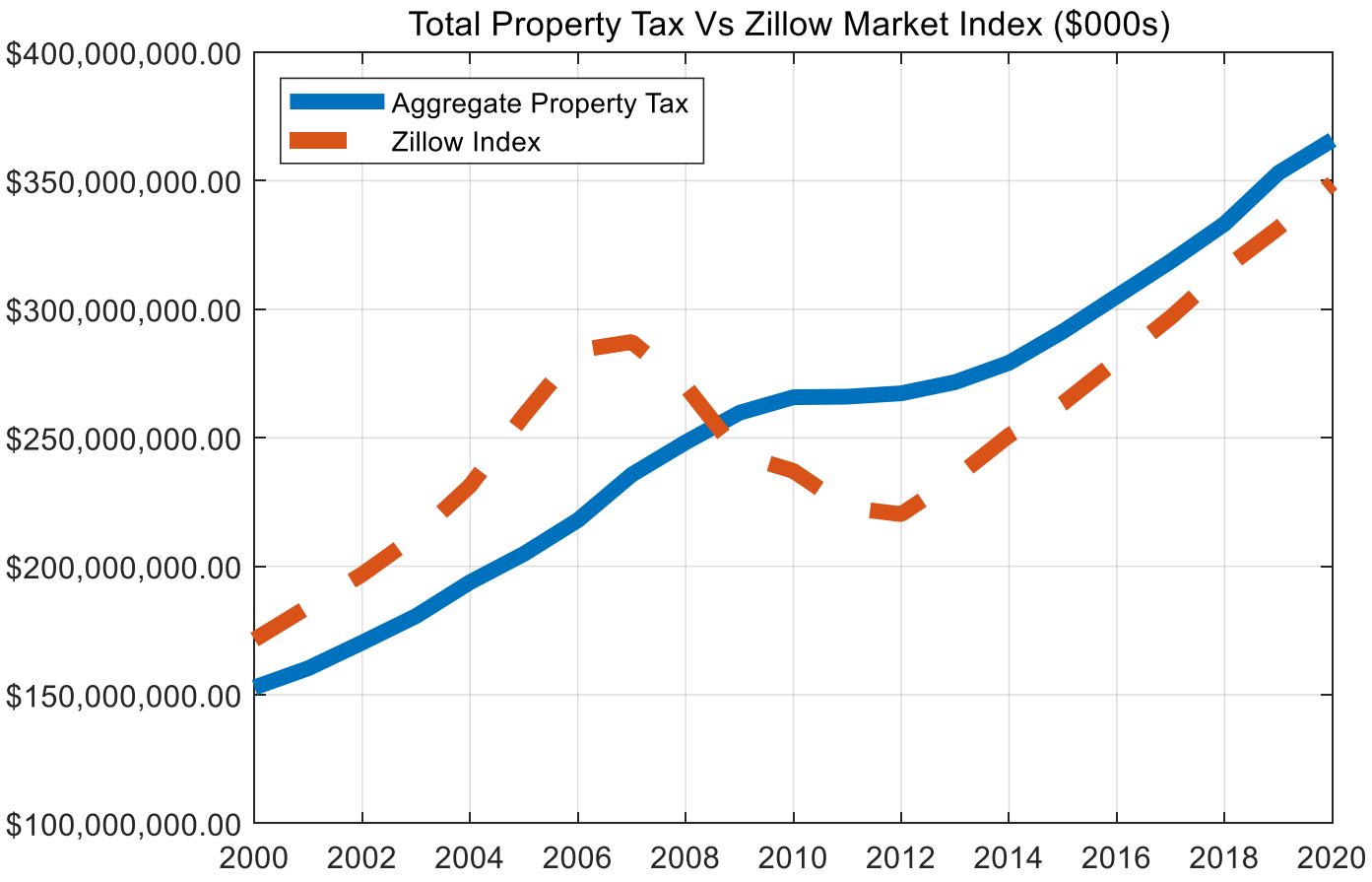
Matching LexisNexis SmartLink Person Searches



This is the total tax collected by the balanced panel of local US governments by census fiscal year. (Census Data)

Domestically, property taxes constitute the largest discretionary source of revenue for local governments.

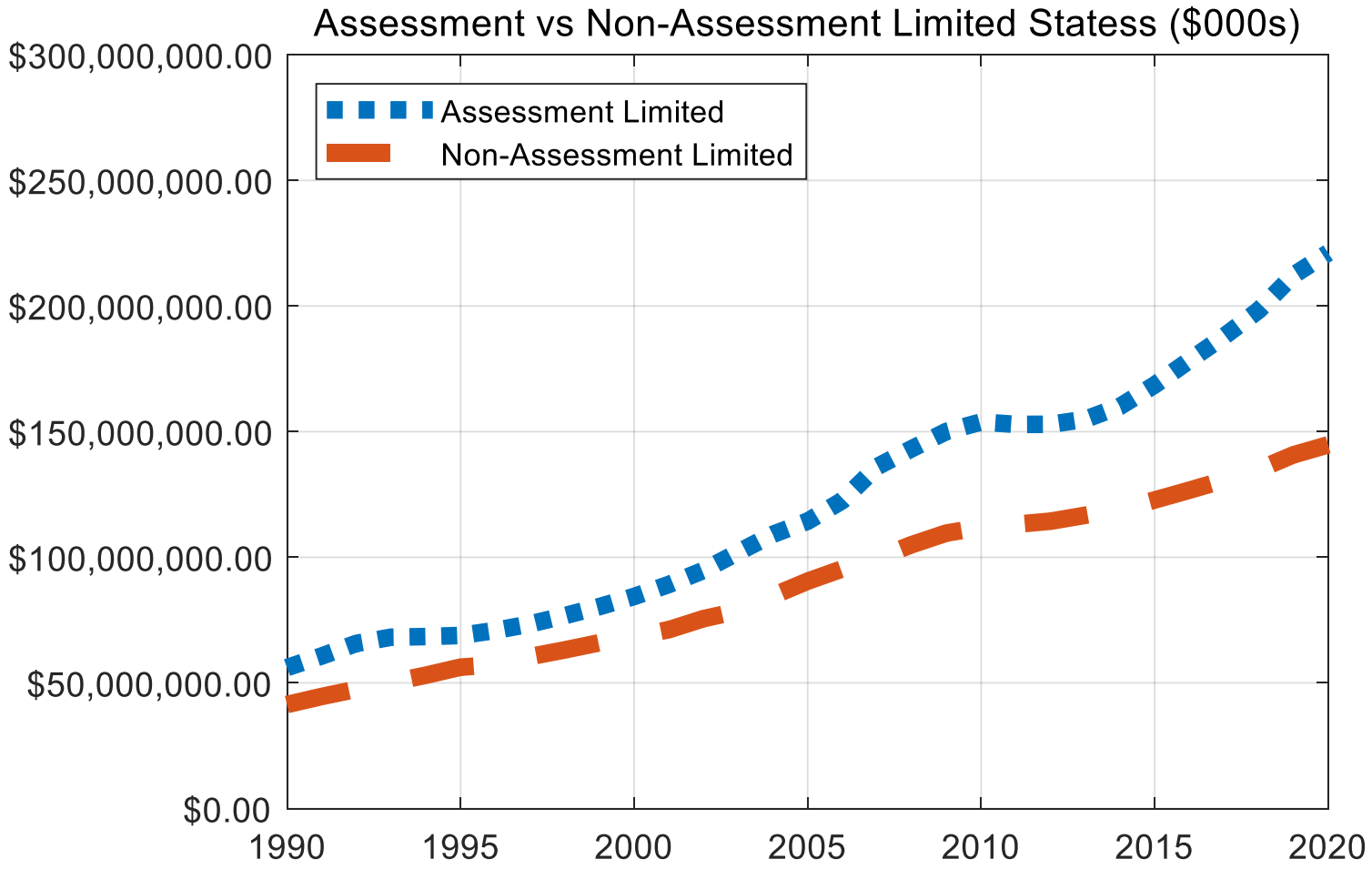
Property tax revenue in the US has been especially smooth over the past 20 years.



Property taxes generally do not reflect real estate prices.

Local governments sustained a smooth growth of property tax revenues, despite claims and mandates of fair market valuation.

The hill and valley pattern exist across almost every popular real estate index.

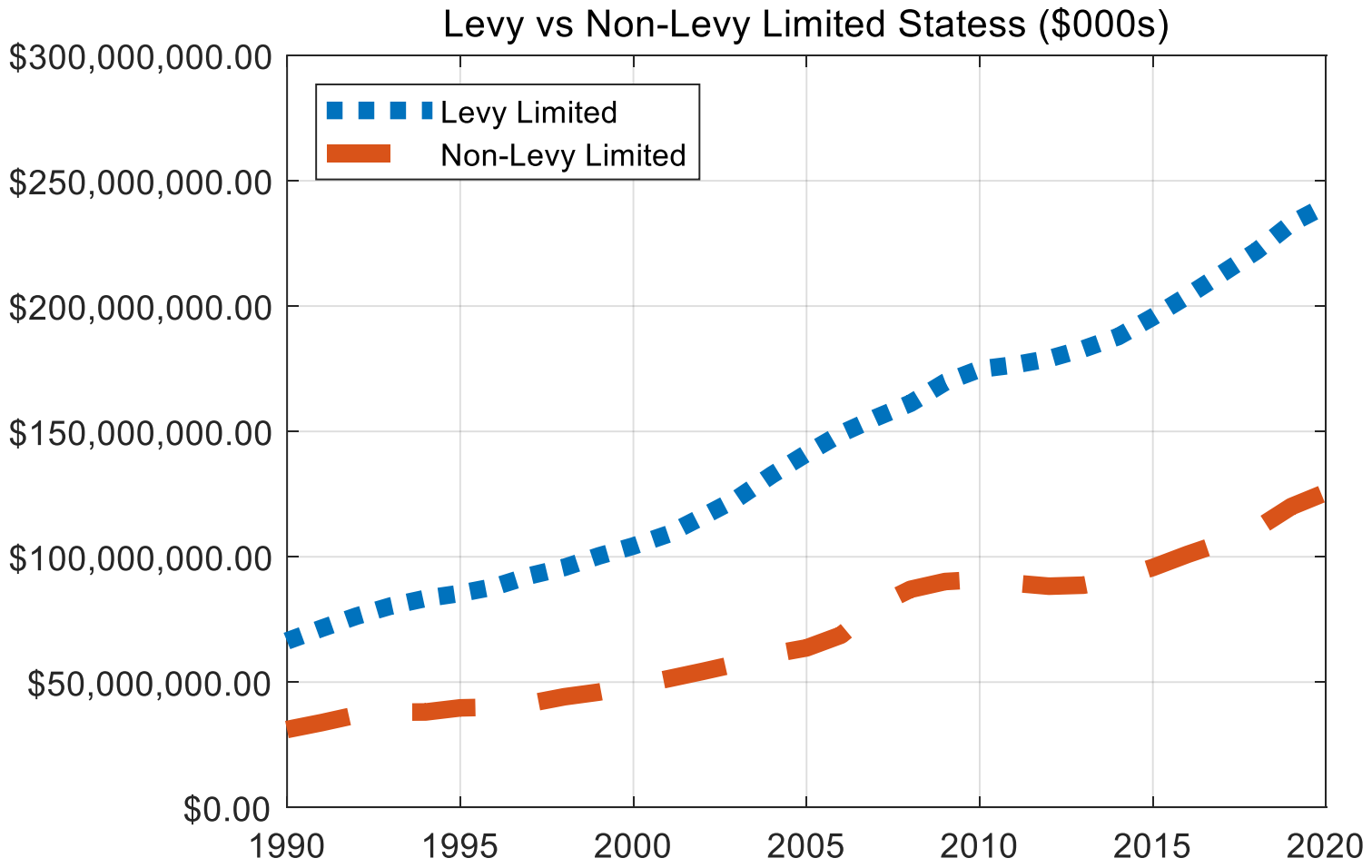


There are caveats to "fair market value" pricing.

The smoothness in property tax revenue is not explained by assessment caps or levy limits.

One caveat is that certain states limit the degree to which assessment values can increase.

Ex. 2% Prop 13 in California.



The smoothness in property tax revenue is not explained by assessment caps or levy limits.

There are caveats to "fair market value" pricing.

Another caveat is that other states limit the degree to which total tax revenues can be collected.

Illinois PTELL limits property tax growth to the greater of 5% or CPI inflation rate for certain counties.

Assessment Values Do Not Fully Reflect Market Returns

	(1)	(2)	(3)	(4)	(5)	(6)
	Value Weighted Average Growth in Assessment Value$_t$					
Market Return$_t$	0.0483***			0.0321***	0.0329***	0.0378***
	(6.341)			(4.036)	(4.042)	(4.482)
Market Return$_{t-1}$		0.121***		0.122***	0.0737***	0.0718***
		(12.69)		(14.09)	(8.117)	(7.471)
Market Return$_{t-2}$			0.142***	0.139***	0.0600***	0.0530***
			(14.77)	(16.60)	(7.565)	(6.416)
Year FE	No	No	No	No	Yes	Yes
County FE	No	No	No	No	No	Yes
Observations	8,221	7,528	6,819	6,813	6,813	6,679
Adj. R^2	0.005	0.033	0.045	0.080	0.175	0.243

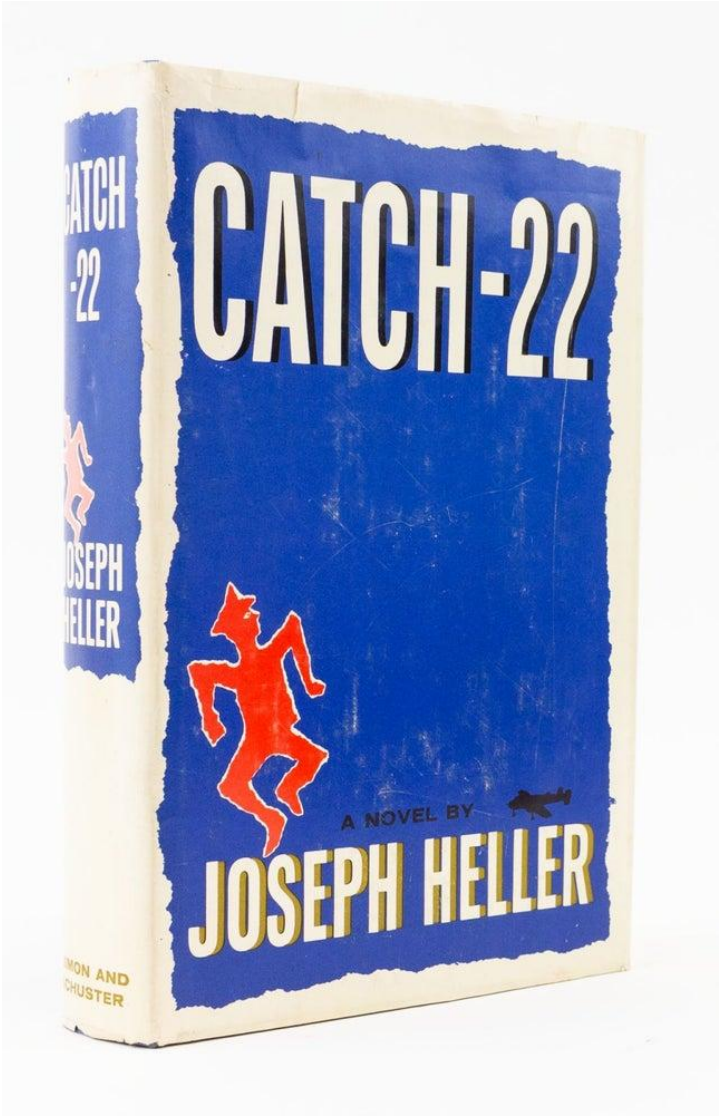
The *left-hand side variable* is the value weighted growth in a county's assessment values.

We proxy market returns using Zillow ZTrax Index.

Despite mechanical correlation, in the construction of the Ztrax Index, market returns explain no more than 10% of the variation in assessment growths.

The best explanation of changes in assessment values are year and county level fixed effects.

Public Expenses = Rate X Assessment Value



"There is no set rate for property tax in Illinois. Your tax bill is based on two factors, the equalized assessed value (EAV) of your property, and the amount of money your local taxing districts need to operate during the coming year."

– Illinois State Government

The extension (mills) rate is limited at 1.84% for school districts with fewer than 500,000 inhabitants. (33% assessment value of fair market value implies 0.61%)

- PTAX-60 from Illinois State Government

The Catch 22 of Public Finance

	(4)	(5)	(6)
	% Change in Tax Rate		
% Market Return (3 Year)	-0.107*** (-4.657)	-0.068*** (-3.246)	-0.084*** (-2.991)
Year FE	No	Yes	Yes
County FE	No	No	Yes
Observations	837	837	837
Adj. R^2	0.190	0.306	0.327

Public Expenses =
Rate X Assessment Value

If public expenses were fixed, then market values should drive changes to rates.

The non-responsiveness of property assessment values to market values insulates tax rates from having to adjust to market returns.

We zoom into Illinois, where millage rates are reported at the county level.

Property Assessment Gaps Can Be Explained by Economic Conditions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	% Diff Between Sale and Assessed Value				*% Sold 10% Below the Assessed Value*			
% Local Government Deficit	-0.996***	-0.953***	-0.418***	-0.311***	0.680***	0.689***	0.101**	0.103***
	(-10.04)	(-9.464)	(-3.564)	(-3.699)	(11.48)	(10.86)	(2.256)	(2.639)
Log Population		0.152*	0.115***	0.197*		0.0828*	-0.0130**	-0.00810
		(1.963)	(3.929)	(1.828)		(1.827)	(-2.283)	(-0.154)
Property Tax as % of Tax Revenue		-1.057***	0.0866	-0.590***		0.645***	0.0160	0.214***
		(-5.340)	(1.126)	(-3.847)		(5.461)	(0.524)	(3.448)
County Fixed Effect	Yes	Yes	No	Yes	Yes	Yes	No	Yes
Year Fixed Effect	No	No	Yes	Yes	No	No	Yes	Yes
Observations	5,582	4,973	5,017	4,973	5,582	4,973	5,017	4,973
Adjusted R-squared	0.418	0.427	0.215	0.573	0.213	0.216	0.551	0.706

The *left-hand side variable* for (1) through (4) is the % difference between the ***sales*** price of properties and the last appraisal value.

For (5) through (8), it is the likelihood that the sales price is at least 10% below the assessment value.

Local Government Deficit is the difference between the total expense and total revenue expressed a percent of the total revenue over the county.

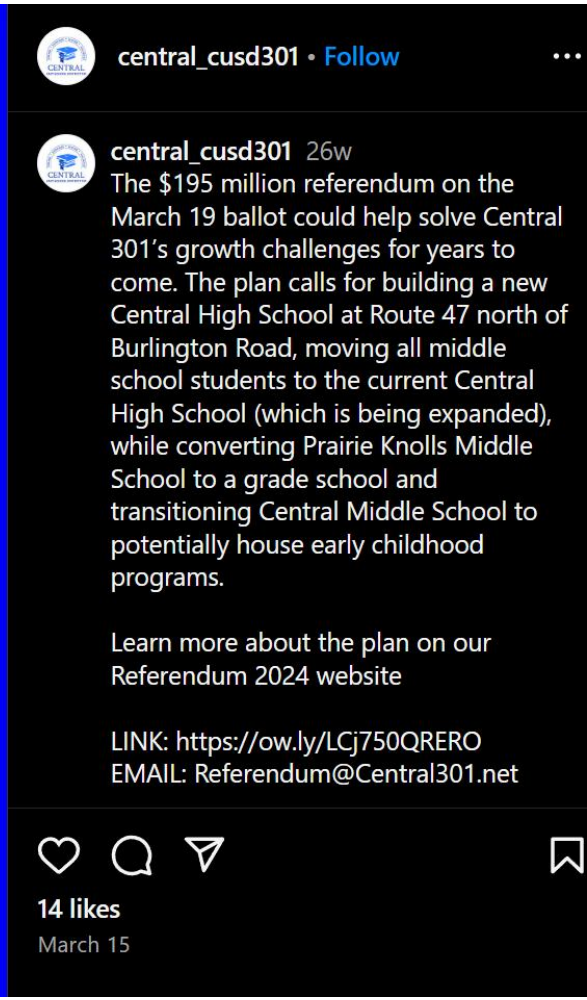
It aggregates County, Municipal, Townships, and School Districts (mainly excluding Special Districts and States).

Generally, the greater the local area's deficits, the greater the difference between sales and assessed values.

Micro-evidence

We collect a comprehensive set of referendums for bond issues from Illinois between 2006 and 2015.

These referendum measures propose the issuances of General Obligation bonds for an immediate dollar amount for infrastructure projects. The bond payments are then backed by the taxing powers of the local district.



Data on Referendums

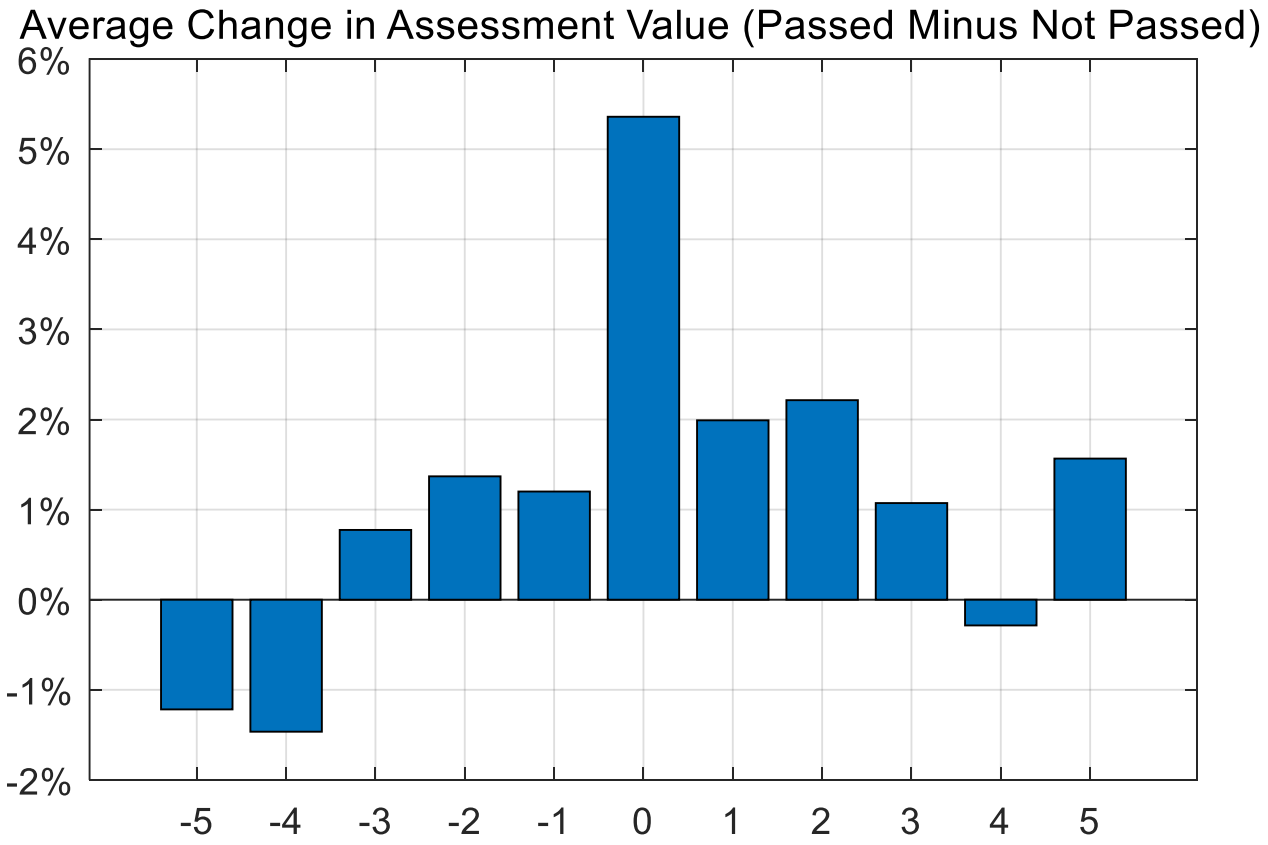
State	County	Area	Year	Month	Passed	DollarAmt	Zip Code
Illinois	DeKalb, Kane	Central CUSD 301	2006		3	1 $ 34,000,000.00	62054
Illinois	St. Clair	Central School District 104	2006		3	1 $ 4,500,000.00	62269
Illinois	Clinton, Jefferson, Marion, Washington	Centralia City Schools District 135	2006		3	0 $ 3,400,000.00	62872
Illinois	Champaign	Champaign CUSD 4	2006		3	0 $ 65,940,000.00	61821
Illinois	Lake	Fox Lake Grade School District 114	2006		3	1 $ 3,750,000.00	60020
Illinois	Lake	Fremont School District 79	2006		3	1 $ 22,000,000.00	60060
Illinois	Tazewell	Tremont CUSD 702	2006		3	1 $ 9,500,000.00	61568
Illinois	Madison	Triad CUSD 2	2006		3	1 $ 44,136,283.00	62294
Illinois	Cook, Kane, Lake, McHenry	Barrington CUSD 220	2006		3	0 $ 107,100,000.00	62054
Illinois	Madison	Edwardsville CUSD 7	2006		3	0 $ 45,800,000.00	62025
Illinois	Cook, DuPage	Elmhurst CUSD 205	2006		3	1 $ 41,000,000.00	60189

	Referendums					
	10th P.	Median	90th P.	Mean	Std.	N
Passed Indicator	0	1	1	0.57	0.50	497
Referendum Year	2006	2008	2014	2009	3	497
Dollar Amount	$400,000	$8,000,000	$54,900,000	$22,500,000	$39,200,000	497

Referendums

We examine the assessment growth of properties in the same zip codes as these school districts.

Both the rate of the growth and the direction of re-assessments indicate positive assessment revisions in the areas affected by these referendums.



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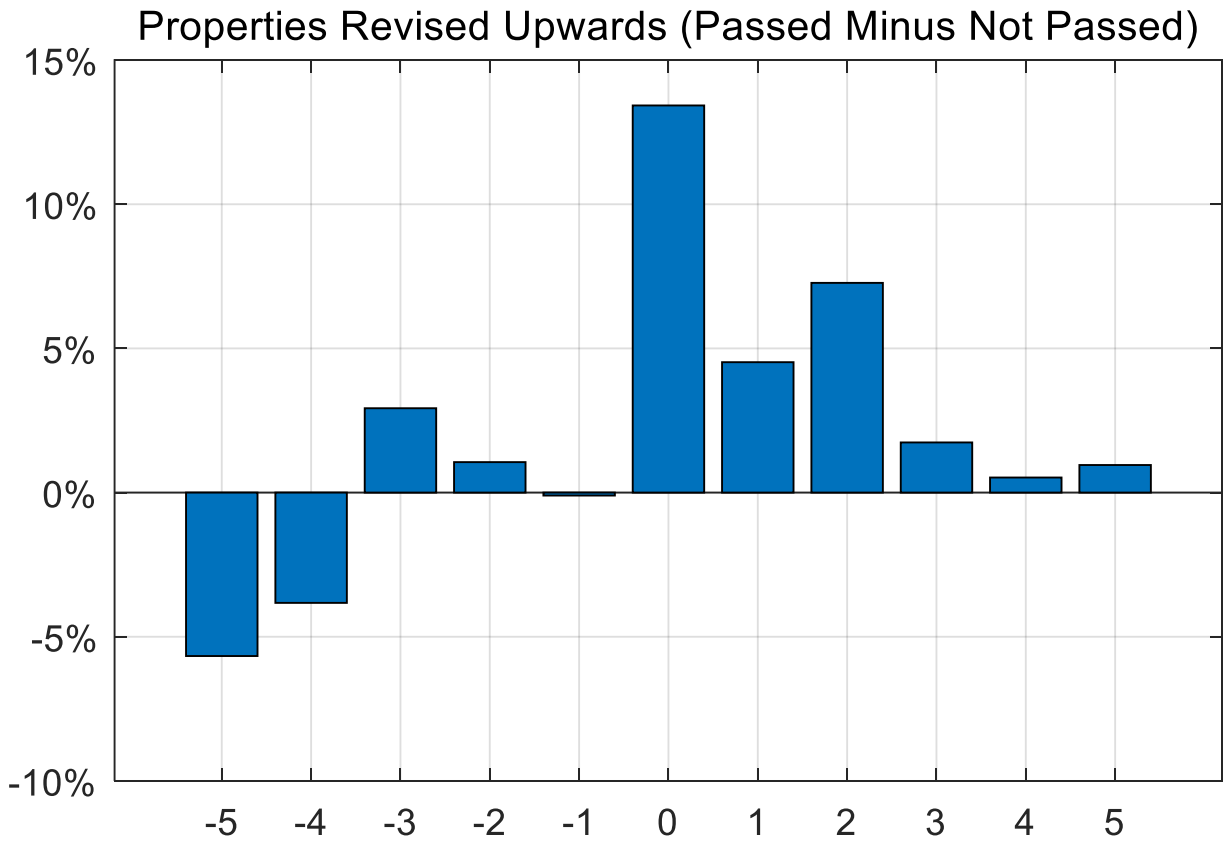


Referendum Regressions

The growth of the assessment value of individual properties are related to the indication and the number of referendums passed in the past 3 years.

	(1)	(2)	(3)	(4)
	% Growth		% Reassessed Upward	
Passed Referendum	1.24**		5.77**	
	(2.510)		(2.312)	
# of Passed Referenda		0.913**		4.46**
		(2.366)		(2.282)
Year FE	Yes	Yes	Yes	Yes
Observations	5,522,044	5,522,044	5,522,044	5,522,044
Adjusted R-squared	0.177	0.177	0.328	0.327

Unconditional likelihood of increase is 34%.

Referendum Regressions

We also examine change in the median residential home transaction prices within the same zip codes as the left-hand side variable, with multiple lags.

If anything, passing a referendum, for Illinois, marginally lowers transaction prices.

At Arm's Length Transactions.

	(1)	(2)
	% Price Return	
Passed Referendum	-0.604	
	(-0.431)	
# of Passed Referenda		-0.511
		(-0.434)
Year FE	Yes	Yes
Observations	578	578
Adjusted R-squared	0.042	0.042

Referendum Regressions

There's also marginal to no change in the volume of transactions in zip codes affected by these referendums.

If anything, these referendums might marginally lower the demand for residential properties in Illinois.

At Arm's Length Transactions.

	(3)	(4)
	% Change in Transactions	
Passed Referendum	-4.79*	
	(-1.879)	
# of Passed Referenda		-4.38**
		(-2.188)
Year FE	Yes	Yes
Observations	578	578
Adjusted R-squared	0.333	0.333

Subsequent Sales Gap

In terms of sale price, at arms length transactions after a passing referendum experience larger gaps, as well as a higher likelihood of a gap, between the sale and assessed values in the 3 after a passing referendum.

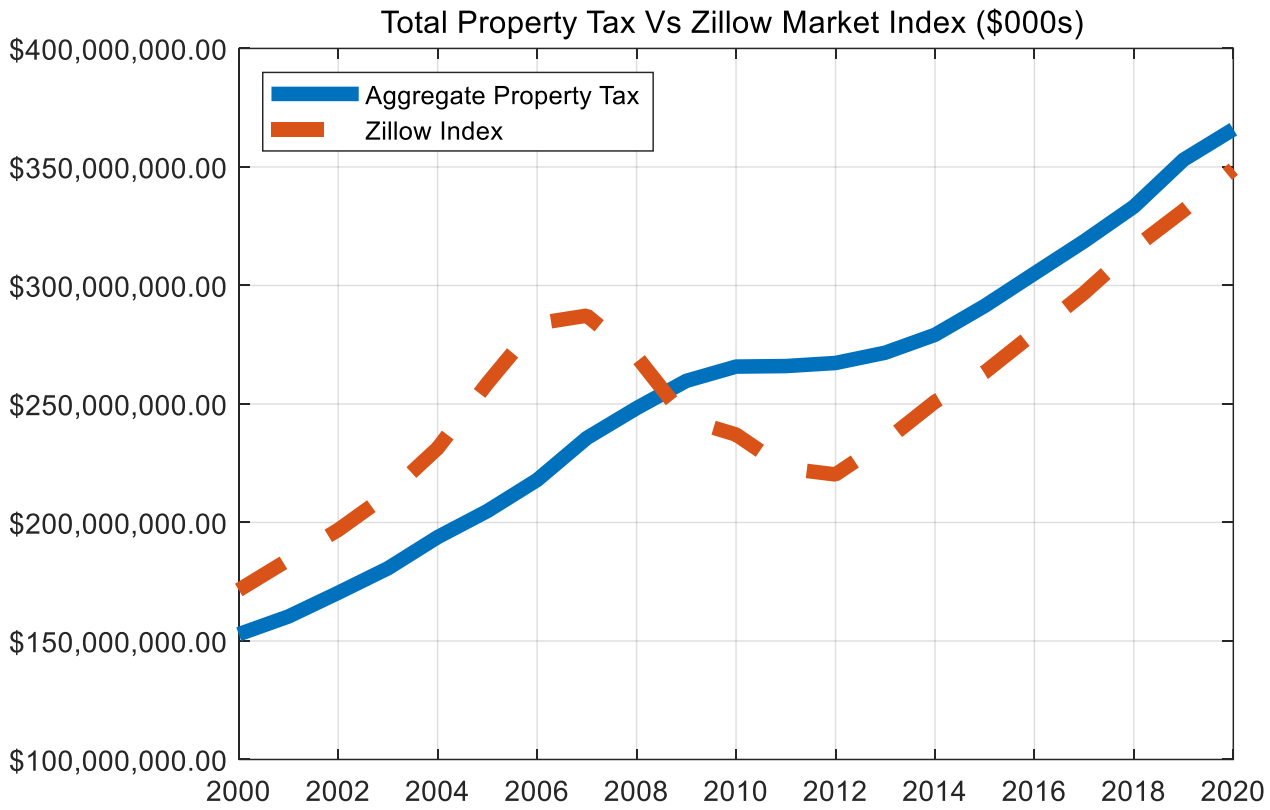
	(1)	(2)	(4)	(5)
	% Diff Between Sale and Assessed Value		% Sold 10% Below the Assessed Value	
Passed Referendum	-16.7***		3.68**	
	(-3.940)		(2.290)	
# of Passed Referenda		-14.0***		3.59**
		(-4.223)		(2.637)
Year FE	Yes	Yes	Yes	Yes
Observations	343,703	343,703	343,703	343,703
Adjusted R-squared	0.064	0.064	0.061	0.061

Having Minimal Fluctuations is a Good Thing.

Local governments cannot readily issue debt as federal governments.

They cannot participate in seigniorage.

Property Taxes are the primary source of their revenue.



Corruption scandal [edit]

On January 4, 2011, Owen Harris, a Supervising Appraiser, at the LA County Assessor's office, spotted discrepancies in property assessments of affluent homes setting off a Los Angeles County District Attorney-led investigation into possible corruption within the office.[13] The Los Angeles District Attorney's office searched a dozen locations, including the homes of Noguez and associates, following allegations that Noguez had peddled his influence to secure tax reductions for his campaign contributor's clients.[14] In May 2012, an employee was arrested on 60 felony counts for lowering the property tax rates by $172 million for homeowners in Beverly Hills, Brentwood and Pacific Palisades in exchange for contributions to Noguez's campaign.[15][16]

Noguez began an indefinite paid leave of absence in June 2012 amid ongoing investigations.[17] On June 12, 2012, Santos Kreimann, a civil servant of 20 years, was selected to fill in the vacant role as County Assessor.[18]

3	Harris	Texas	4,411.99	4,092,459	4,698,619
4	Maricopa	Arizona	23,828.26	3,817,117	4,410,824

Stephen Adamus, Yvonne Austin and Scott Woods say County Assessor Jeff Prang, his top managers and county lawyers have violated tax codes to benefit property owners with ties to elected officials by giving them favorable decisions on reassessments. The trio alleges the county has intentionally lost legal cases, reversed property tax decisions and reimbursed millions of dollars to individuals and corporations in back taxes.

	Assessor	First_Name
18	Jeffrey Prang	Jeffrey
	John Noguez	John
	Robert Quon	Robert
	Rick Auerbach	Rick
93	Fritz Kaegi	Fritz
	Joseph Berrios	Joseph
	James Haulihan	James
	Eddie Cook	Eddit
	Paul D. Petersen	Paul
	Keith E. Russell	Keith
54	Ernest J. Dronenburg	Ernest
58	Claude Parrish	Claude
	Webster Guillory	Webster
31	Pedro J. Garcia	Pedro
72	John R. Ames	John
30		
58	Peter Aldana	Peter
	Larry Ward	Larry

Former County Assessor Paul Petersen pleads guilty to welfare fraud in international adoption scheme

Robert Anglen Arizona Republic

Published 11:23 a.m. MT Jun. 18, 2020 | Updated 4:47 p.m. MT Jun. 20, 2020

Maricopa County Assessor Paul Petersen accused of adoption fraud

Corrections & Clarifications: Paul Petersen's hearing was open to the public via an audio link although the courtroom itself was closed to the public because of COVID-19. An earlier version of the story did not make that clear.

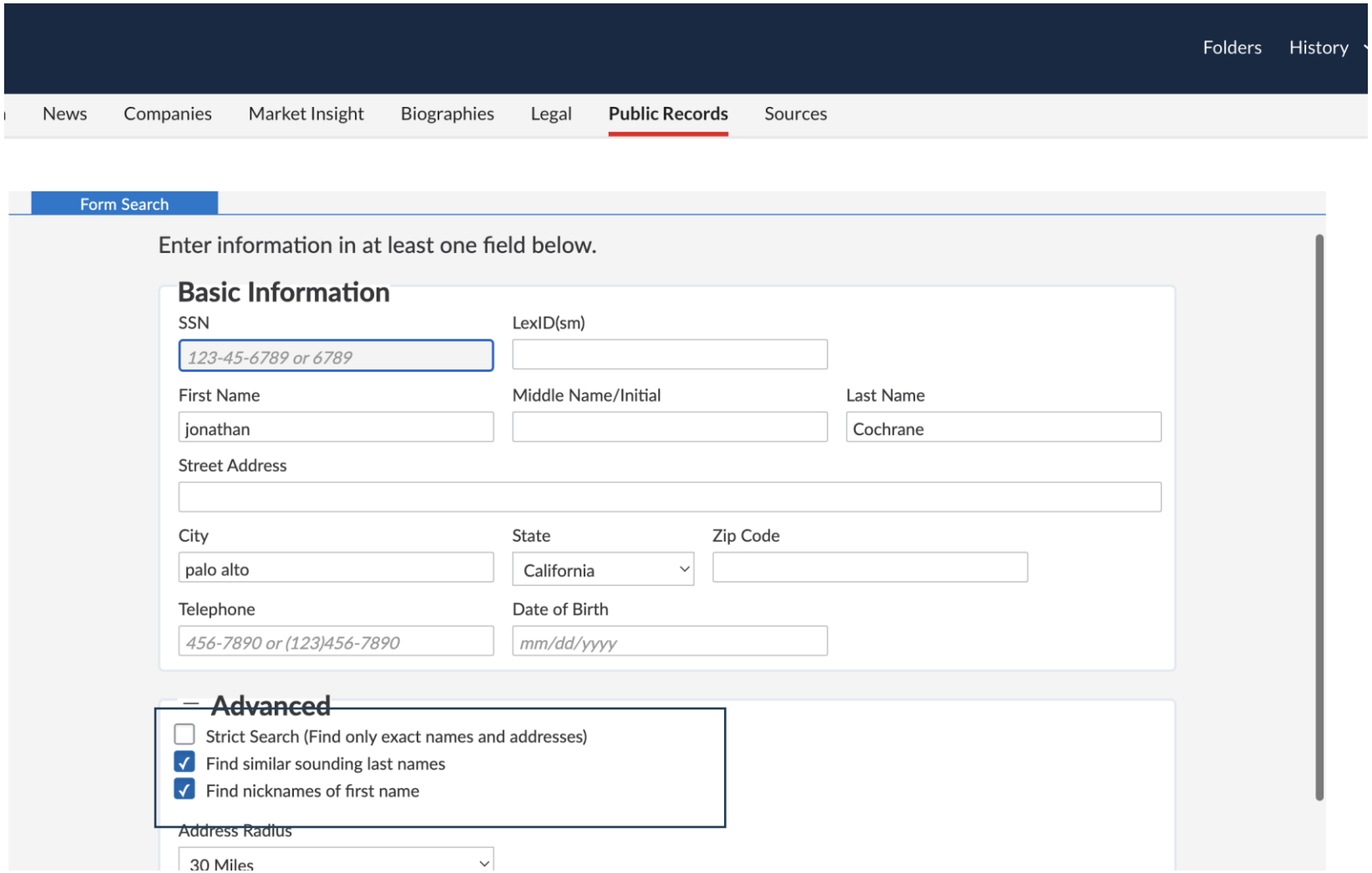
Paul Petersen, who made dozens of illegal adoption deals over the past decade, tried to turn a guilty plea Thursday into a deal of his own.

Whether he succeeded will be measured on how much time he spends in prison.

The former Maricopa County Assessor faces state and federal charges in Arizona, Utah and Arkansas for using his private adoption business to transport pregnant women from the Republic of the Marshall Islands to the United States.

Petersen told a Maricopa County Superior Court judge he intends on parlaying three guilty pleas into a universal deal to reduce his sentence and land him in a federal penitentiary rather than state prison.

LexisNexis Introduction



We use SmartLinx from LexisNexis to match individuals to their real assets using public records.

In this example, we search for Jonathan Cochrane living near Palo Alto, California.

This helps us link abbreviations and alternative common names.

In this case, alternatives such as “Jon” or “John” give the same results.

LexisNexis Introduction

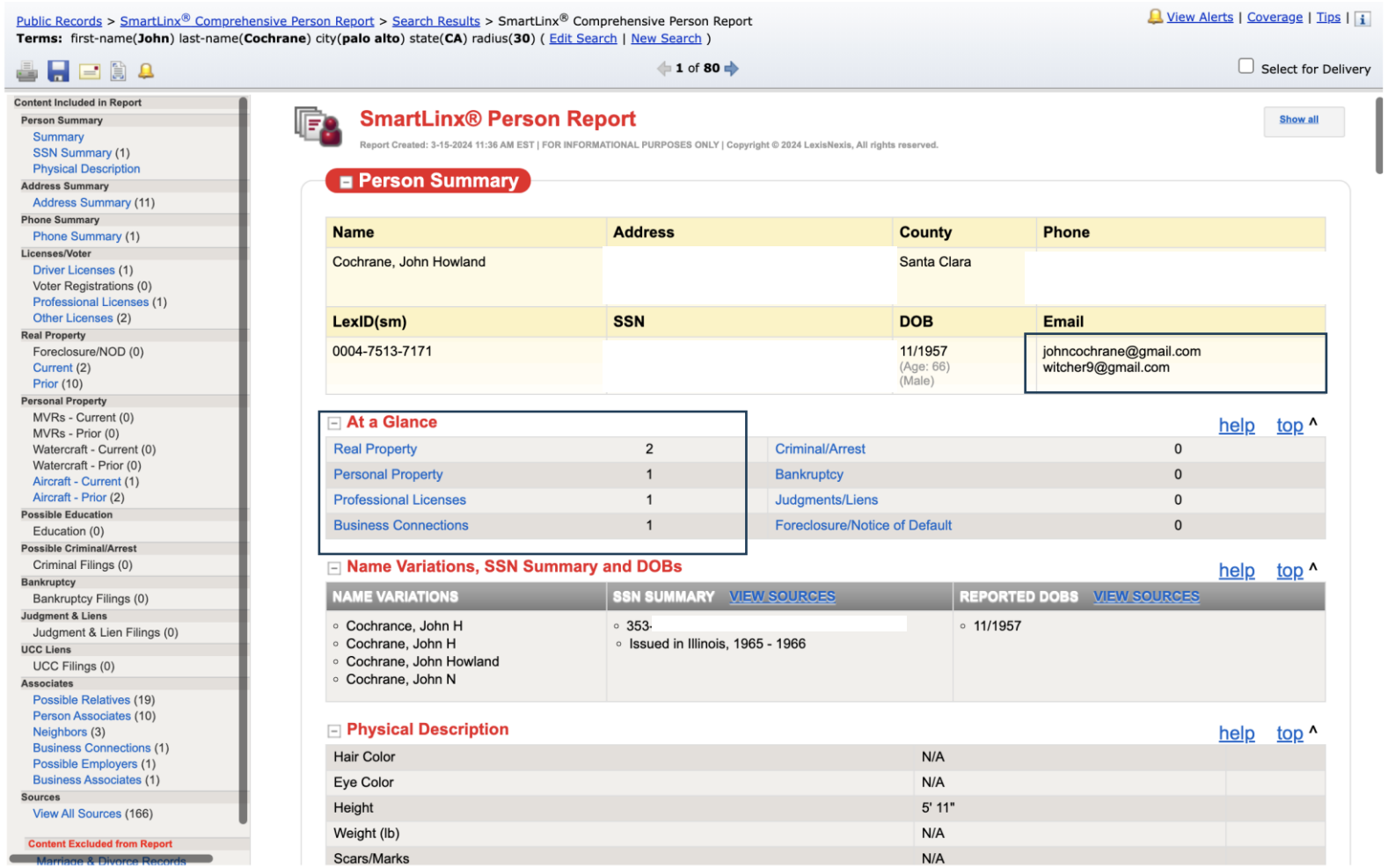
LexisNexis sends back a list of possible matches to the search query.

The match list is in the order of likelihood.

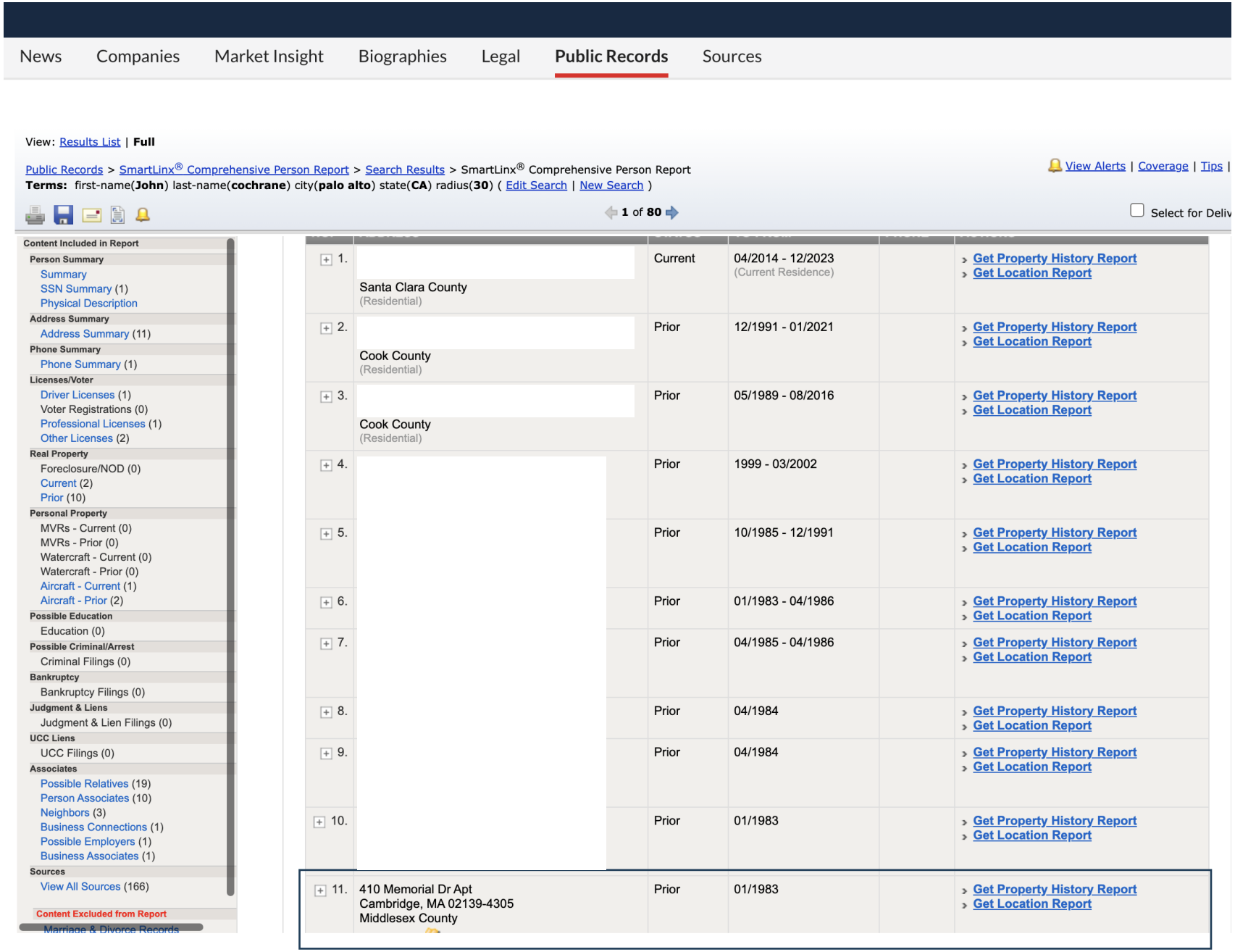
First 5 digits (Area and Group Numbers) of the SSN are also listed.

318-361 = Illinois Birth Code.

LexisNexis Introduction



We are linked to the individual's email addresses, their real property registrations, relatives, and other real details.



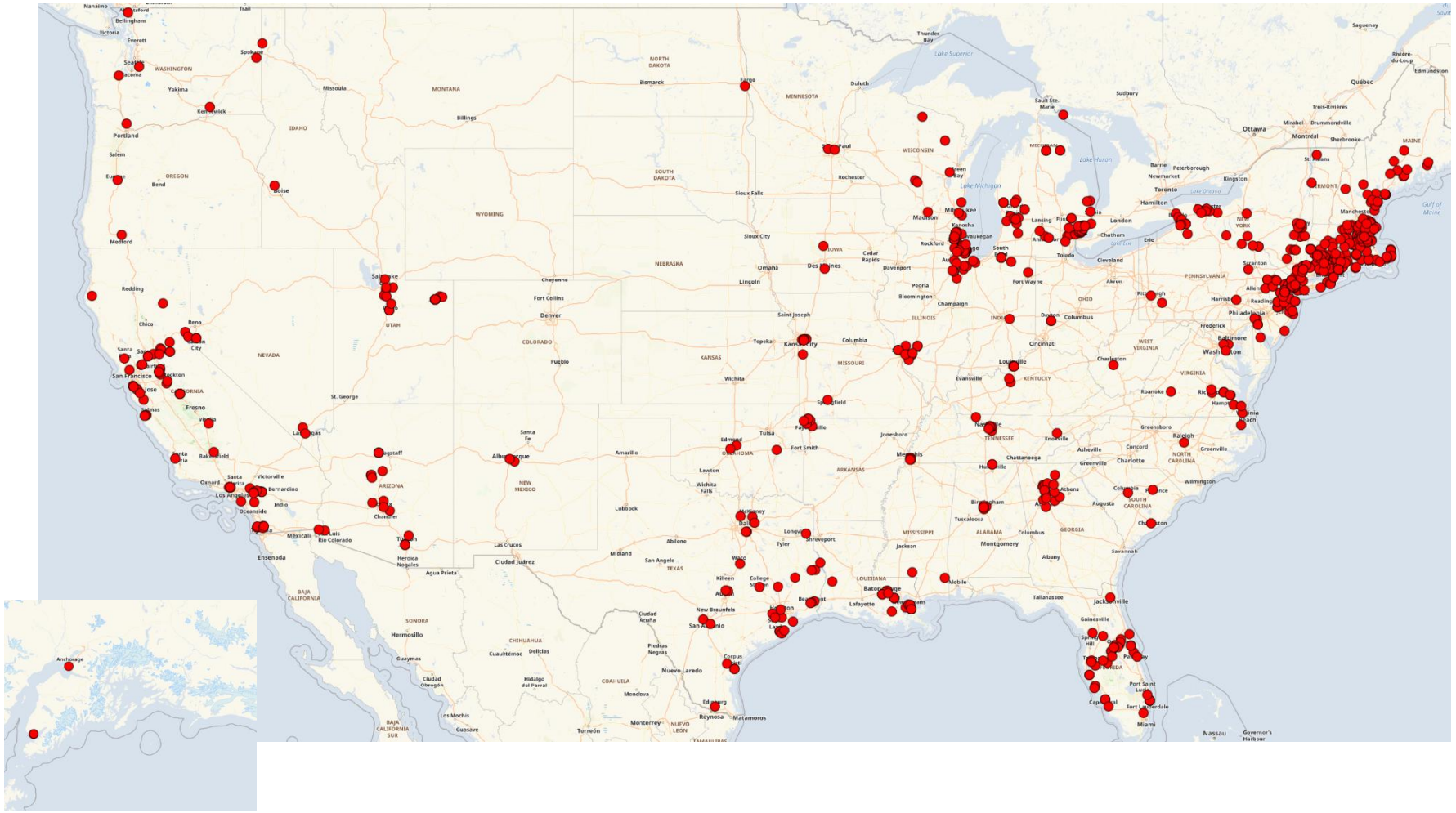
The linked set of real property addresses, and the timing of residence allow us to make inferences on an individual's properties.

In this case, we can trace the individual's addresses to a Cambridge MA dormitory in 1983.

Assessor Data Collection Process

1) Used several teams of Research Assistants to obtain Assessor Names and their dates in office for the largest 500 US counties.
2) Combined this list with the list of assessors from public office and Assessor Association websites.
3) Pulled these 1,679 Unique Names/Counties pairs through LexisNexis SmartLinx Comprehensive Person Report, and examined the first 9 persons in each result.
4) For each assessor, we identify if it is the right person on 1) Government Email (.gov or .us), 2) County/Assessor Employment, and 3) Unique Person in Area. If none of these flags show up for any of possible person results, we drop the assessor. If more than 1 person matches, we pick the person with the 1) most indicators and 2) highest likelihood according to SmartLinx.

Assessor Properties Across the US

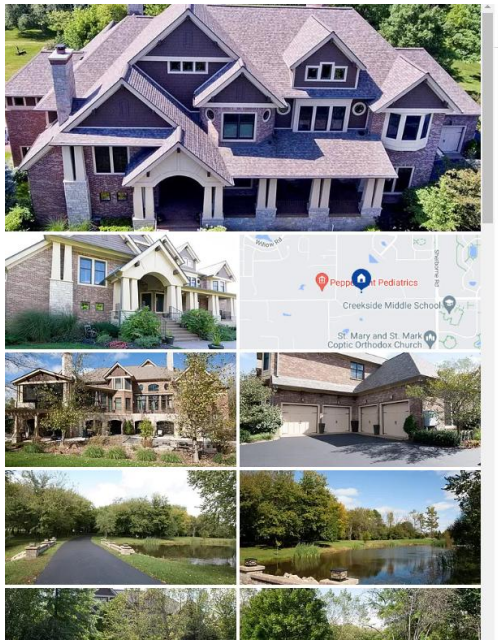


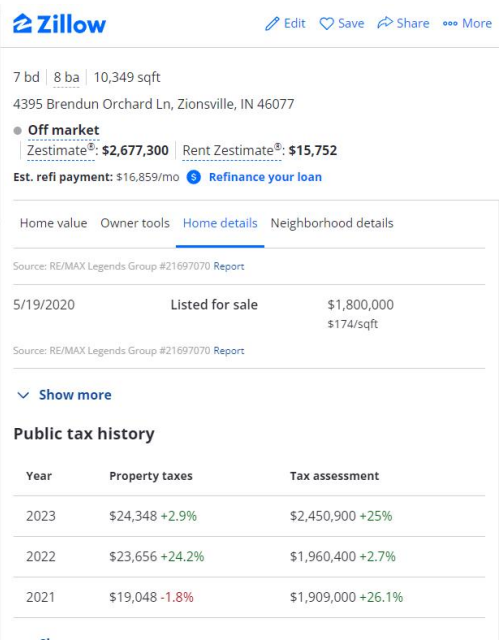
The 1,679 sample of possible assessors filters down to 707 after LexisNexis Persons search.

Owning/Having Owned 4,214 Properties between 2000 and 2020.

Assessing Assessors (vs. Neighbors)

	(1)	(2)	(3)	(4)
	% Change in Assessed Value		Total Assessed Value	
Assessor	-0.0121***	-0.0119***	-3,348	-4,270***
	(-5.257)	(-4.546)	(-0.415)	(-3.750)
Prior Assessed Value		-6.70e-08***		1.012***
		(-7.740)		(128.1)
Square Footage		8.71e-05		-30.64
		(0.939)		(-1.221)
Other Hedonic Controls	No	Yes	No	Yes
County X Year FE	Yes	Yes	Yes	Yes
Observations	16,895,963	15,573,810	16,895,963	15,573,810
Adjusted R-squared	0.183	0.209	0.320	0.939





Assessing Assessors (vs. Neighbors)

	(1)	(2)	(3)	(4)
	% Change in Assessed Value		Total Assessed Value	
Within County	-0.0128***	-0.0123***	-2,565	-4,353***
	(-5.596)	(-4.676)	(-0.316)	(-3.829)
Outside County	0.00244	0.00653	82,726**	3,248
	(0.133)	(0.353)	(2.511)	(0.568)
Prior Assessed Value		-6.70e-08***		1.012***
		(-7.740)		(128.1)
Square Footage		8.71e-05		-30.64
		(0.939)		(-1.221)
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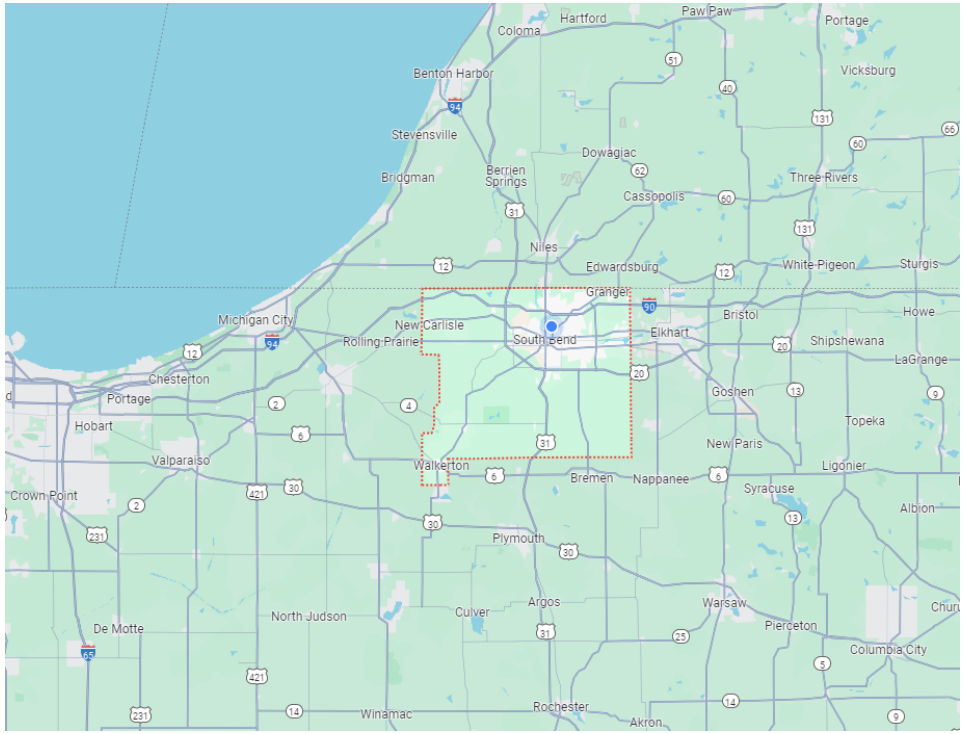
Observations	16,895,963	15,573,810	16,895,963	15,573,810
Adjusted R-squared	0.183	0.209	0.320	0.939



Assessors and Political Economy

	(1)	(2)	(3)
	% Diff Between Sale and Assessed Value		
Assessor Property Undervaluation	-2.239**	-9.238***	-8.298***
	(2.095)	(3.159)	(2.978)
County FE	No	Yes	Yes
Year FE	No	No	Yes
Observations	135	102	102
Adjusted R-squared	0.010	0.875	0.881

The assessor's deviation in assessment values could be an ***indirect benefit of holding political office***.

We can also tie the individual assessor characteristics to the supply/demand of valuation at the county level.

We have suggestive evidence that the assessors with the most freedom to have a lower assessment value for their own properties tend to keep the overall assessments higher.

Conclusion

Property assessments, as a tax policy tool, smooth out fluctuations from property values, and insulate property tax rates from having to adjust, in generating property tax revenues.

There is a general propensity toward increasing assessment values to budgetary shocks, rather than rates, indicating certain flexibility in property taxation.

We present evidence that these “benefits” have costs- primarily in creating avenues for extraction.