

House Prices in Local Real Estate Markets: New Trends, Free Data, and Research Nuggets

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Federal Housing Finance Agency (FHFA)

based on a series of co-authored papers with
Alexander Bogin & William Larson (both at FHFA)

NAR Realtors® Conference & Expo

Saturday November 4, 2017

9-10:30am

Session: Impact of Rising House Prices on
Home Buyers and Sellers



Disclaimer: The analysis and conclusions are those of the authors and do not necessarily represent the views of the Federal Housing Finance Agency or the United States.

If you or one of your clients has been affected by Hurricanes Harvey or Irma...

May be eligible to temporarily stop making your monthly mortgage payment for **up to 12 months**.

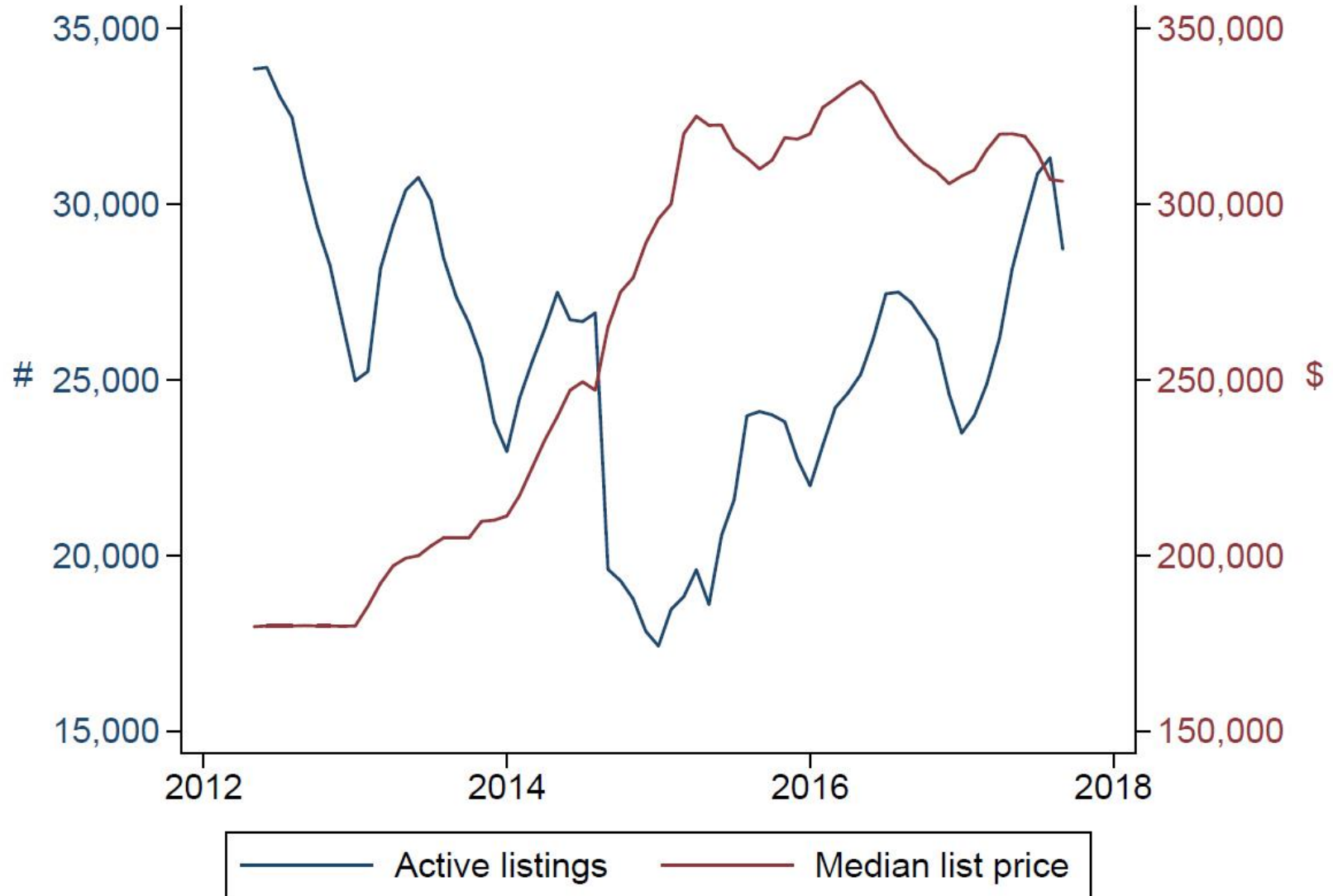
At the end of this break:

- No late fees
- No delinquencies reported to credit agencies
- No big catch-up payment

Can work with servicer to resume payments.

go.usa.gov/xRFmf

Too early to measure effects in Houston data



Source: Realtor.com full historical inventory trends data

Three Qs for today

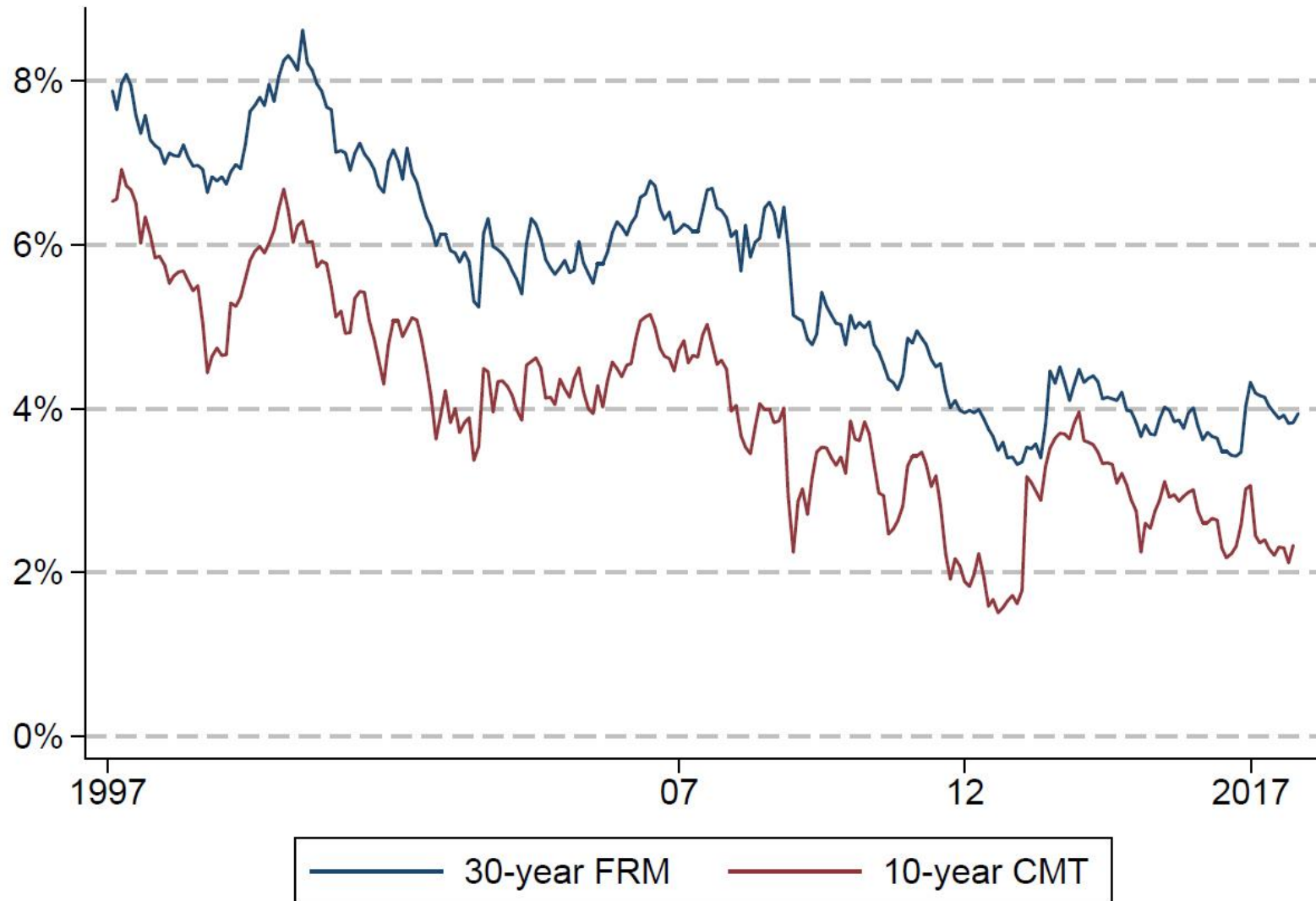


1. What's happening in real estate markets?
2. Where are the free data?
3. What are cool insights from research?

Question #1

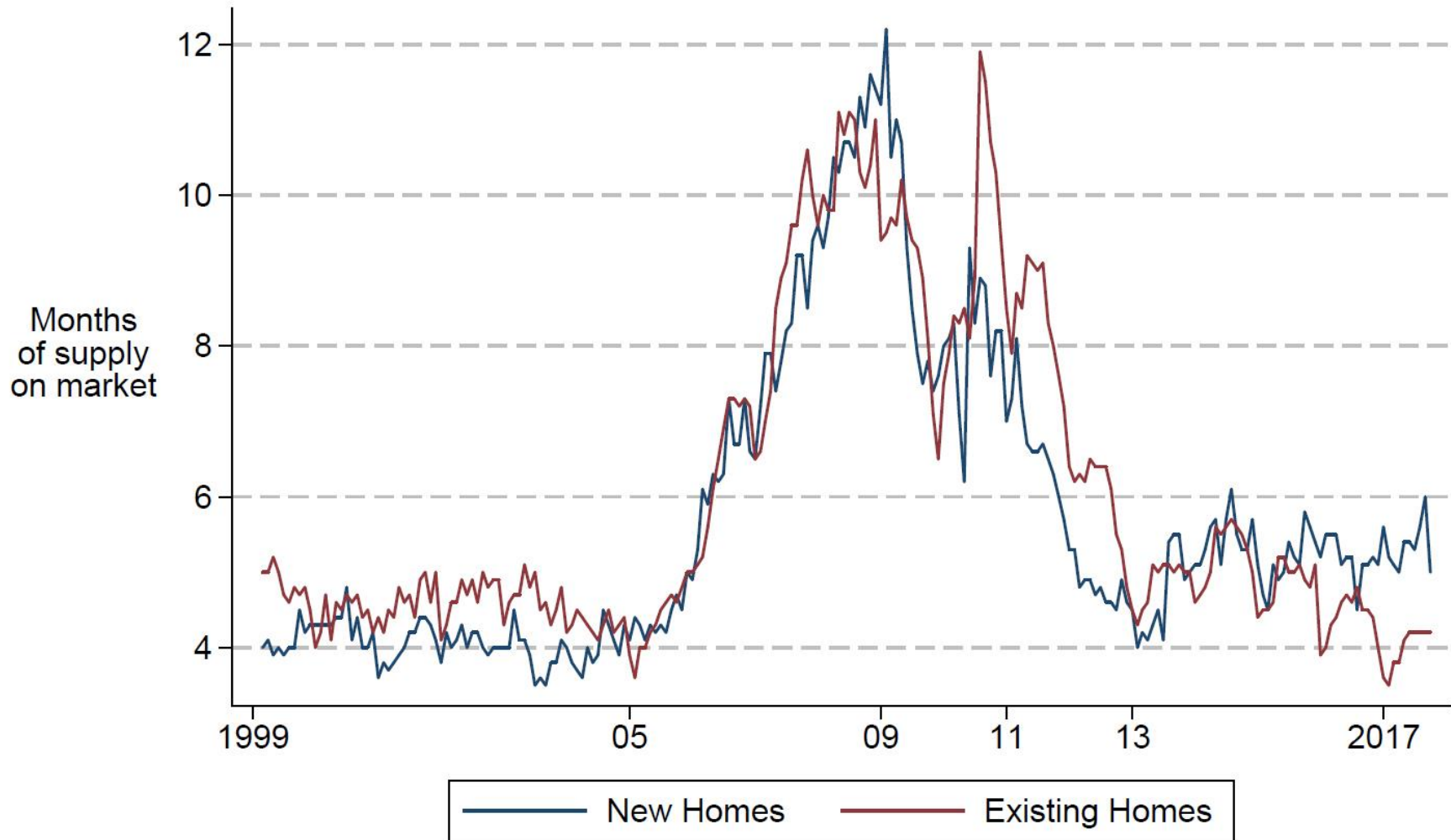
What's happening in
real estate markets?

Mortgage financing remains attractive



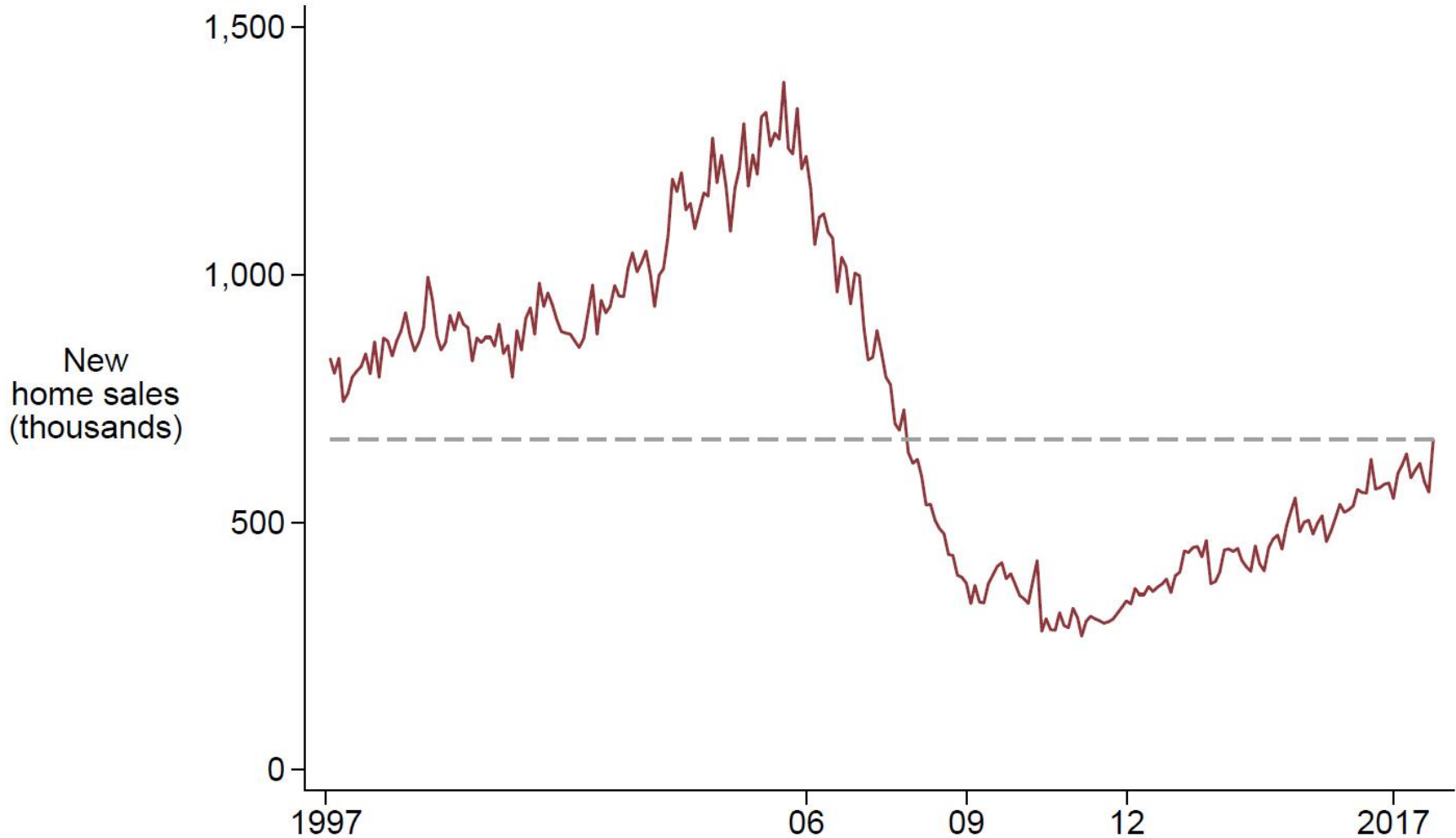
Source: U.S. Department of Treasury and Freddie Mac

Real estate market supply turns over quickly



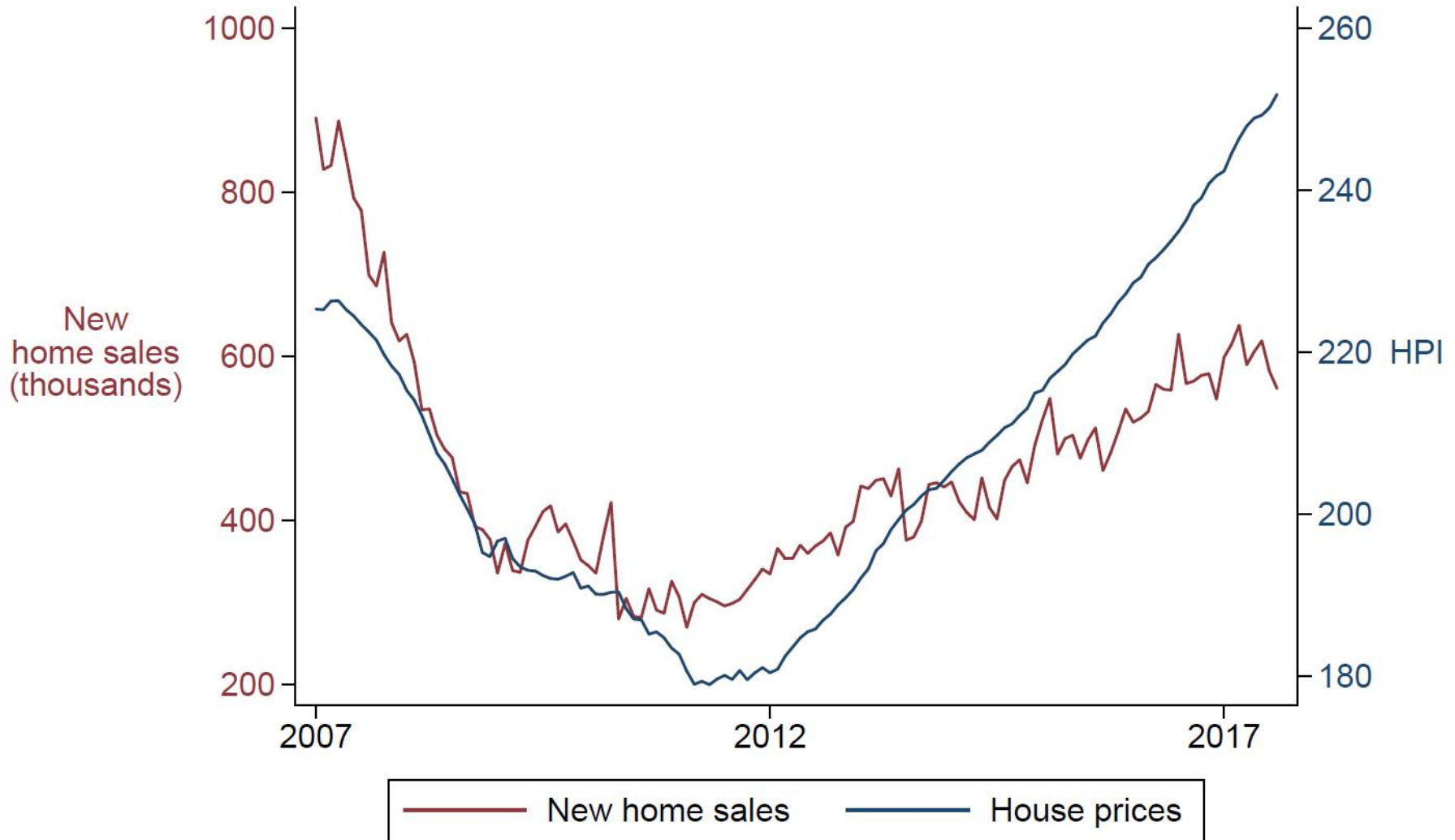
Source: U.S. Census Bureau and National Assoc. of Realtors

New home sales still below historic levels



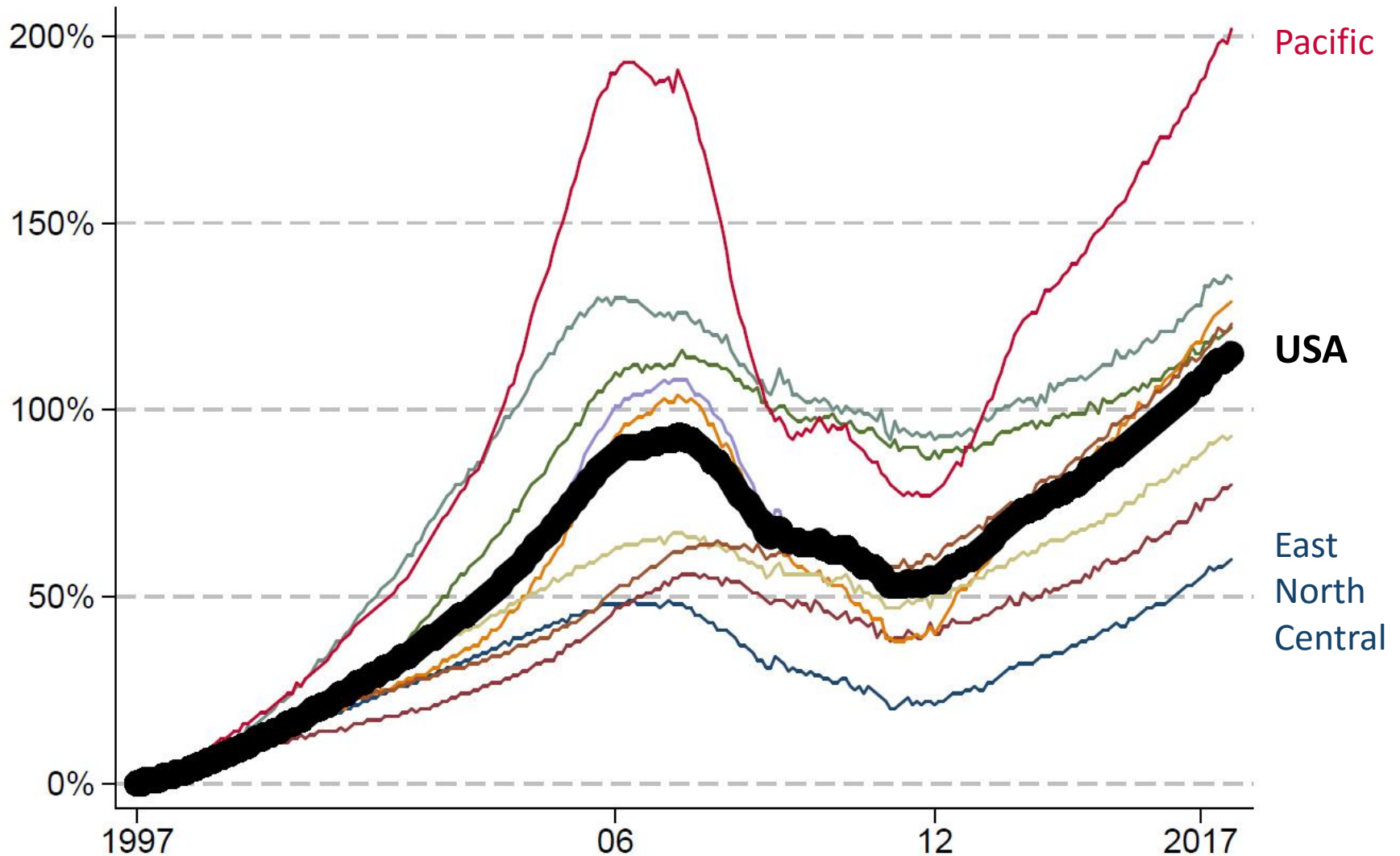
Source: U.S. Census Bureau

But they are rising like prices (often faster)



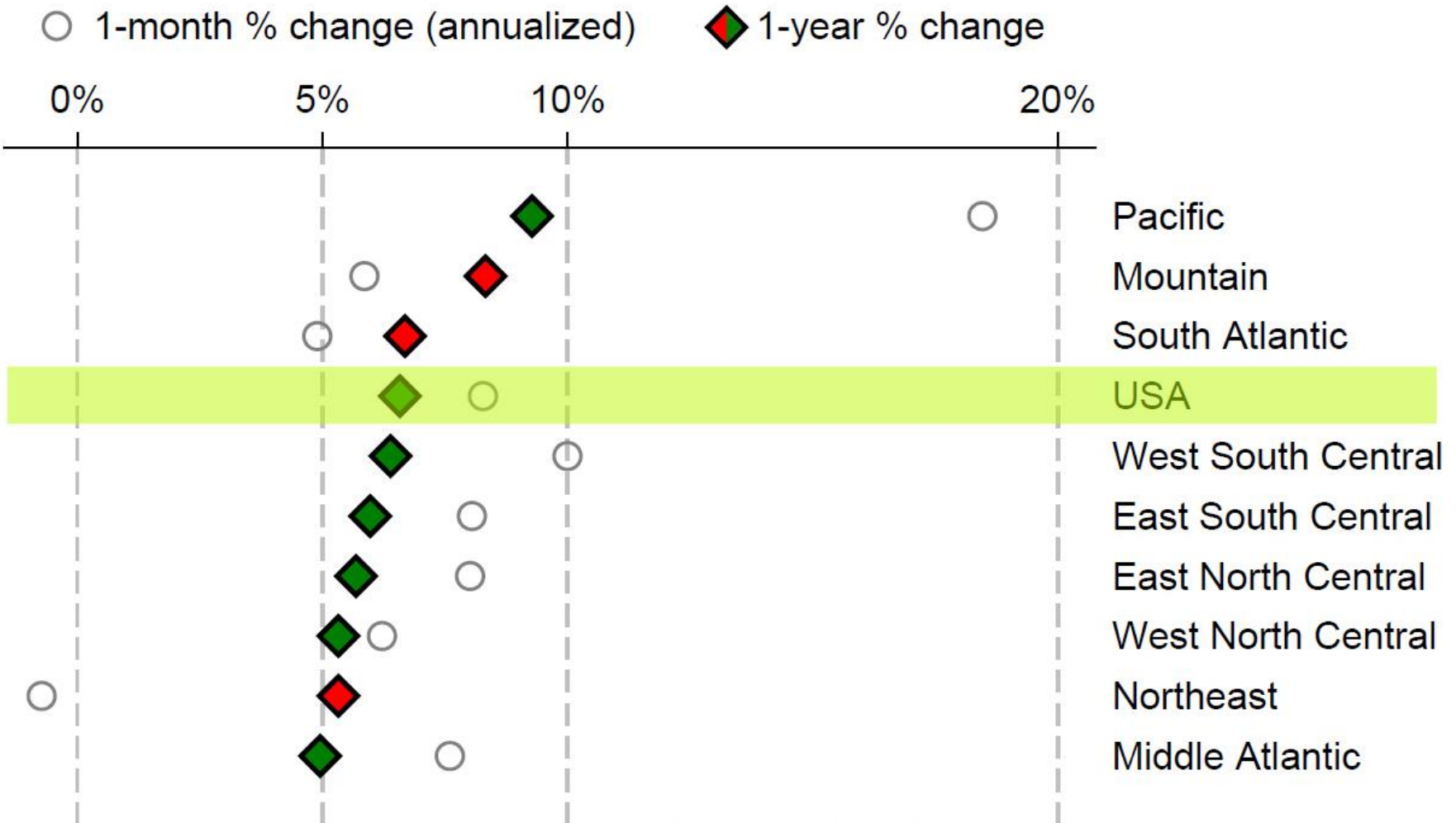
Source: HPI from FHFA. New home sales from U.S. Census Bureau.

Leads to consistent price gains



Source: FHFA HPI (purchase-only, seasonally adjusted, nominal) thru August 2017.

Regional gains did taper but picked up last month

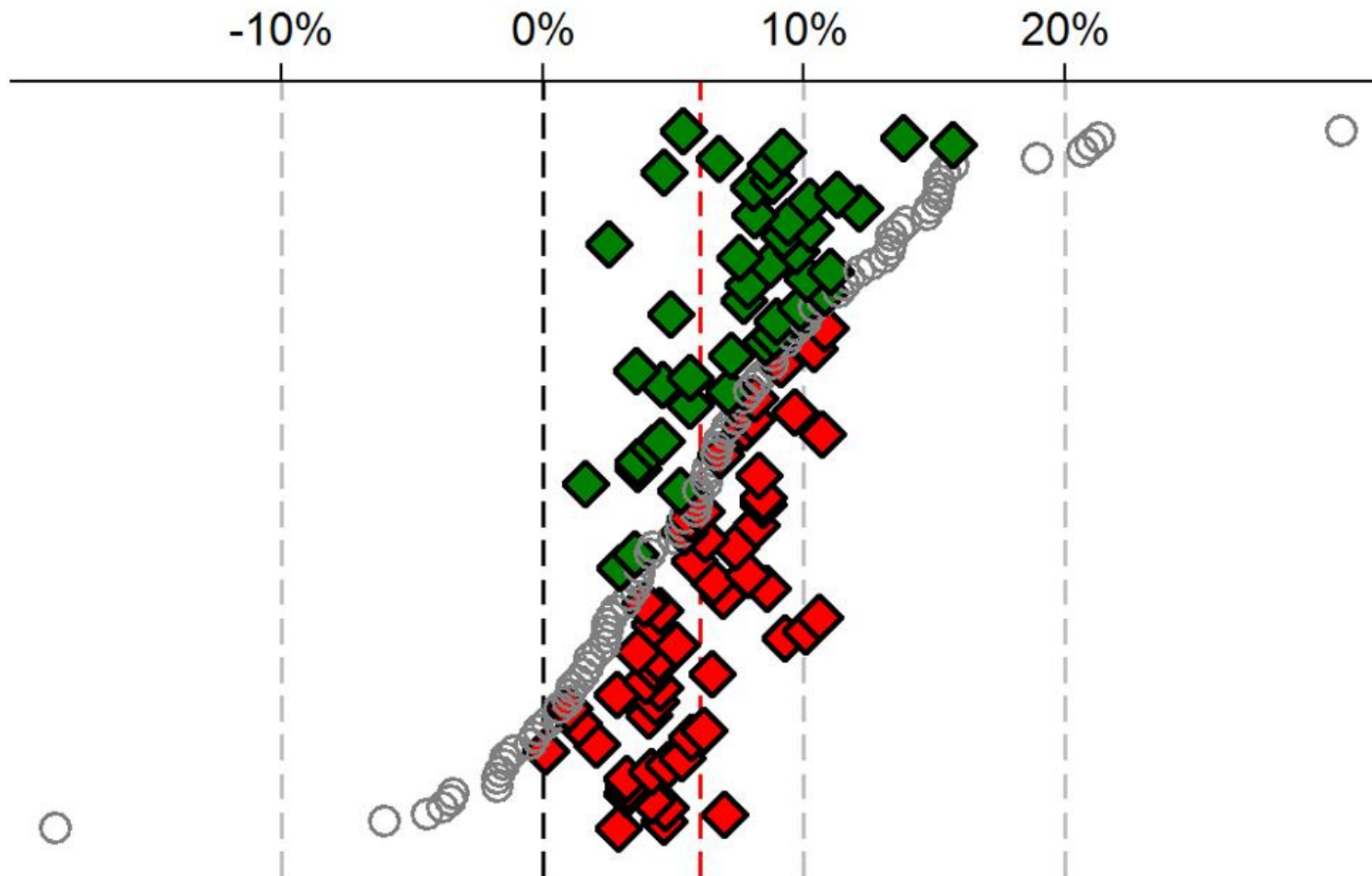


Source: FHFA HPI (purchase-only, seasonally adjusted, nominal) thru August 2017.

Gains vary even more across cities



○ 1-qtr % change (annualized) ◆ 4-qtr % change



Source: FHFA HPI (PO, SA, nominal) thru 2017Q2. Sorted by 1-quarter % change.

We know very well....

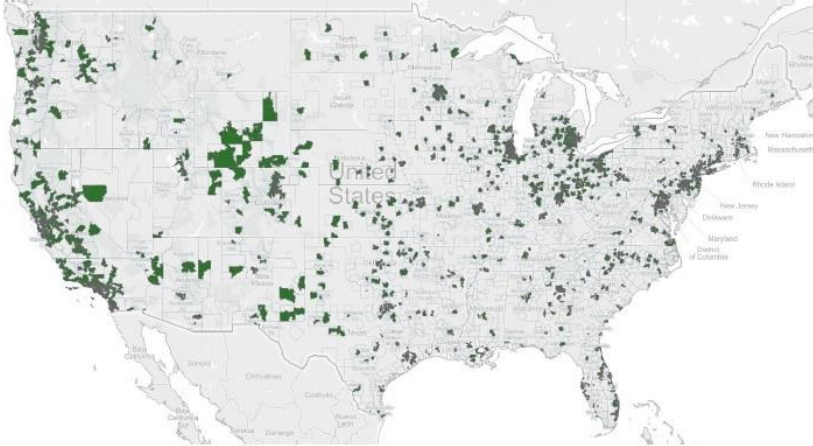
It's all about location, location, location!

Home buyers and sellers are local.

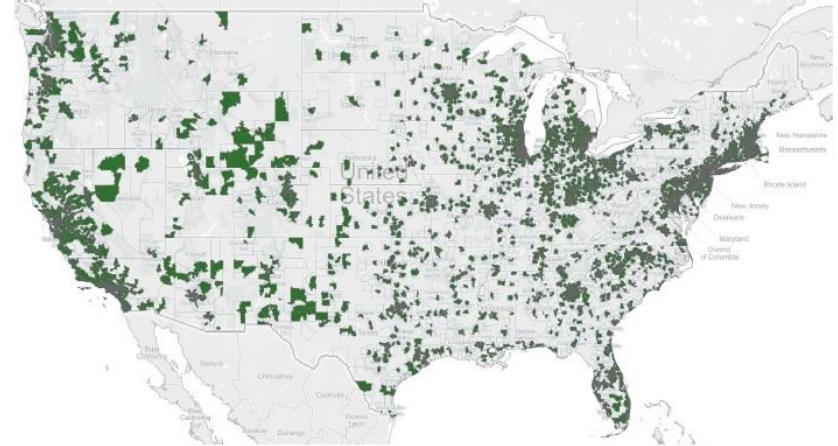
And data often should be, too!

We created LOCAL house price indices.
These NEW data can open up doors.
We are providing them for FREE.

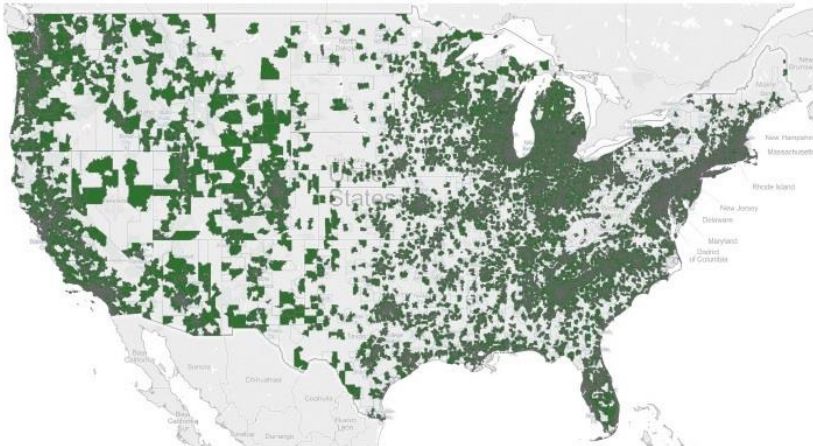
1980



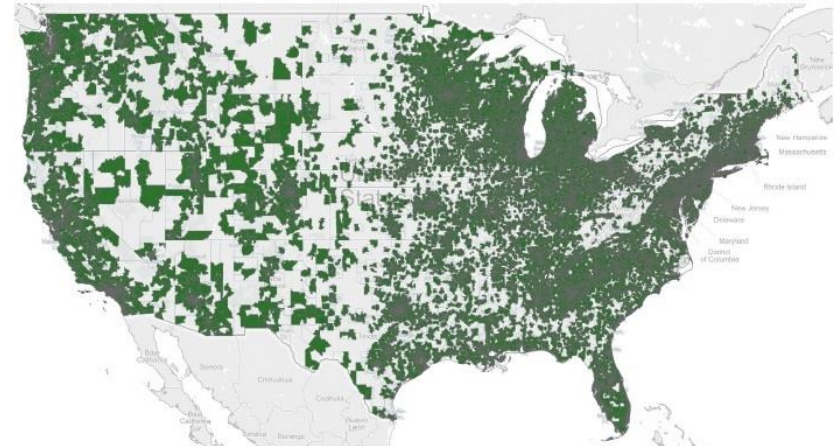
1990



2000



2010



Question #2

Where can you get free data?



SOURCE: FHFA

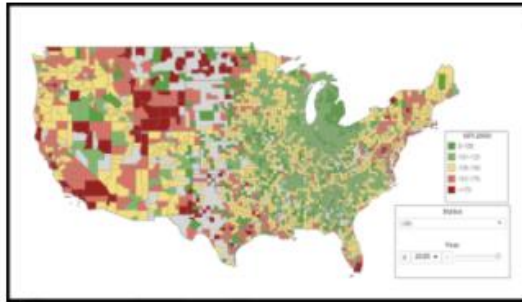
House Price Indices (HPIs)

www.fhfa.gov/hpi

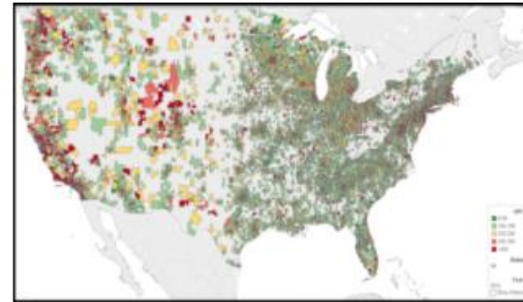
Tools let you explore broad trends



HPI County Map



HPI ZIP5 Map



HPI Four-Quarter Appreciation Map



HPI Calculator

State MSA/MSAD

State:

Purchase Quarter:

Valuation Quarter:

Purchase Price:

Estimated Value:

HPI Summary Tables

Change in FHFA State House Price Index
(Seasonally Adjusted, Purchase-Only Index, 2013Q3)

State HPI	City HPI	Regional HPI				
State	Rank	5-Quarter	1-Year	5-Years	Since 1991Q1	
Nevada	1	3.27	25.36	-17.75	37.24	
Arizona	2	2.43	19.80	-25.29	106.74	
California	3	5.23	16.38	-16.43	79.39	
State	4	4.35	15.09	-11.46	157.28	
Florida	5	1.94	12.34	-4.76	97.44	
Georgia	6	0.80	12.07	-14.02	64.53	

HPI Motion Chart



A simple calculator can adjust values



HPI CALCULATOR

Select:

State MSA/MSAD

MSA/MSAD

Chicago-Naperville-Arlington Heights, IL (MSAD)

Purchase Quarter

2012 Quarter 1

Valuation Quarter

2017 Quarter 2

Purchase Price

\$250,000

Calculate

Estimated Value:

\$338,485

Or you can take it to the data



	A	B	C	D	E	F	G	H
1	HPI for Counties (All-Transactions Index)							
2	Experimental Indexes Showing Cumulative (Nominal) Annual Appreciation							
3	<p>* These annual county indexes should be considered developmental. As with the standard FHFH HPIs, revisions to these indexes may reflect the impact of new data or technical adjustments. Indexes are calibrated using appraisal values and sales prices for mortgages bought or guaranteed by Fannie Mae and Freddie Mac. As discussed in the Working Paper 16-01, in cases where sample sizes are small for the county area, an index is either not reported if recording has not started or a missing value is reported with a period ("."). Index values always reflect the native county index, i.e. they are not made with data from another area or year. Three HPI values are provided and, since the indexes reflect cumulative appreciation since a certain period, the values reflect the base year being used (annual appreciations are the same). Column A is the state, Column B is the county name, Column C is the county's FIPS code, Column D is the year, Column E is the annual change, Column F is the index value with a base of 100 when first recorded, Column G is the index value with a base of 100 in 1990, and Column H is the index value with a base of 100 in 2000. If a county HPI has a missing value in Column F in 1990 or 2000 then the county HPI will have blank values in Column G or H, respectively.</p>							
4	<p>** For tracking and feedback purposes, please cite Working Paper 16-01 when using these data. A suggested form is: Bogin, A., Doerner, W., and Larson, W. (2016). Local House Price Dynamics: New Indices and Stylized Facts. Federal Housing Finance Agency, Working Paper 16-01. The working paper is accessible at http://www.fhfa.gov/papers/wp1601.aspx.</p>							
5	Last updated: February 23, 2017.							
6	<i>Not Seasonally Adjusted (NSA)</i>							
7	State	County	FIPS code	Year	Annual Change (%)	HPI	HPI with 1990 base	HPI with 2000 base
30977	MD	Prince Georges	24033	1975	.	100.00	35.58	32.11
30978	MD	Prince Georges	24033	1976	3.99	103.99	37.00	33.39
30979	MD	Prince Georges	24033	1977	4.32	108.48	38.60	34.83
30980	MD	Prince Georges	24033	1978	9.52	118.81	42.27	38.15
30981	MD	Prince Georges	24033	1979	11.13	132.04	46.98	42.39
30982	MD	Prince Georges	24033	1980	13.30	149.59	53.23	48.03
30983	MD	Prince Georges	24033	1981	4.75	156.70	55.75	50.31
30984	MD	Prince Georges	24033	1982	6.57	167.00	59.42	53.62
30985	MD	Prince Georges	24033	1983	1.60	169.66	60.37	54.48
30986	MD	Prince Georges	24033	1984	5.44	178.89	63.65	57.44
30987	MD	Prince Georges	24033	1985	6.35	190.26	67.69	61.09
30988	MD	Prince Georges	24033	1986	6.81	203.22	72.31	65.25
30989	MD	Prince Georges	24033	1987	8.10	219.69	78.17	70.54
30990	MD	Prince Georges	24033	1988	11.44	244.82	87.11	78.61
30991	MD	Prince Georges	24033	1989	9.89	269.03	95.72	86.38
30992	MD	Prince Georges	24033	1990	4.47	281.05	100.00	90.24
30993	MD	Prince Georges	24033	1991	2.16	287.11	102.16	92.19
30994	MD	Prince Georges	24033	1992	1.07	290.18	103.25	93.17
30995	MD	Prince Georges	24033	1993	-0.01	290.15	103.23	93.16
30996	MD	Prince Georges	24033	1994	-0.18	289.63	103.05	93.00
30997	MD	Prince Georges	24033	1995	0.50	291.09	103.57	93.46
30998	MD	Prince Georges	24033	1996	1.24	294.69	104.85	94.62
30999	MD	Prince Georges	24033	1997	-0.32	293.74	104.51	94.32
31000	MD	Prince Georges	24033	1998	1.27	297.48	105.84	95.51
31001	MD	Prince Georges	24033	1999	1.18	300.99	107.09	96.64
31002	MD	Prince Georges	24033	2000	3.47	311.45	110.81	100.00
31003	MD	Prince Georges	24033	2001	6.78	332.55	118.32	106.78
31004	MD	Prince Georges	24033	2002	9.45	363.97	129.50	116.86
31005	MD	Prince Georges	24033	2003	9.93	400.13	142.37	128.47
31006	MD	Prince Georges	24033	2004	19.42	477.82	170.01	153.42
31007	MD	Prince Georges	24033	2005	23.59	590.54	210.11	189.61
31008	MD	Prince Georges	24033	2006	16.84	689.97	245.49	221.54
31009	MD	Prince Georges	24033	2007	3.40	713.40	253.83	229.06
31010	MD	Prince Georges	24033	2008	-9.51	645.57	229.70	207.28
31011	MD	Prince Georges	24033	2009	-19.82	517.62	184.17	166.20
31012	MD	Prince Georges	24033	2010	-10.20	464.85	165.40	149.26
31013	MD	Prince Georges	24033	2011	-7.78	428.68	152.53	137.64
31014	MD	Prince Georges	24033	2012	-3.45	413.90	147.27	132.90
31015	MD	Prince Georges	24033	2013	4.38	432.05	153.72	138.72
31016	MD	Prince Georges	24033	2014	9.59	473.50	168.47	152.03
31017	MD	Prince Georges	24033	2015	6.48	504.20	179.40	161.89
31018	MD	Prince Georges	24033	2016	5.53	532.07	189.31	170.84

What is the trough-to-peak recovery in Prince George's County?

Year	HPI
2012	413.90
2016	532.07

Five common questions



1) What is the average market appreciation over a period?

Use the HPI to compute the percentage change from 2012 to 2016.

$$\frac{New - Old}{Old} * 100\% = \frac{532.07 - 413.90}{413.90} * 100\%$$
$$= 0.2855 * 100\% \approx 29\%$$

2) How can the HPI be used to adjust an average house price?

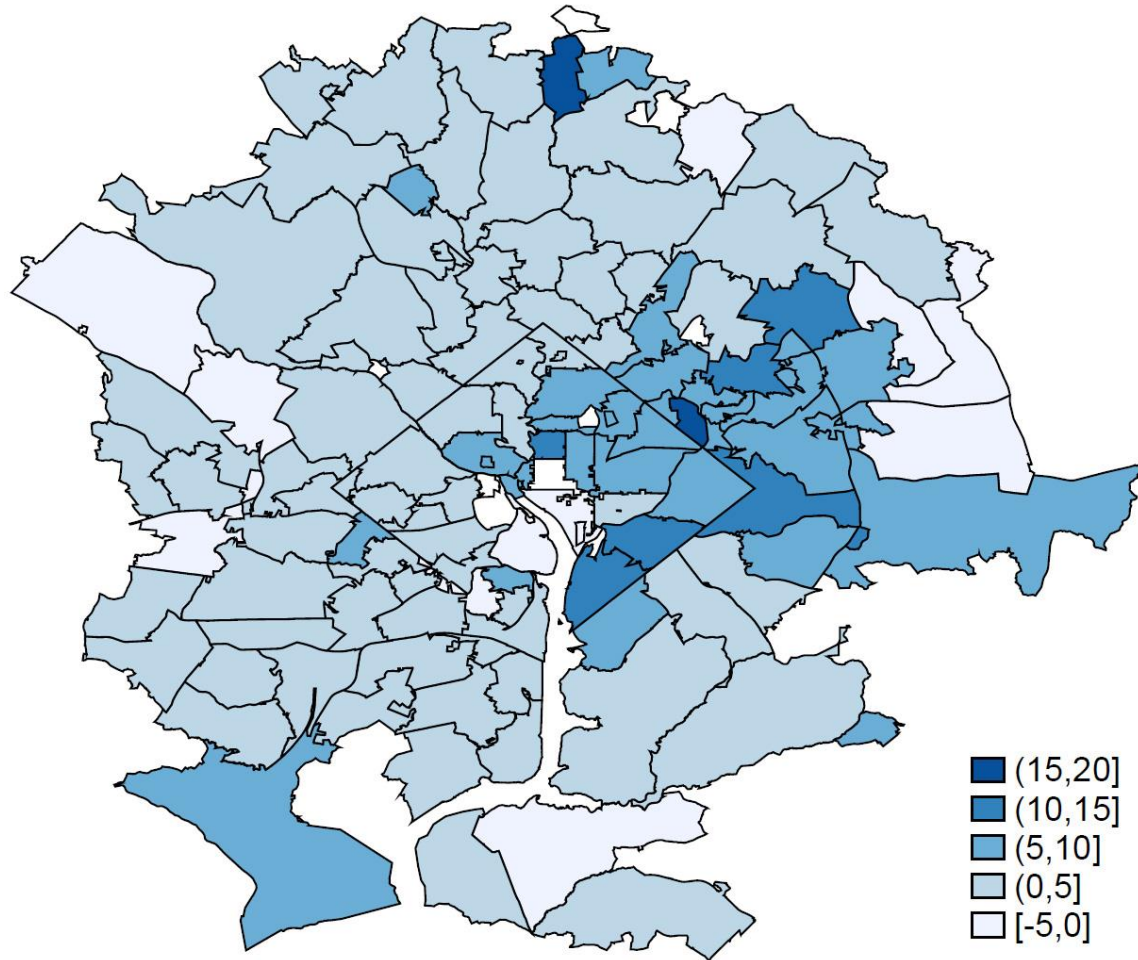
Imagine a house sold for \$200,000. Multiple it by # above!

$$\$200,000 * (1.2855) = \$257,100$$

Five common questions



3) Where are the largest percentage gains over the last year?



Five common questions



4) Where can I download the data?

<https://www.fhfa.gov/hpi>

A screenshot of the FHFA website's House Price Index (HPI) page. The browser address bar shows 'www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index.aspx'. The page header includes the FHFA logo and navigation links: 'About Us', 'Supervision & Regulation', 'Conservatorship', 'Data & Tools', 'Policy, Programs & Research', and 'Key Topics'. The main content area is titled 'HOUSE PRICE INDEX' and contains several paragraphs of text explaining the HPI. A red arrow points from the text 'click a link below for the data page' to the 'Monthly Purchase-Only Indexes' link under the 'Datasets' section. The left sidebar contains a 'Data' section with links to various data sources, including 'House Price Index' which is highlighted in red.

Five common questions



5) What data can I access?

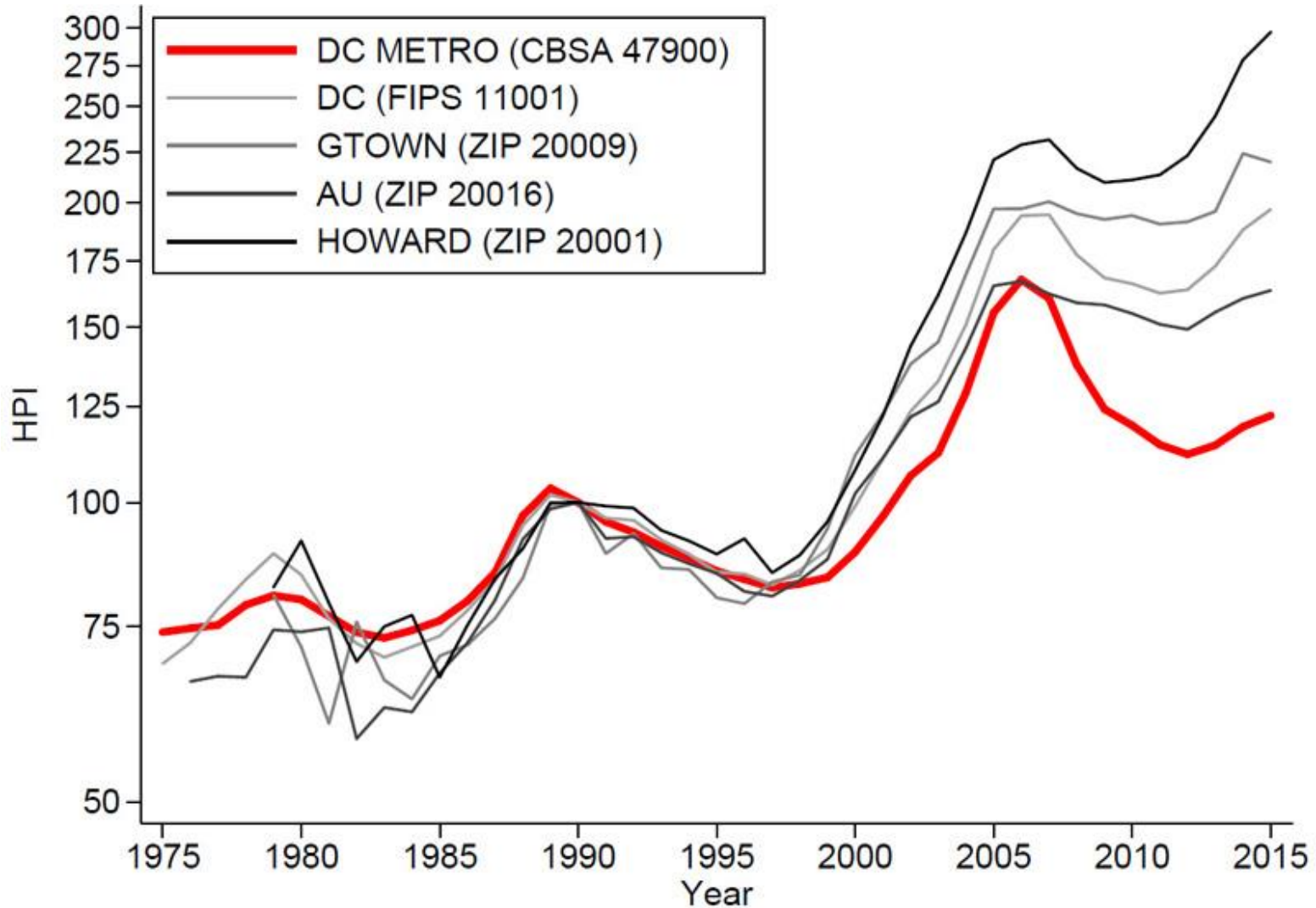
Monthly	Quarterly	Annual
National	National	National
Census divisions	Census divisions	Census divisions
	States	States
	MSAs or cities	MSAs or cities
	ZIP3, non-metro	ZIP3, non-metro
		ZIP codes
		Counties
		Census tracts

Data reflect 100 million transactions back to the 1970s.

Question #3

What are cool insights from research?

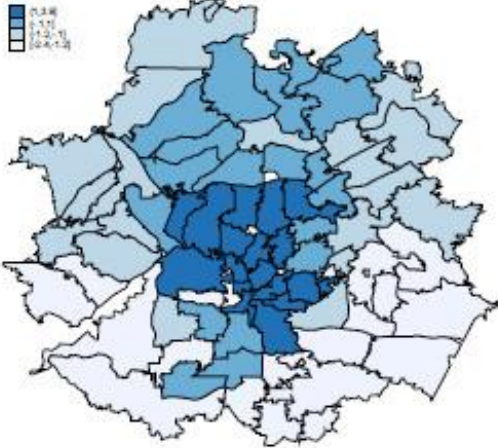
Is there really local house price variation?



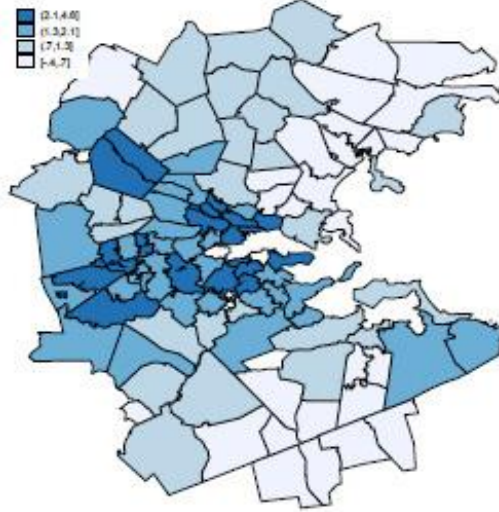
Might it be a D.C. thing?



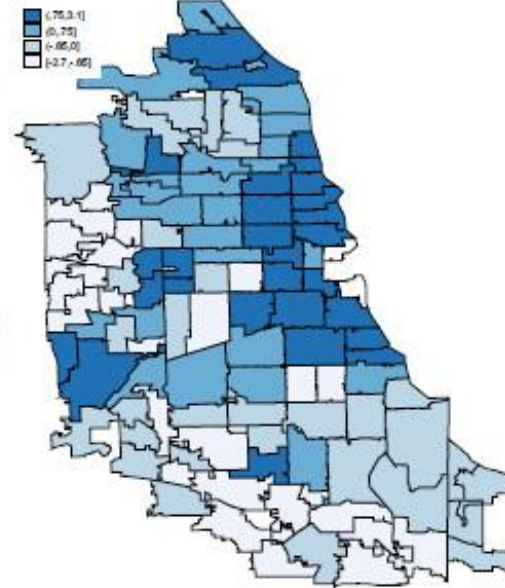
(a) Atlanta



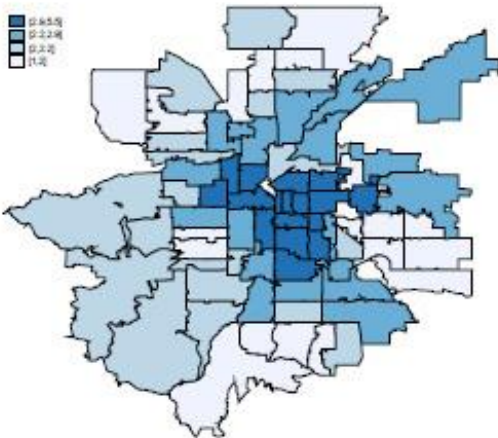
(b) Boston



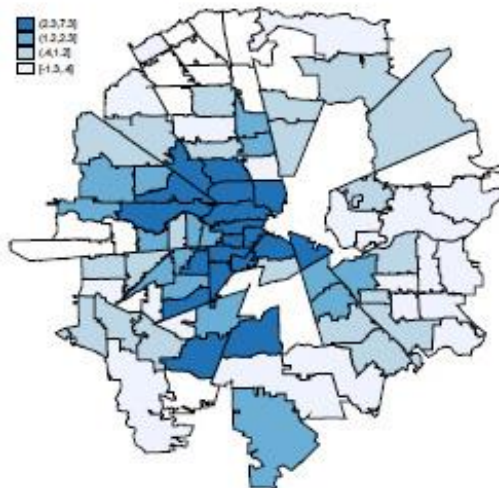
(c) Chicago



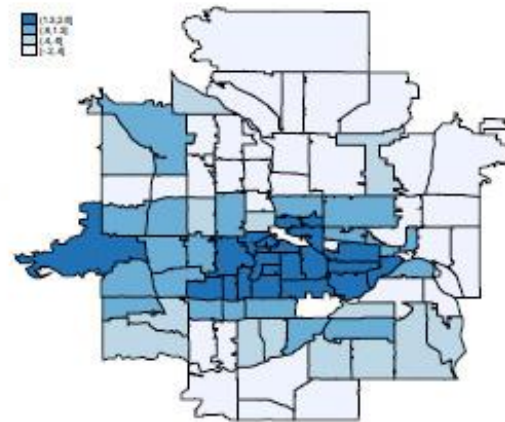
(d) Denver



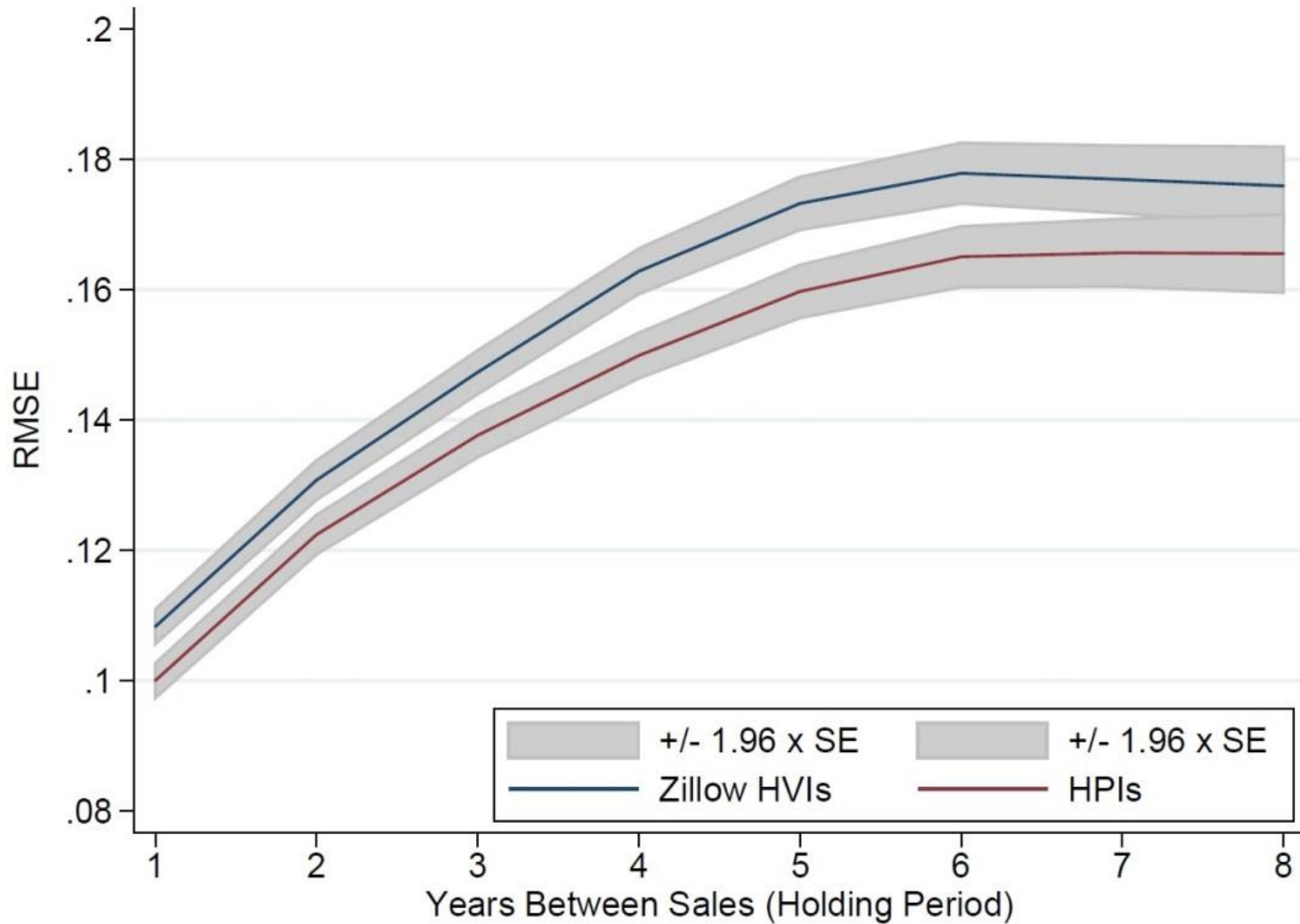
(e) Houston



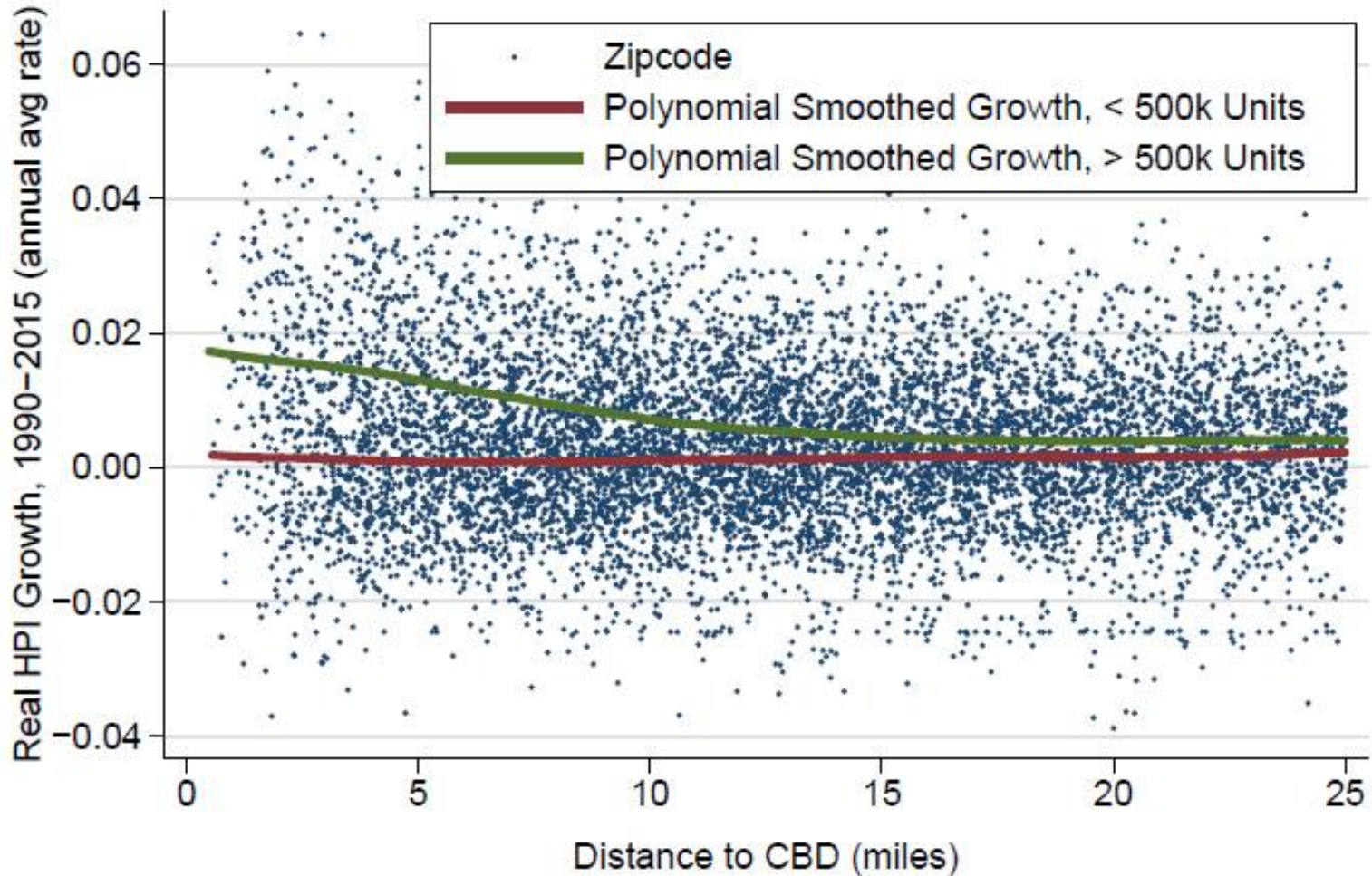
(f) Minneapolis



How do those predictions compare to Zillow?



What's an interesting long-term trend since the 1990s?

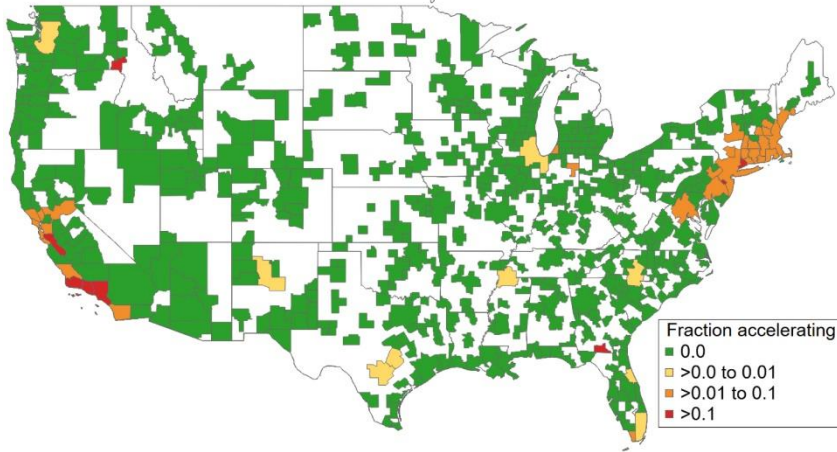


House price gradients are shifting upward again.

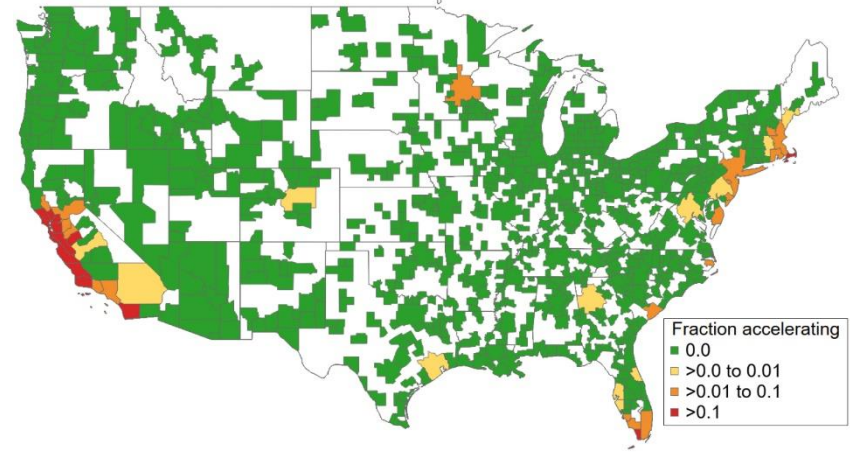
Where do major accelerations occur?



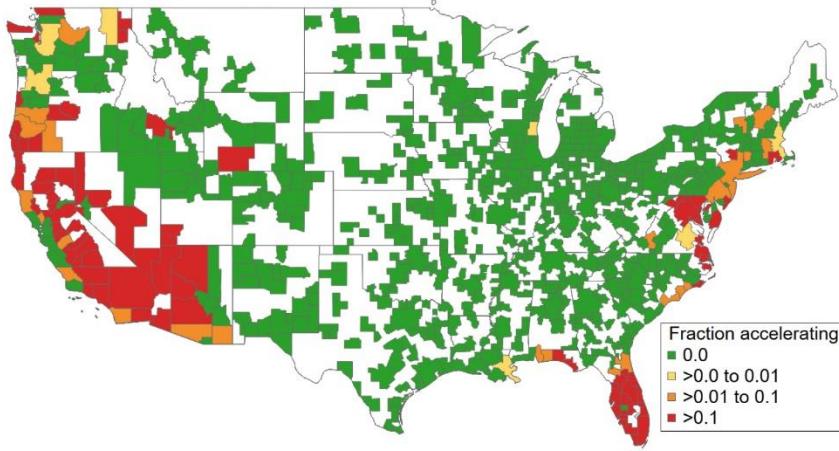
Private Equity Boom (1985-1990)



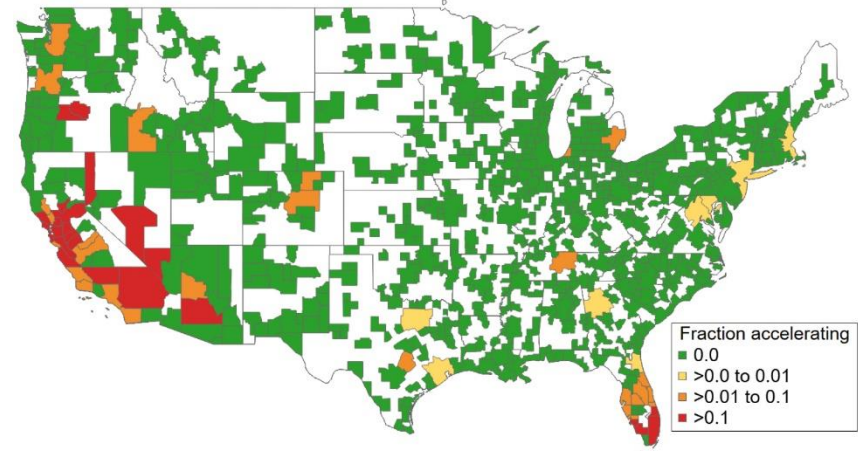
Dot Com Boom (1999-2003)



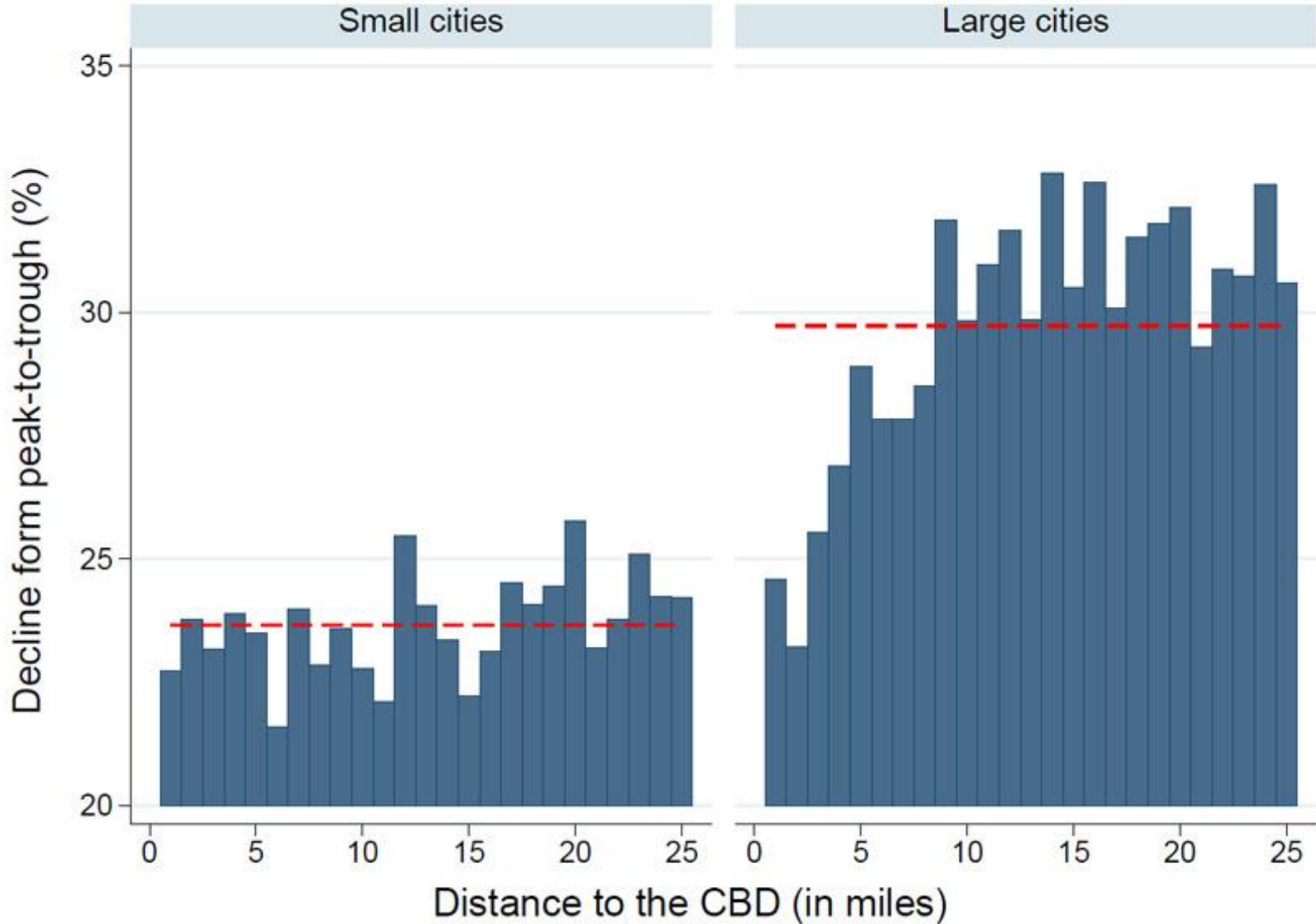
Subprime Boom (2004-2006)



Recovery & Oil Boom (2014-2015)



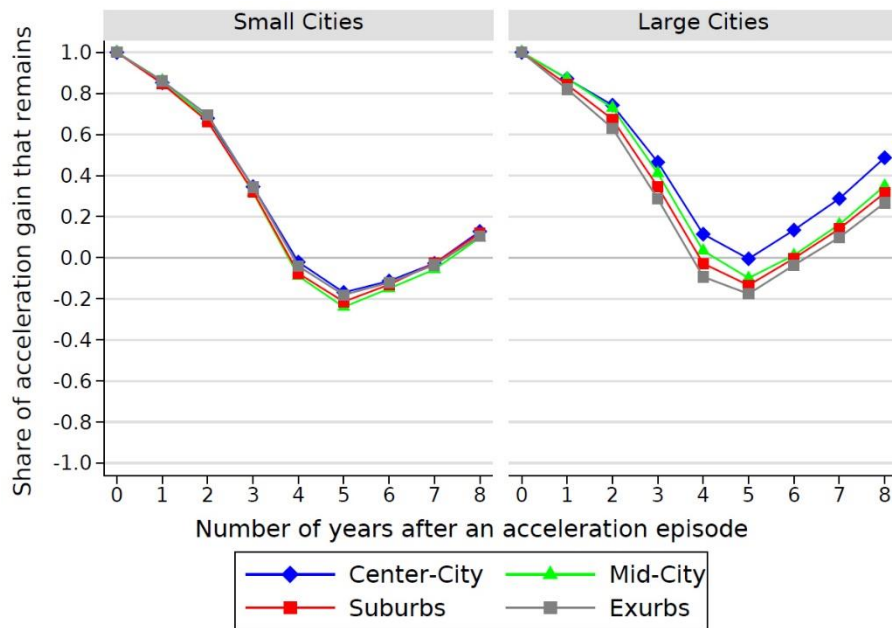
Do house prices decline the same everywhere?



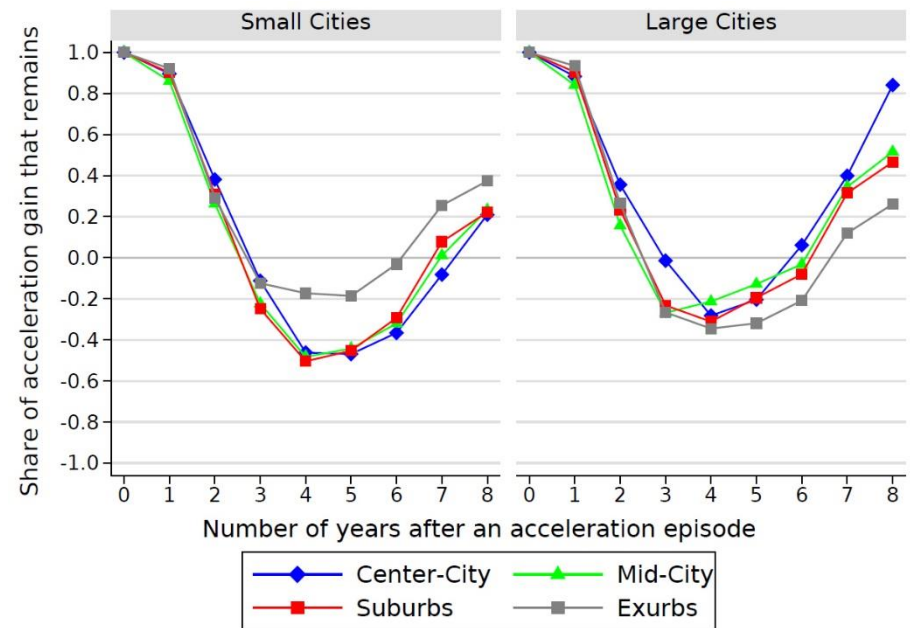
Do prices mean revert once they fall?



High regulation cities

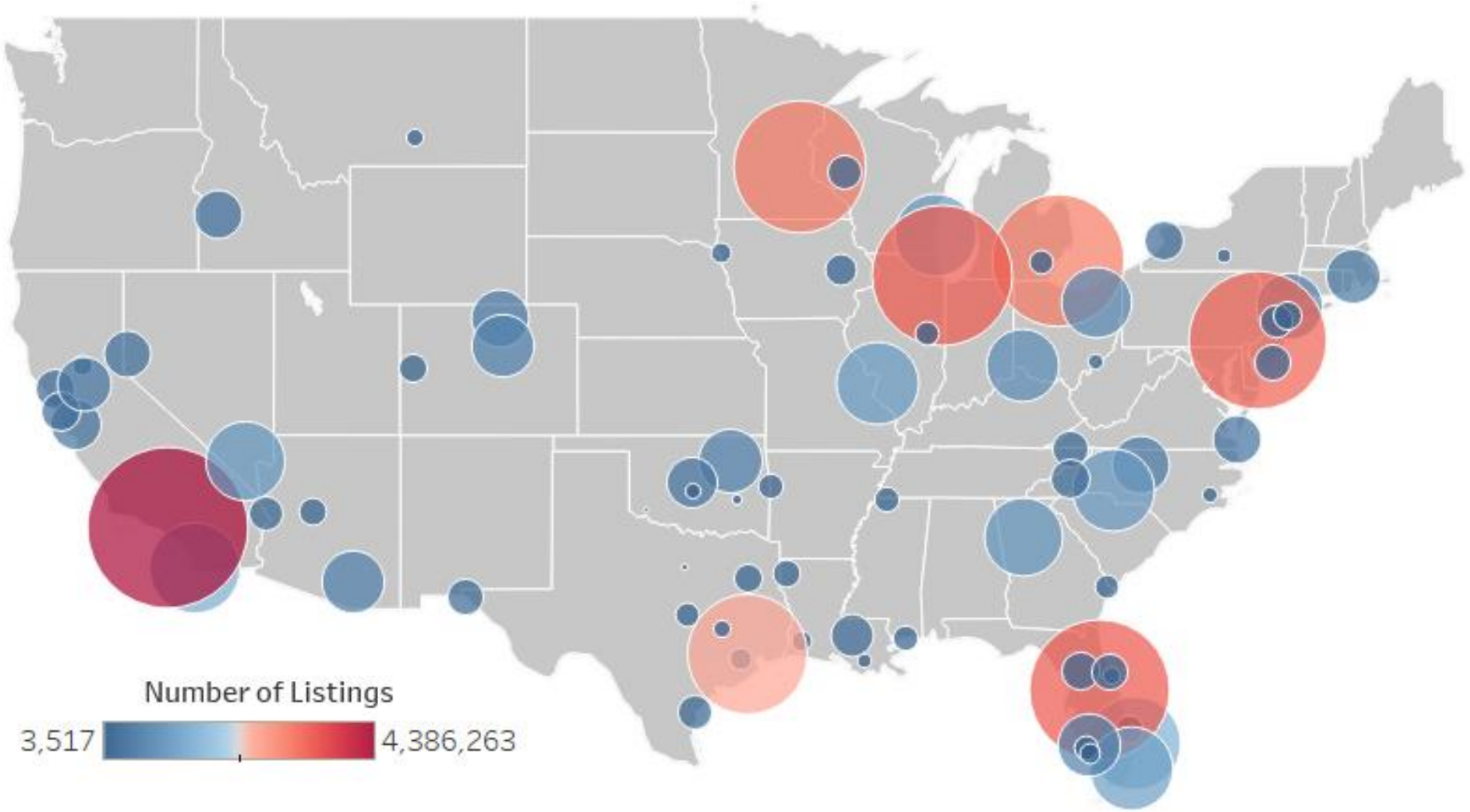


Low regulation cities



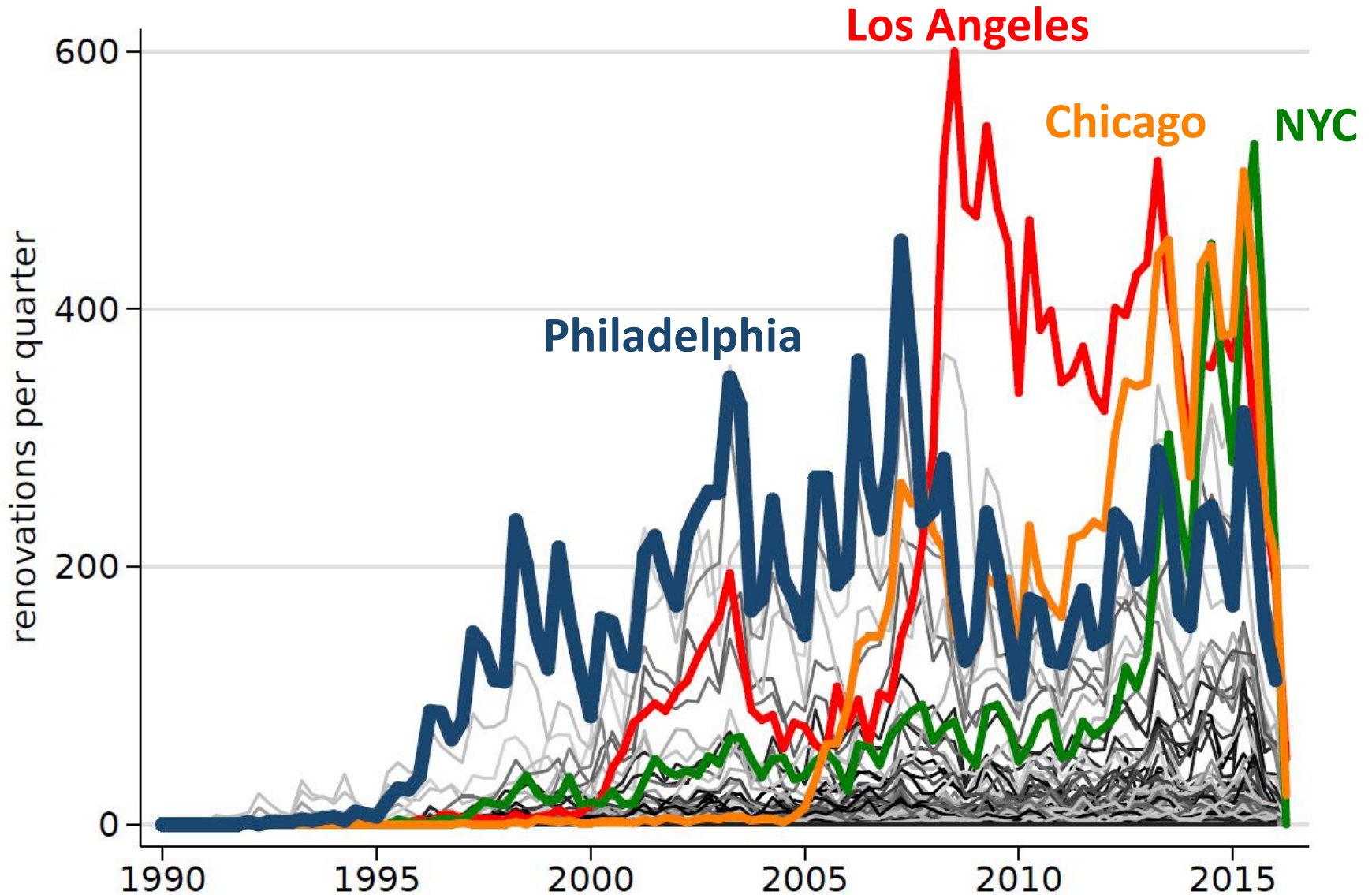
Quick growth is most sustainable in downtowns of large cities.

Shifting gears . . . let's look at data all of you create!

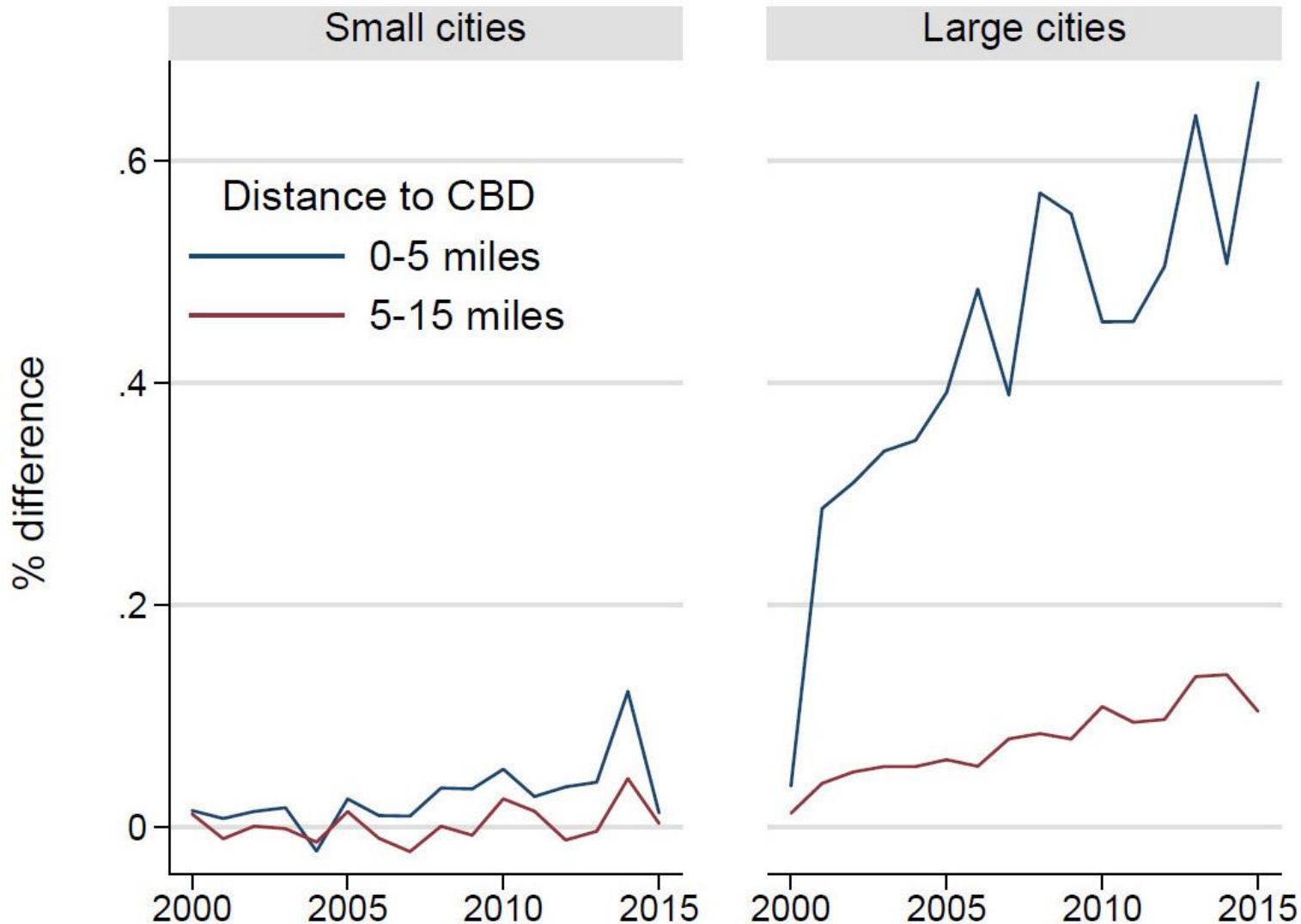


Note: MLS data are licensed from CoreLogic.

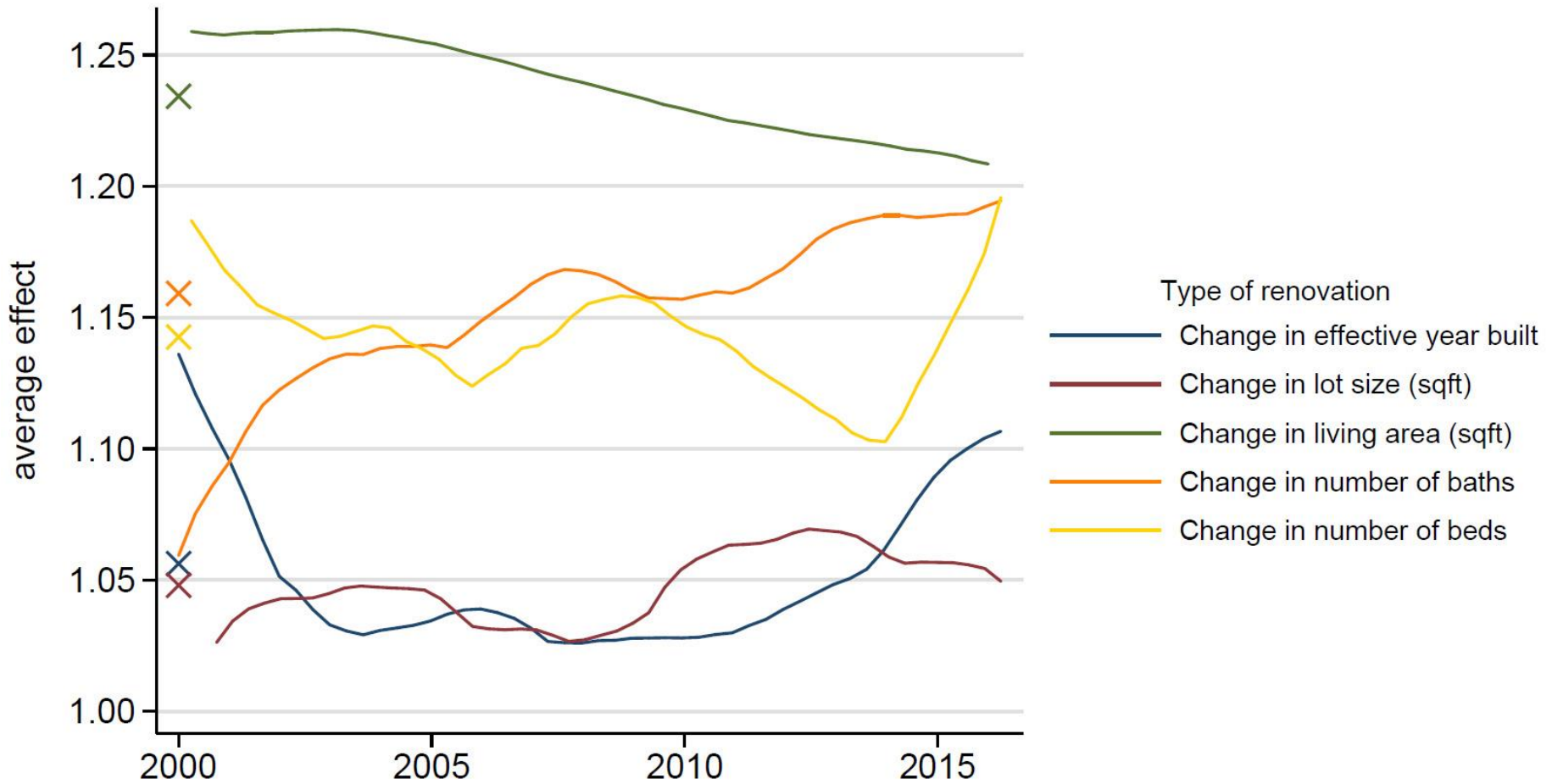
Where are the most renovated properties sold?



Where are the reno effects largest?



How do different kinds of renovations impact price?



These data have even been in the news!



The New York Times





Where can you get the data
or learn more?



www.fhfa.gov/hpi

www.fhfa.gov/papers/wp1601.aspx

www.fhfa.gov/papers/wp1602.aspx

www.fhfa.gov/papers/wp1604.aspx

www.fhfa.gov/papers/wp1702.aspx

Thanks!