Building Costs and House Prices

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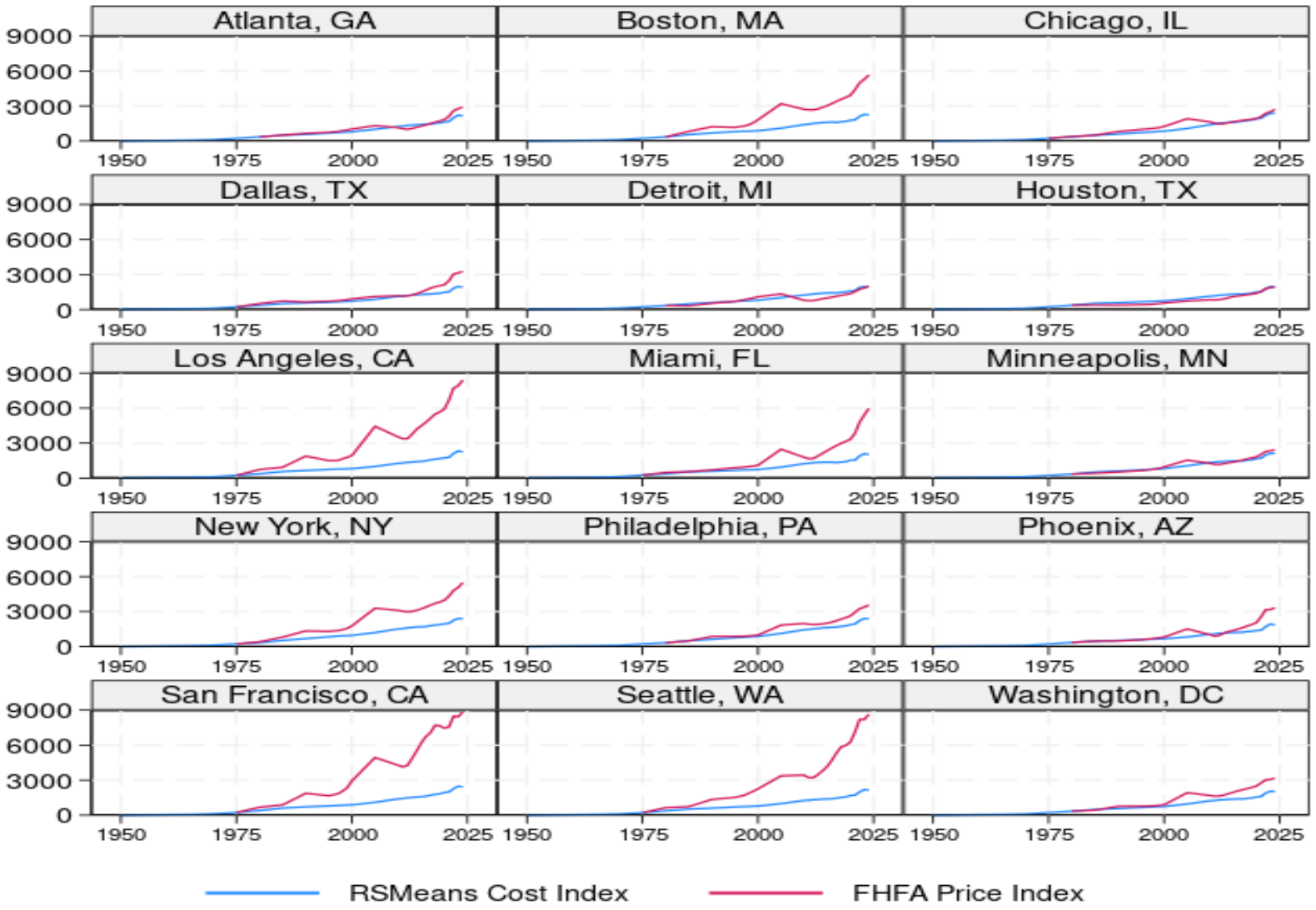
Overview

High and increasing housing prices are topic of active and sometimes heated debate

Not just in US: broadly similar patterns hold in many other countries as well

- Implied housing price-to-rent ratios in Canada are multiples of their US counterparts

Overview


Atlanta, GA
Boston, MA
Chicago, IL
Dallas, TX
Detroit, MI
Houston, TX
Los Angeles, CA
Miami, FL
Minneapolis, MN
New York, NY
Philadelphia, PA
Phoenix, AZ
San Francisco, CA
Seattle, WA
Washington, DC
9000
6000
3000
0
1950
1975
2000
2025
RSMeans Cost Index
FHFA Price Index

Overview

A natural candidate explanation for high house prices is high building costs

- (Defined as costs of actually constructing the building itself)

Building costs account for 60-70% of full cost of bringing a new house to market *in a land-unconstrained area*

Construction sector's poor productivity growth over the past several decades has further raised profile of high and rising building costs

However, divergences in price growth across metros suggest that other factors may often be in play

Measuring Building Costs

We use Housing Cost database from RSMeans, who has been reporting cost estimate data since mid-20th century

- Company says estimates compiled “through a combination of field research, industry surveys, cost modeling, and partnerships with construction professionals and suppliers”

Validity supported by extensive use in construction and building materials industries

- We also compare:
  - To US Census Houses under Construction index time series; find tight relationship
  - To Turner and Townsend data across cities; also highly correlated

Cost estimates capture the costs and margins associated with actually constructing a building, but exclude ancillary and land acquisition costs

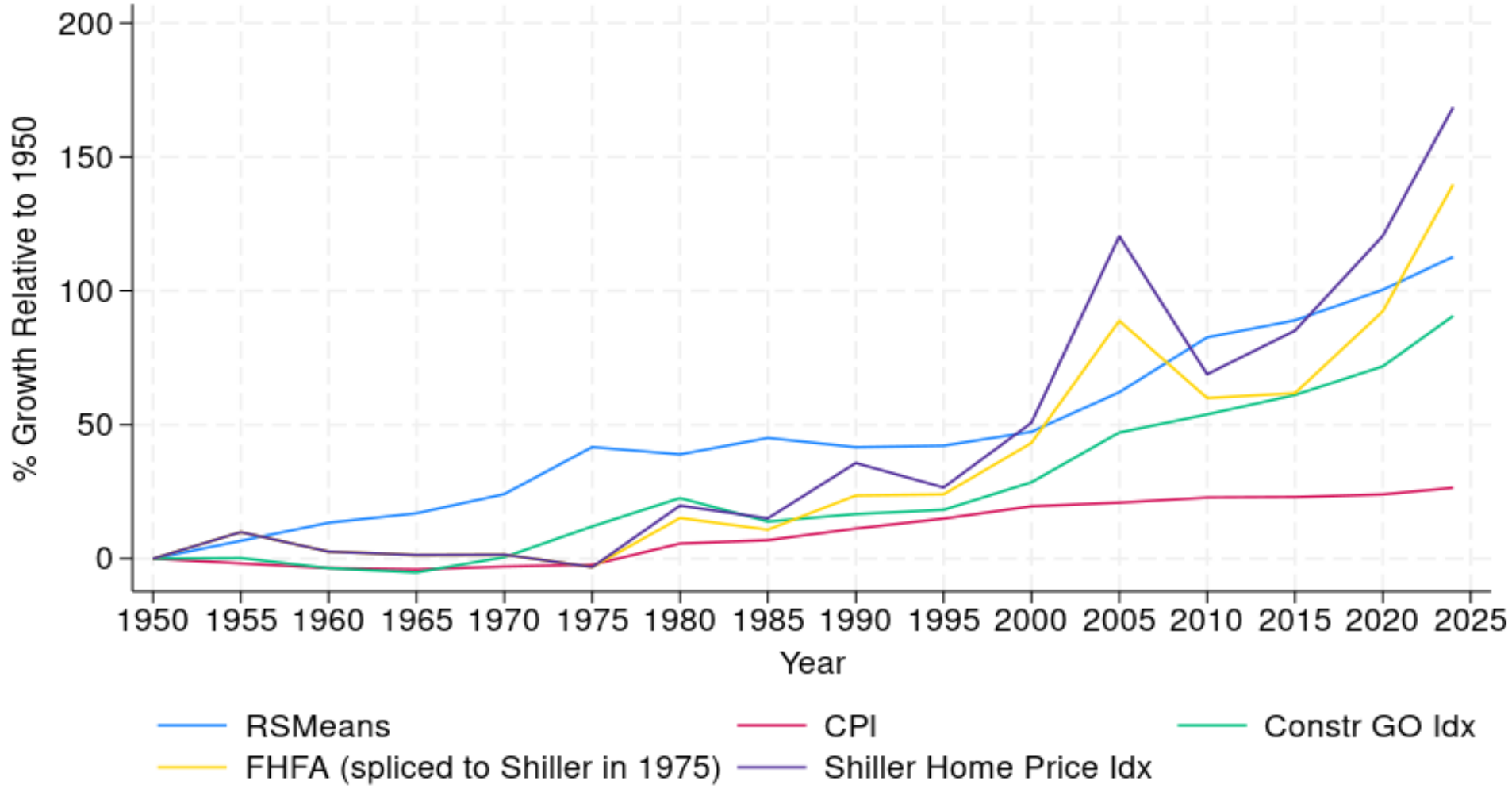
Measuring House Prices

We primarily use two sources

1. FHFA home price index (since 1975)
   - Available for all of US and for specific metros (increasing number over time)
   - Based on repeat sales or refinancing, so controls for compositional changes in average quality of houses sold

2. Zillow median house prices (for 2024)
   - Gives prices in dollars (rather than index), so we can make dollar-for-dollar comparisons between prices and costs (RSMeans city-level cost estimates) across cities

Comparison of Price Indexes since 1950 (Relative to GDP Deflator)



Cost vs. Price Growth in a City Panel: Summary Statistics (figures are compound annual growth rates)

Period	No. of Cities	RSMeans Average	RSMeans Std Deviation	FHFA Average	FHFA Std Deviation
1975-80	13	6.84	1.03	13.26	4.38
1980-85	128	5.83	0.78	3.90	3.12
1985-90	155	2.31	0.48	4.76	4.17
1990-95	174	2.24	0.53	3.00	2.81
1995-00	178	2.37	0.61	4.04	1.77
2000-05	178	4.21	0.47	7.15	4.20
2005-10	178	4.55	0.51	-0.61	3.49
2010-15	178	2.68	0.59	1.45	2.06
2015-20	178	2.68	0.58	4.78	1.89
2020-24	178	6.27	0.52	10.11	2.01

Fraction of Price Growth across Metros Explained by Cost Growth

Period	No. of Cities	% of Price Growth Explained
1975-80	13	64.1
1980-85	128	18.2
1985-90	155	32.9
1990-95	174	11.0
1995-00	178	0.1
2000-05	178	0.9
2005-10	178	1.5
2010-15	178	3.5
2015-20	178	1.1
2020-24	178	2.0

Cities with Biggest Divergence between Price and Cost Growth

1980-85		1985-90	
City	%ΔP – %ΔC	City	%ΔP – %ΔC
Boston, MA	7.7	Honolulu, HI	14.1
Worcester, MA	6.9	San Francisco, CA	12.2
Springfield, MA	5.3	Los Angeles, CA	11.4
New York, NY	4.9	Oxnard, CA	10.9
Newark, NJ	3.3	Anaheim, CA	9.8
Eugene, OR	-6.7	San Antonio, TX	-4.9
Detroit, MI	-6.8	Oklahoma City, OK	-5.5
Davenport, IA	-6.9	Odessa, TX	-6.3
Waterloo, IA	-7.9	Anchorage, AK	-7.0
Peoria, IL	-8.7	Austin, TX	-7.1

Cities with Biggest Divergence between Price and Cost Growth

2000-05		2005-10	
City	%ΔP – %ΔC	City	%ΔP – %ΔC
Santa Barbara, CA	14.4	Odessa, TX	2.7
Riverside, CA	14.3	Austin, TX	-0.5
Fresno, CA	14.1	Beaumont, TX	-0.6
Los Angeles, CA	13.5	El Paso, TX	-0.8
Bakersfield, CA	13.4	Huntsville, AL	-0.8
Decatur, IL	-1.2	Riverside, CA	-13.8
Charleston, WV	-1.4	Reno, NV	-14.5
Springfield, IL	-1.5	Vallejo, CA	-16.2
Memphis, TN	-1.8	Las Vegas, NV	-17.9
Sioux City, IA	-3.0	Stockton, CA	-17.9

Cities with Biggest Divergence between Price and Cost Growth

2015-20		2020-24	
City	%ΔP – %ΔC	City	%ΔP – %ΔC
Boise, ID	8.9	Miami, FL	8.6
Spokane, WA	7.1	Knoxville, TN	8.1
Tacoma, WA	7.0	Camden, NJ	8.0
Tampa, FL	6.5	Savannah, GA	7.5
Las Vegas, NV	6.1	Lewiston, ME	7.3
Decatur, IL	-1.1	Baton Rouge, LA	-1.2
Shreveport, LA	-1.1	Shreveport, LA	-1.8
Lawton, OK	-1.3	New Orleans, LA	-1.9
Springfield, IL	-1.5	Odessa, TX	-2.5
Peoria, IL	-1.5	Lake Charles, LA	-2.8

Cumulative Price – Cost Differences Across Cities, 1980-2024

Despite average growth rate patterns, 33 of the 128 cities saw faster housing cost growth than price growth

Still, most saw more price growth, and some of those very much so

Price-cost divergence really starts getting skewed after 1990

- Peak skewness in 2005, but 2015 and 2024 also skewed
- For example, 90th percentile cumulative price-cost growth ratio by 2005 was 2.2 (i.e., prices in city had grown 2.2X as much as costs since 1980)
- Same value was 1.9 in 2024

Material vs. Installation Costs for Cities

Since 2007, RSMeans breaks out costs into “materials” and “installation” components

Materials: e.g., concrete, lumber, drywall, plumbing fixtures

Installation: costs tied to the assembly of materials into finished buildings, including some kinds of building-related overhead but not “soft costs” like legal and engineering fees, financing costs, and land acquisition

- Think of as labor costs

Material vs. Installation Costs for Cities

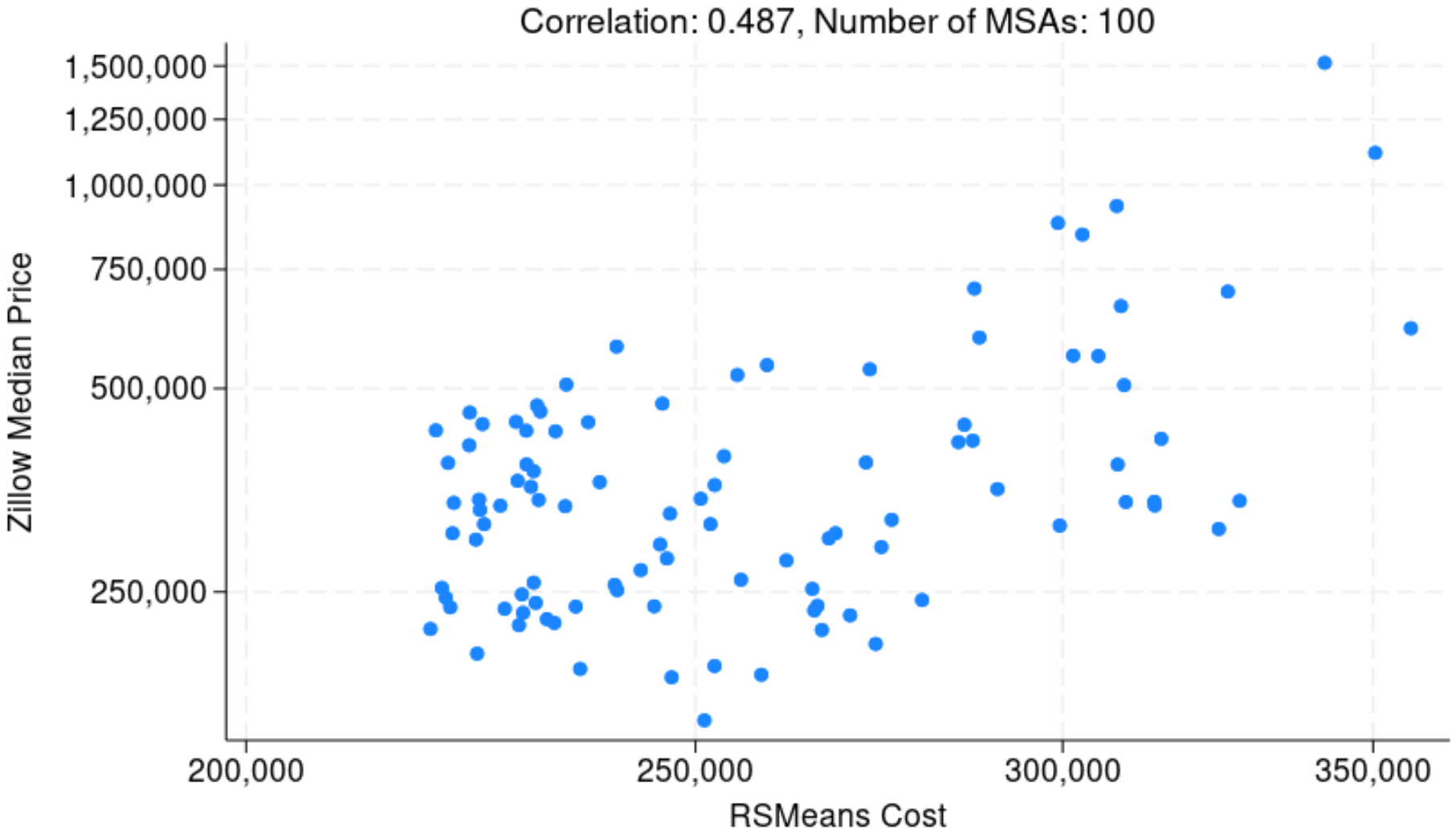
Cost components compound annual growth rates:

	Total Cost	Materials	Installation
2010-15	2.35	1.99	2.83
2015-20	2.81	3.30	2.16
2020-24	5.98	8.05	2.95

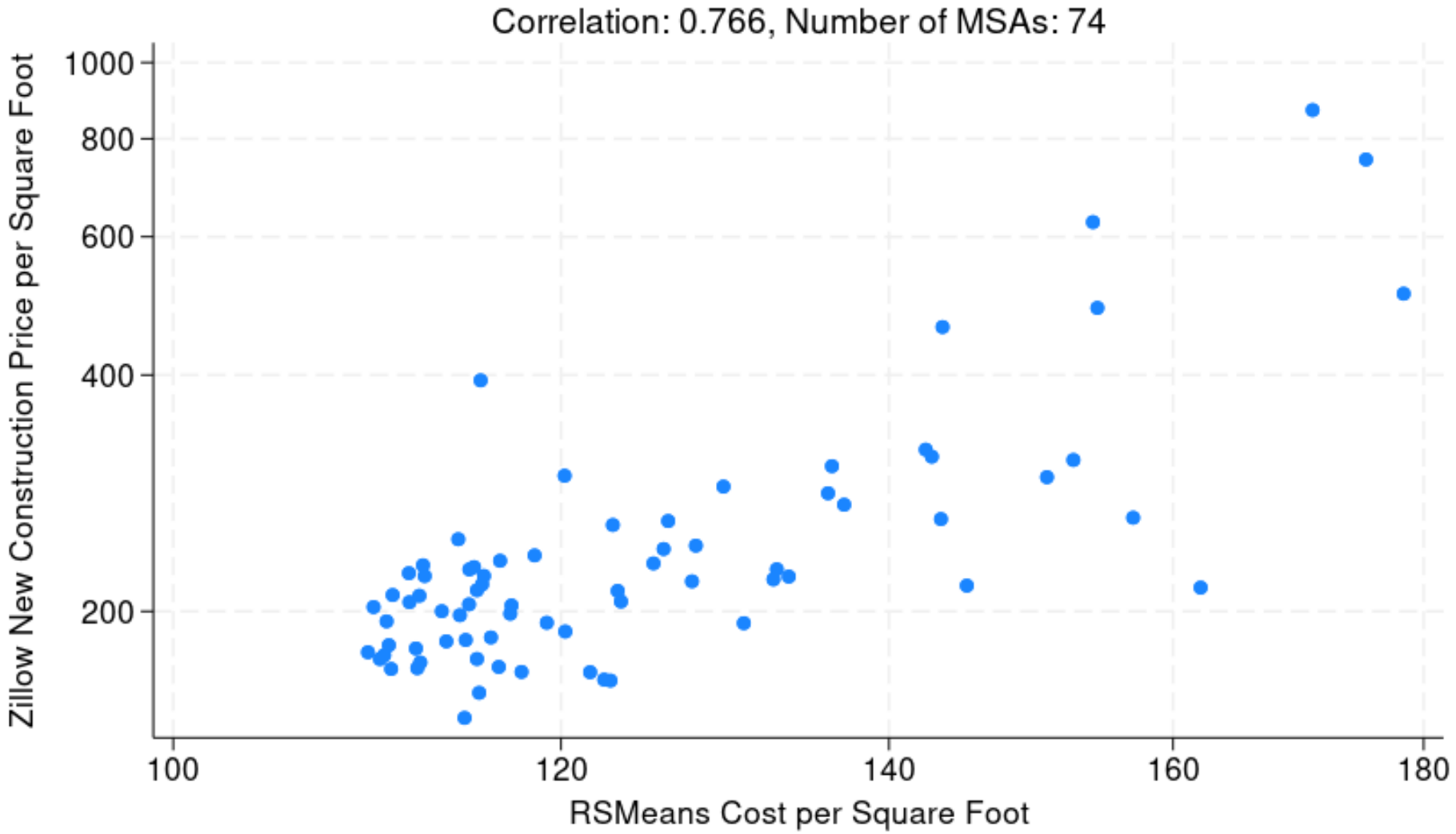
Also, installation cost growth much more variable across cities than material cost growth (6X more before Covid and 2X more after)

- Likely reflects fact that materials are more mobile than labor

Price vs. Cost *Levels* across Cities, 2024



Price vs. Cost *Levels* across Cities, 2024 (now per ft^2 for new construction)



Highest Price vs. Cost Cities, 2024

City	Price above Expected (%)	Price Rank (of 74)	Cost Rank (of 74)
Miami, FL	98.2	7	46
San Jose, CA	88.5	1	3
Los Angeles, CA	69.5	3	7
San Francisco, CA	54.5	2	2
Seattle, WA	45.2	6	11
Baton Rouge, LA	-27.3	71	32
Greenville, SC	-27.9	72	31
Philadelphia, PA	-31.6	17	5
Minneapolis, MN	-33.7	38	10
Chicago, IL	-48.0	39	4

Conclusion

House price growth has increasingly decoupled from construction cost growth, both in the aggregate and across cities

More connection in price and cost levels across cities, though still as much price variation explained by things other than costs

A lot of the decoupling is coming from very high-price metros

Likely that much of the non-cost price coming from regulatory constraints