

For ABC Real Estate Investment Firm

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Investment Strategy Plan

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2021



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Presentation Agenda

Key topics for discussion

01	02	03	04	05
Investment Profile	Data Introduction	Data Filtering	Findings	Future Work

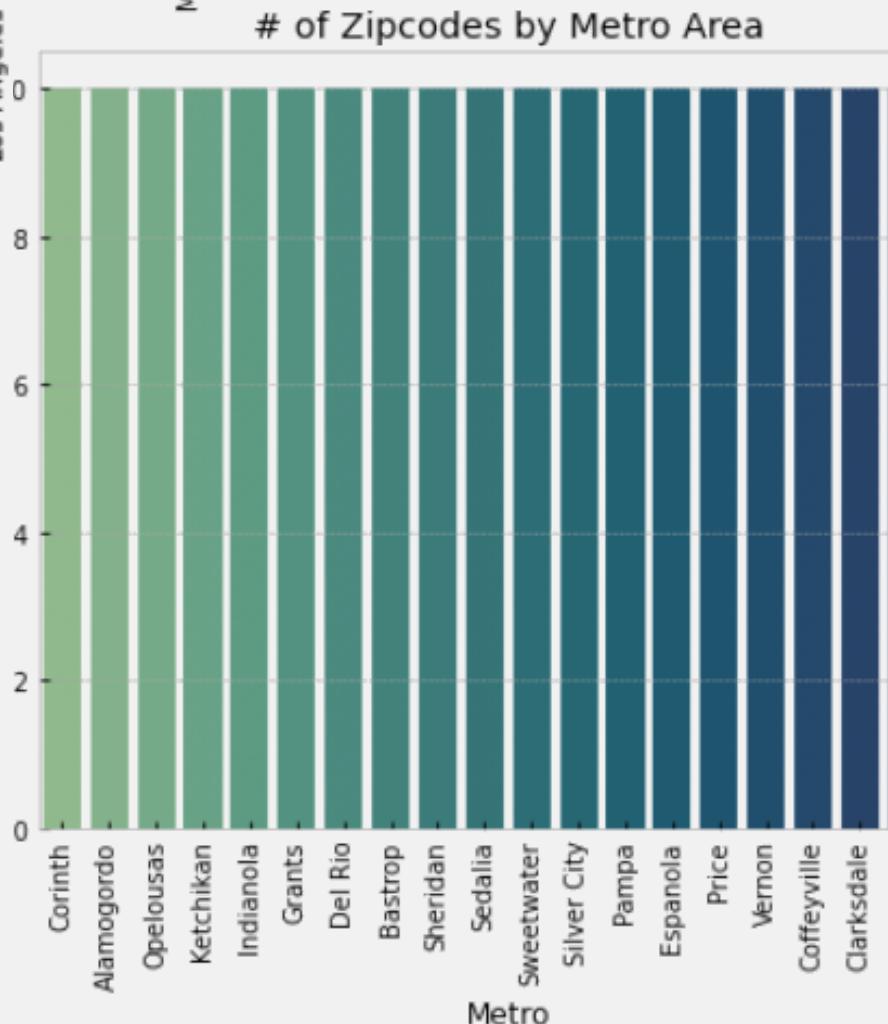
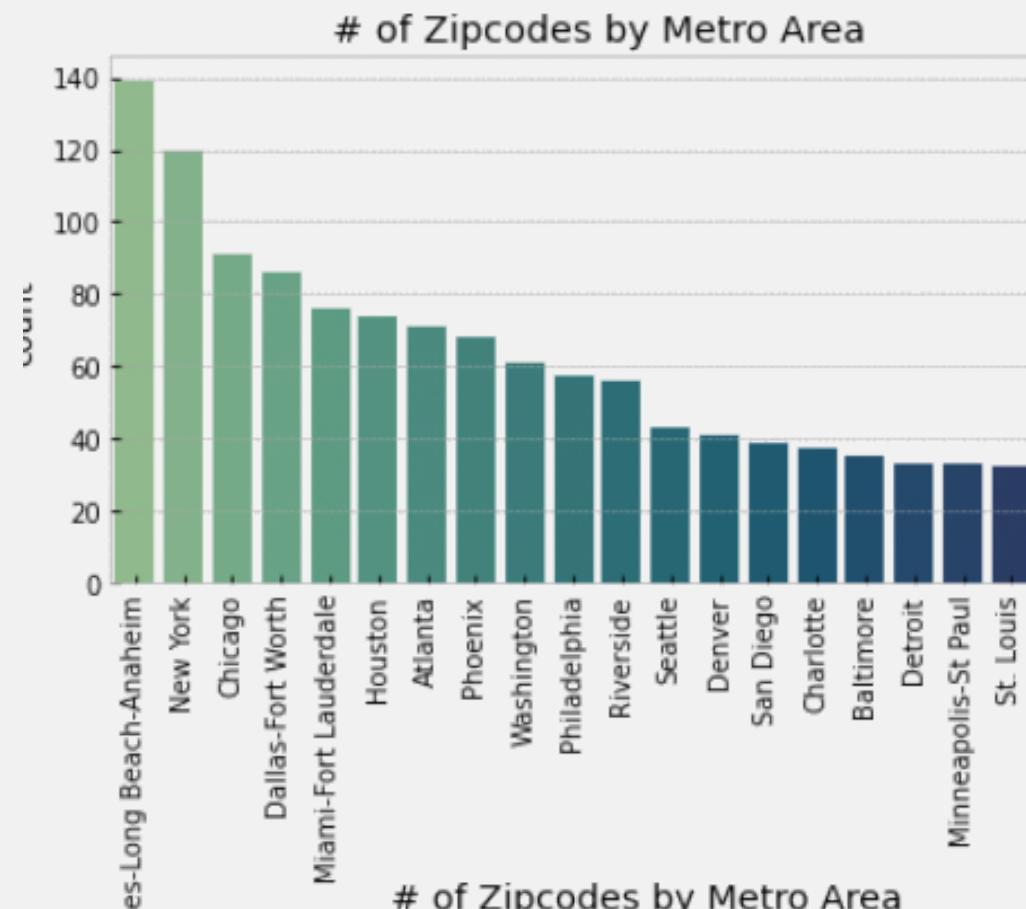
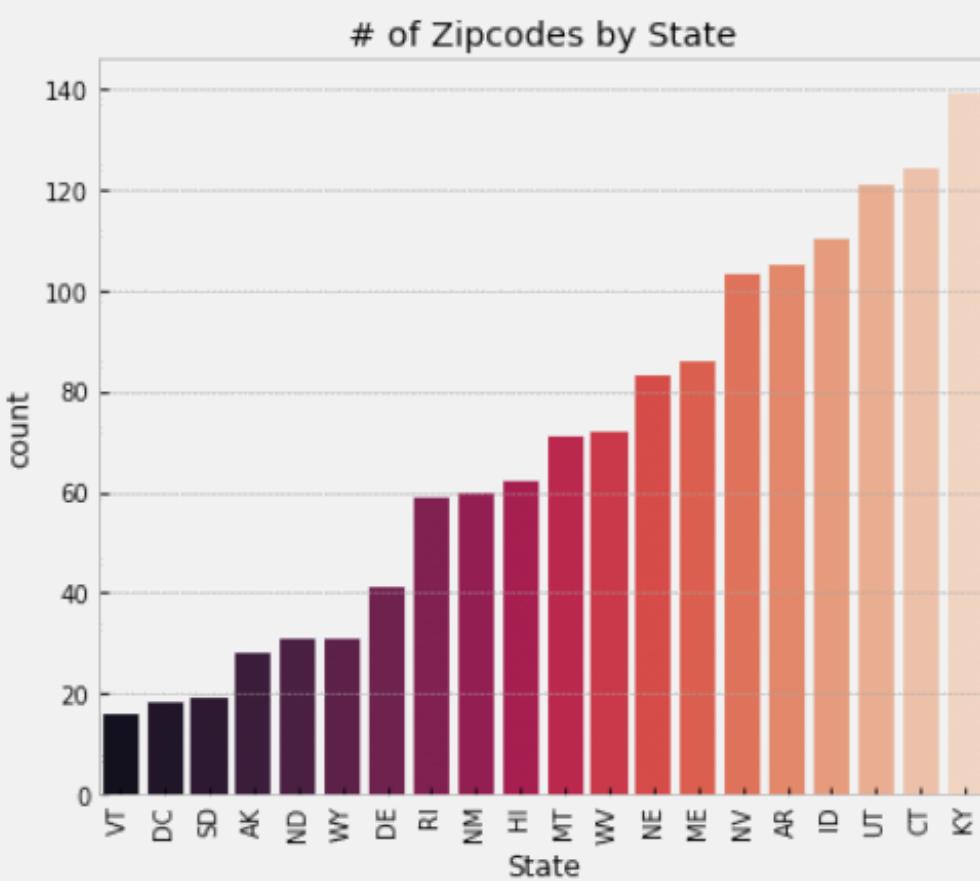
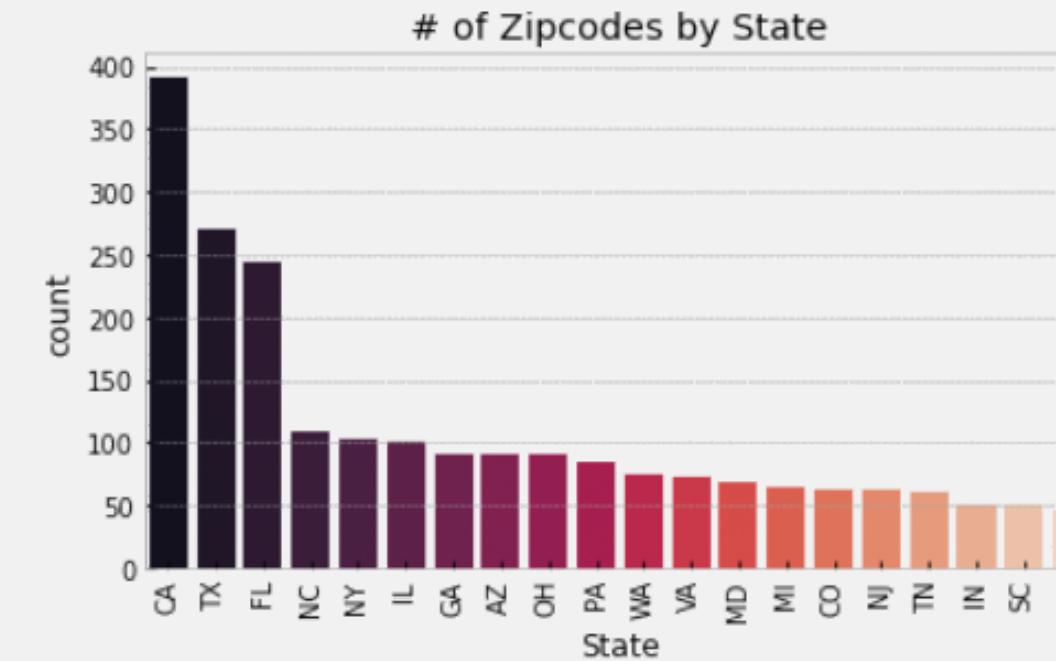
Summary of Investment Profile

- no restrictions on any geographic location
- no rural regions, must be in/near a metropolitan area
- maximize current low mortgage rate environment
(no jumbo loans)
- stable markets with no huge price fluctuations
- zipcodes that haven't experienced a significant value appreciation within last 2 years



Overview: Data Introduction

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14,723

of zipcodes represented in the data

CA, TX, FL

Top 3 states with highest # of zipcodes represented in the data

VT, (DC), SD, AK

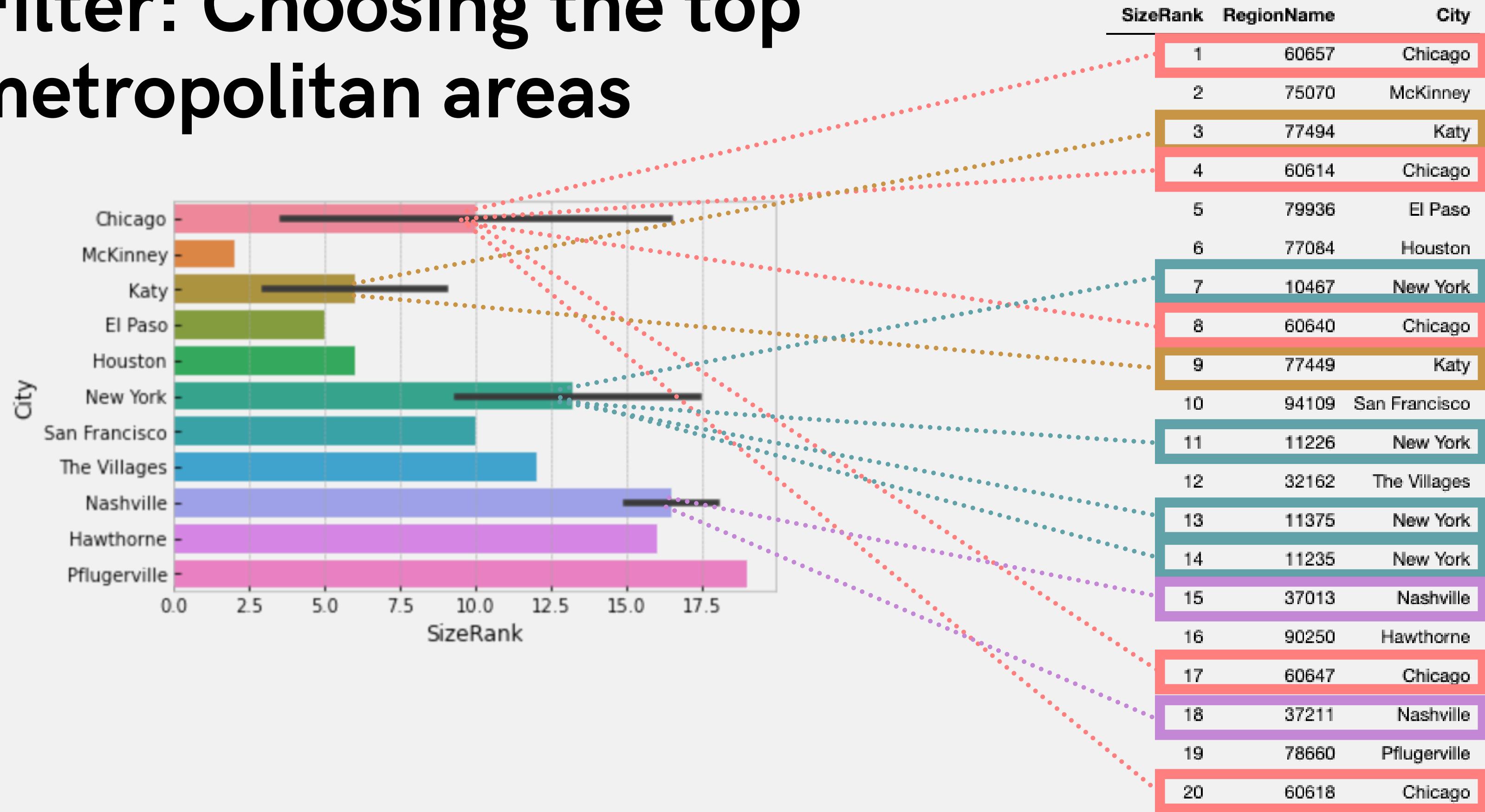
Top 3 states with lowest # of zipcodes represented in the data

175

of zipcodes in the data from the 'Los Angeles-Long Beach-Anaheim' metro area

04

Filter: Choosing the top metropolitan areas

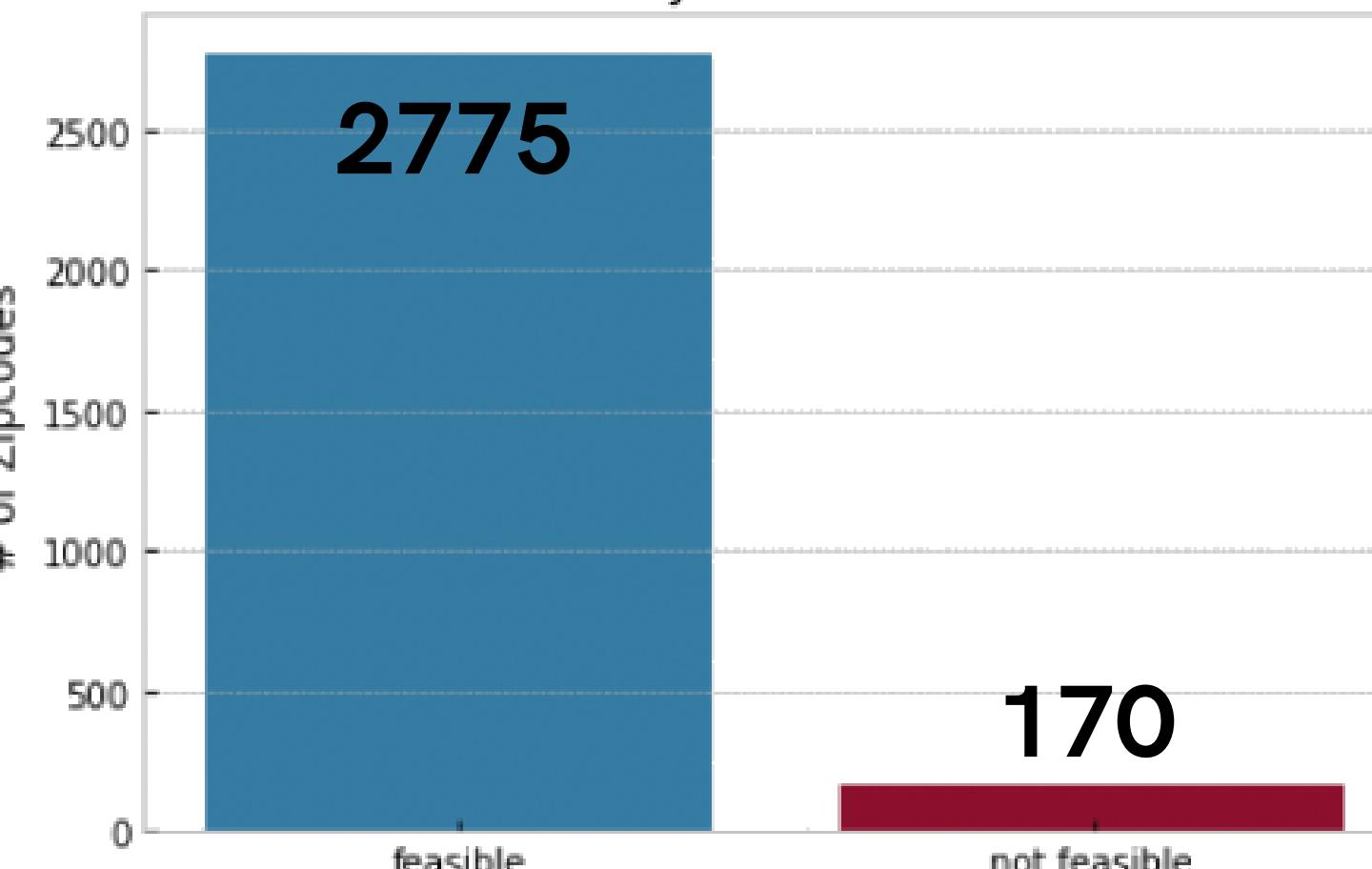


Filter: Maximizing low interest rates

**2021 Maximum Conforming
Loan Limit:
\$548,250**

*with exceptions

Feasibility of Loan Amount



State/Territory	County	Limit
Alaska	All counties	\$822,375
California	Solano County	\$550,850
California	El Dorado County, Placer County, Sacramento County, Yolo County	\$598,000
California	Santa Barbara County	\$650,100
California	San Luis Obispo County	\$701,500
California	Sonoma County	\$707,250
California	Montarey County, Ventura County	\$739,450
California	San Diego County	\$753,250
California	Napa County	\$816,500
California	Alameda County, Contra Costa County, Los Angeles County, Marin County, Orange County, San Benito County, San Francisco County, San Mateo County, Santa Clara County, Santa Cruz County	\$822,375
Colorado	Adams County, Arapahoe County, Broomfield County, Clear Creek County, Denver County, Douglas County, Elbert County, Gilpin County, Jefferson County, Park County	\$596,850
Colorado	Lake County	\$25,500
Colorado	San Miguel County	\$49,750
Colorado	Boulder County	\$654,350
Colorado	Gordet County	\$678,500
Colorado	Garfield County, Pitkin County	\$765,800
Colorado	Eagle County	\$822,250
Colorado	Summit County	\$822,235
Connecticut	Fairfield County	\$601,450
Florida	Monroe County	\$608,350
Guam	Guam	\$822,375
Hawaii	Hawaii County, Honolulu County, Kalawao County, Kauai County, Maui County	\$822,375
Idaho	Blaine County, Camas County, Lincoln County	\$625,500
Idaho	Teton County	\$822,375
Maryland	Calvert County, Charles County, Frederick County, Montgomery County, Prince George's County	\$822,375

EXCEPTIONS

Filter: Stable markets & price fluctuations

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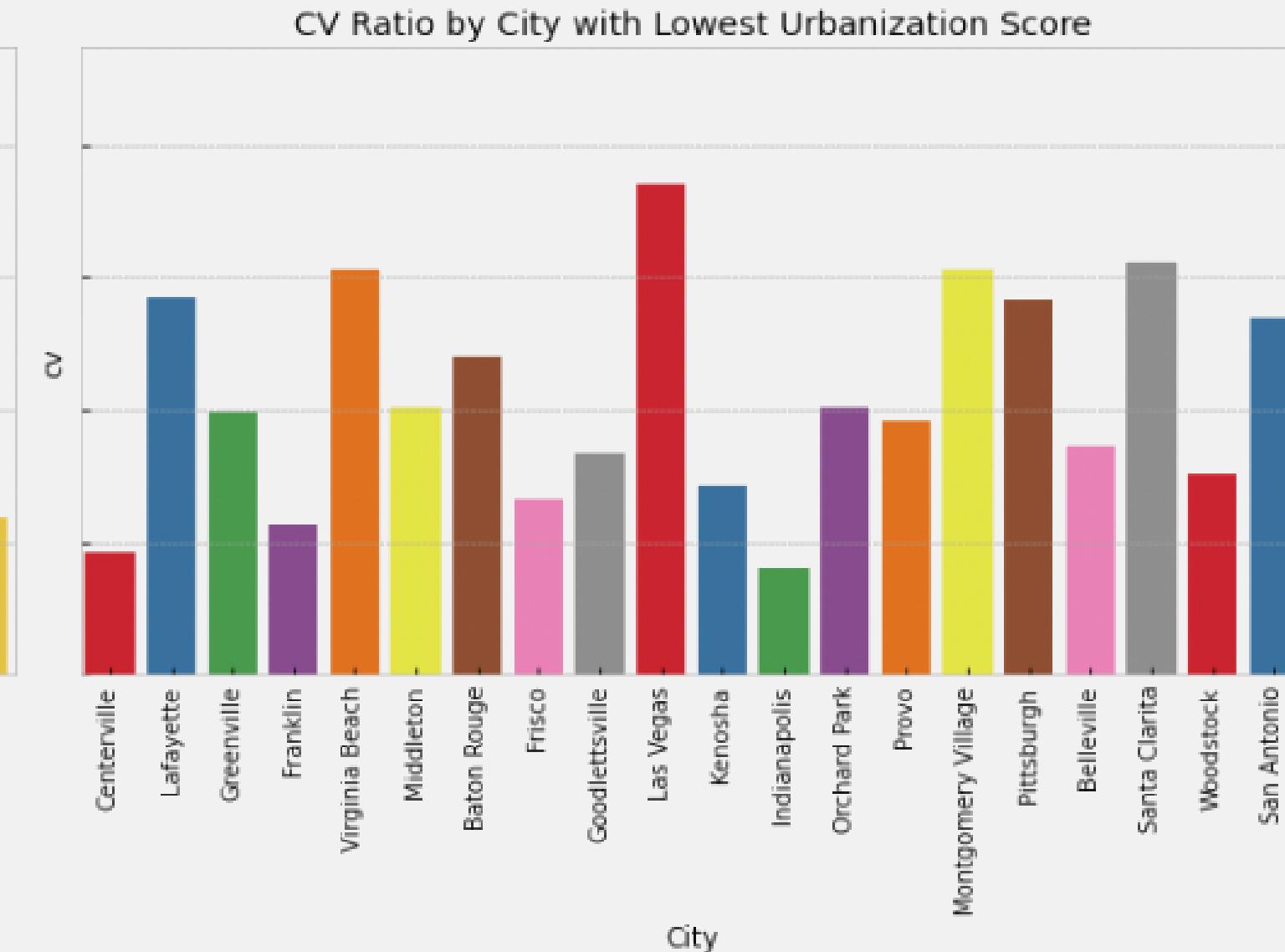
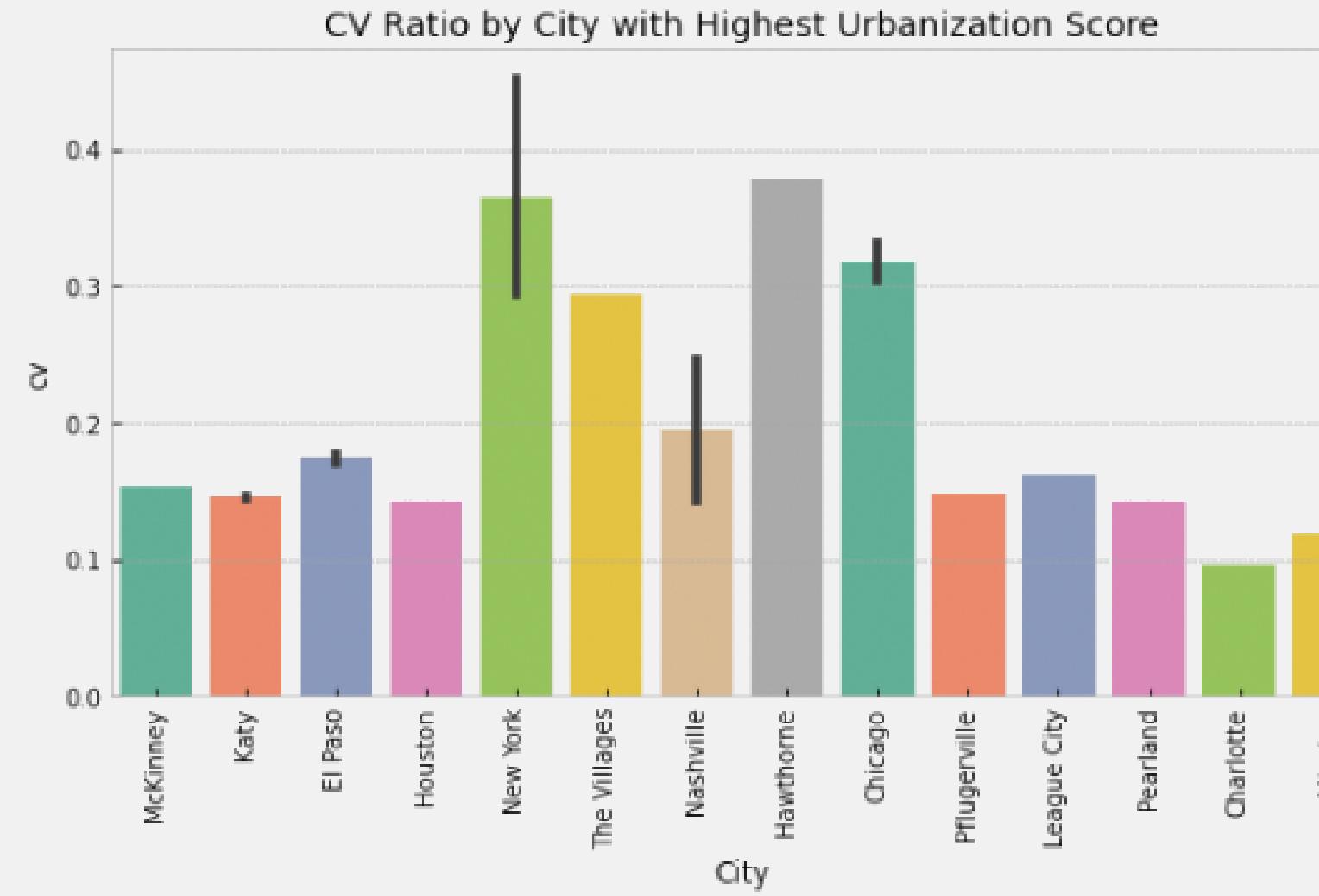
CV ratio:
standard deviation
mean

(measures volatility of data)

not that different

Average CV ratio of top 20 urbanized zipcodes: 0.22

Average CV ratio of bottom 20 urbanized zipcodes: 0.211



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Filter: Appreciation? CV Ratio?

Average appreciation with highest CV ratio: 0.153

Average appreciation with lowest CV ratio: 0.116

Average CV ratio with highest appreciation: 0.145

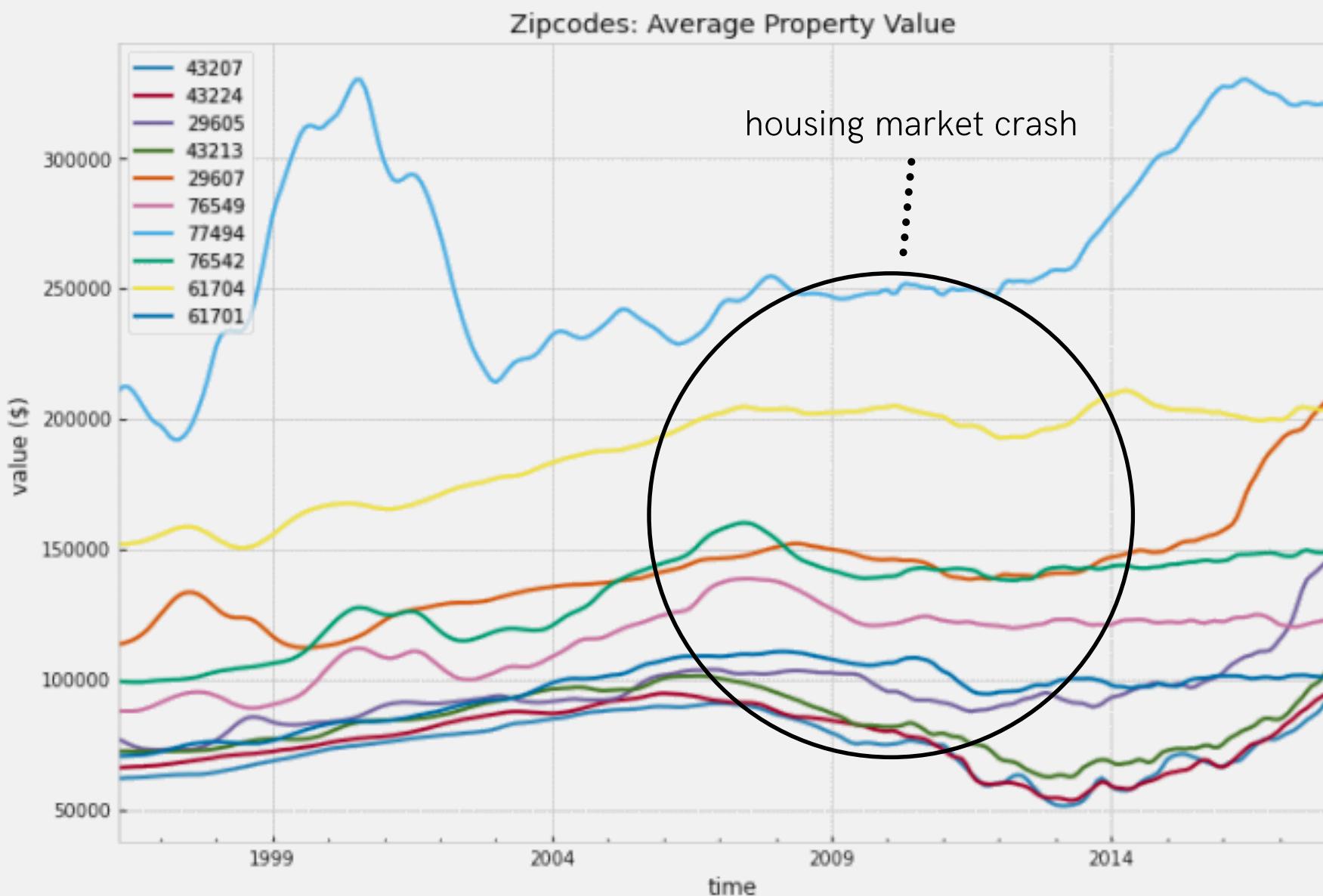
Average CV ratio with lowest appreciation: 0.121

*over last 2 years

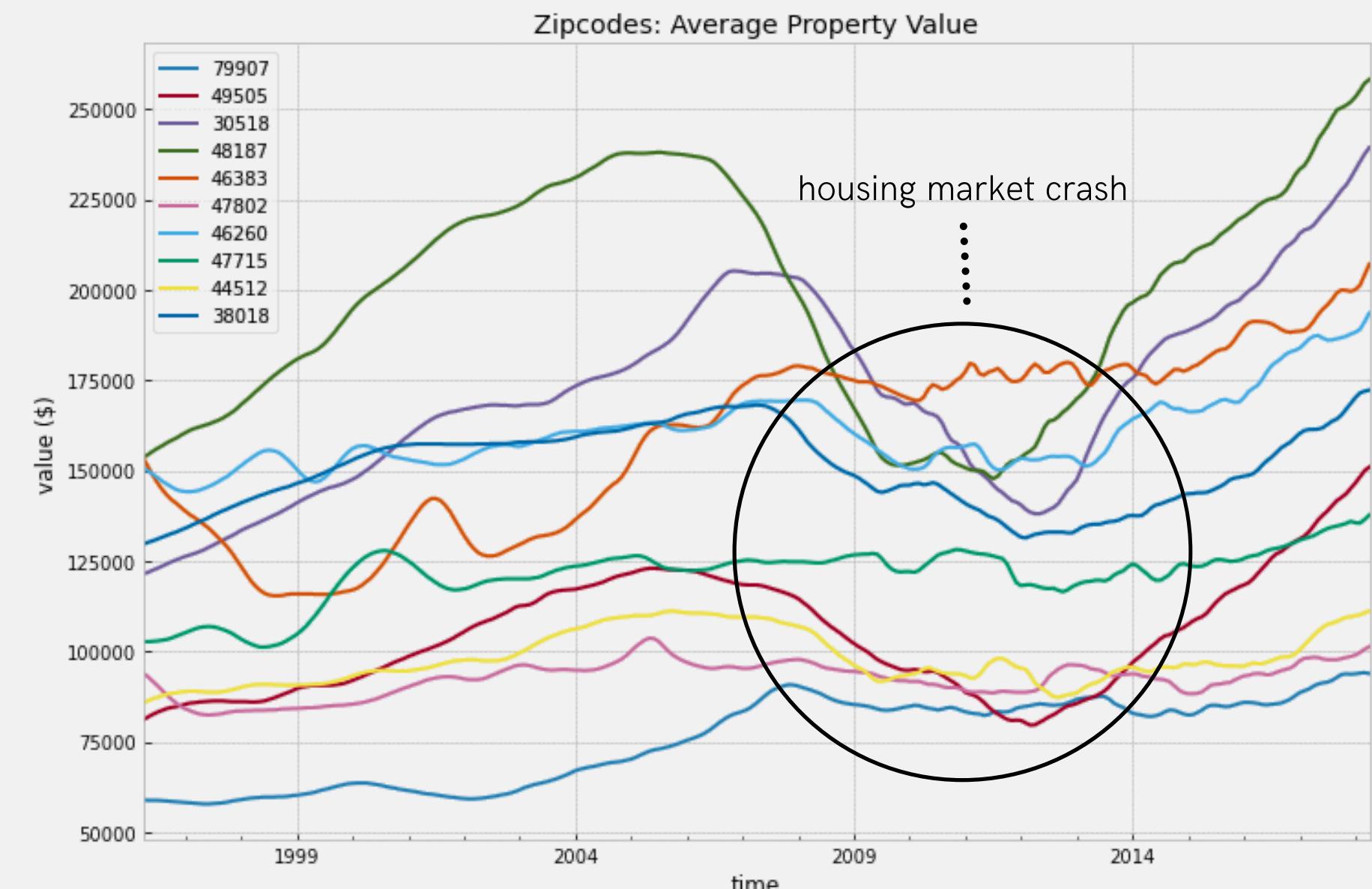
Filter: Top 5/Bottom 5

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Zipcodes Sorted By Appreciation Value



Zipcodes Sorted By CV Ratio



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Findings

Zipcodes Based On CV Ratio

	79907	49505	30518	48187	46383	47802	46260	47715	44512	38018
city, state	El Paso, TX	Grand Rapids, MI	Buford, GA	Canton, MI	Valparaiso, IN	Terre Haute, IN	Indianapolis, IN	Evansville, IN	Boardman, OH	Memphis, TN
initial investment	\$21,860	\$35,153	\$55,732	\$60,109	\$48,213	\$23,583	\$45,070	\$32,057	\$25,887	\$40,111
prediction	6.0%	45.39%	-10.29%	15.27%	8.14%	-7.55%	8.74%	6.06%	-5.62%	12.37%
best case scenario	23.37%	95.11%	19.23%	49.65%	28.9%	2.61%	24.96%	22.52%	10.44%	34.6%
worst case scenario	-11.37%	-4.34%	-39.8%	-19.11%	-12.62%	-17.71%	-7.47%	-10.4%	-21.68%	-9.85%

Blue: 5 Highest Price
Forecasted Zipcodes
(regardless of sorting method)

Zipcodes Based On Appreciation Value

	43207	43224	29605	43213	29607	76549	77494	76542	61704	61701
city, state	Columbus, OH	Columbus, OH	Greenville, SC	Whitehall, OH	Greenville, SC	Killeen, TX	Katy, TX	Killeen, TX	Bloomington, IL	Bloomington, IL
initial investment	\$22,861	\$22,838	\$34,548	\$24,840	\$50,611	\$28,821	\$76,801	\$34,524	\$47,049	\$23,839
prediction	10.08%	17.09%	72.19%	13.6%	16.85%	5.06%	9.76%	2.11%	2.02%	0.01%
best case scenario	38.1%	55.8%	117.19%	49.87%	41.87%	35.52%	48.99%	28.97%	16.28%	18.22%
worst case scenario	-17.94%	-21.61%	27.19%	-22.67%	-8.18%	-25.39%	-29.46%	-24.75%	-12.23%	-18.19%

+ Findings

Zipcodes Sorted By Delta of
95% Confidence Interval

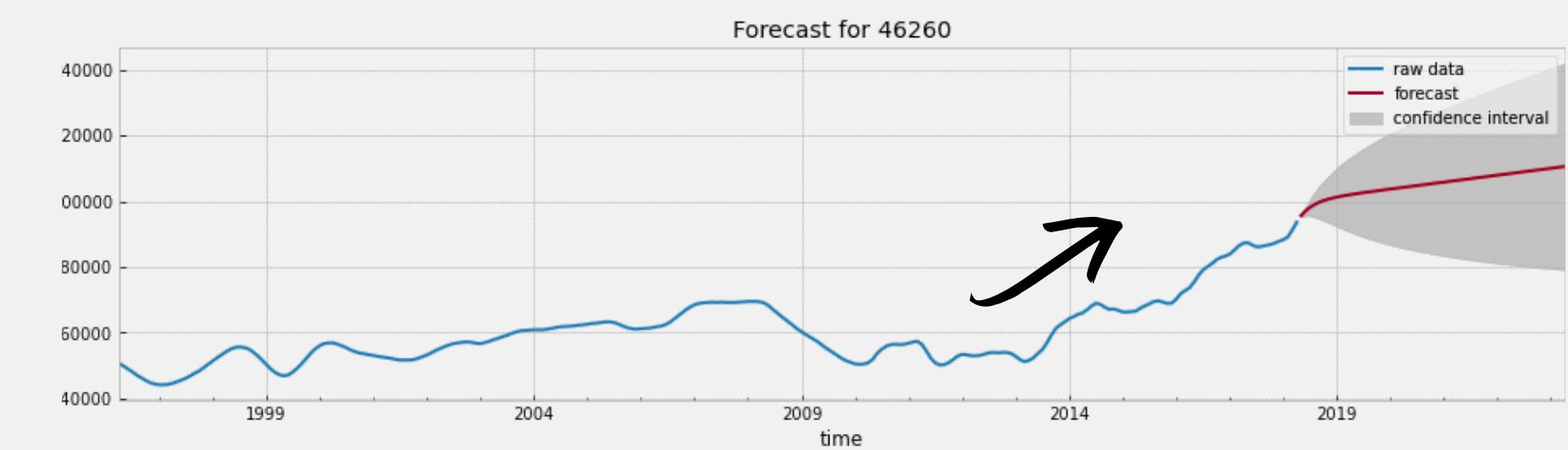
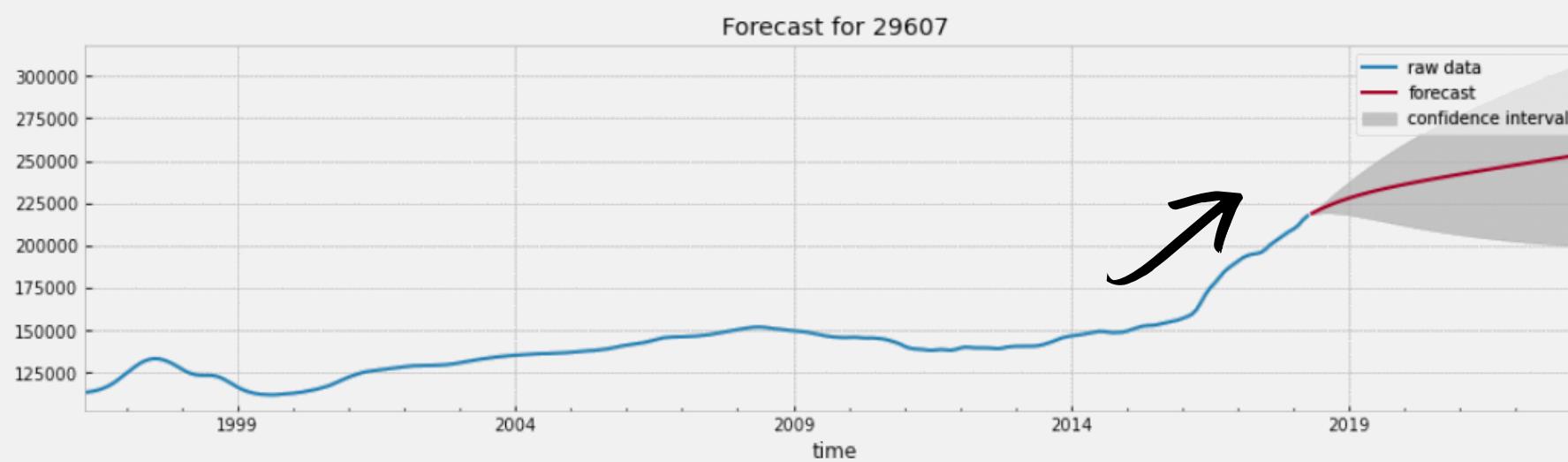
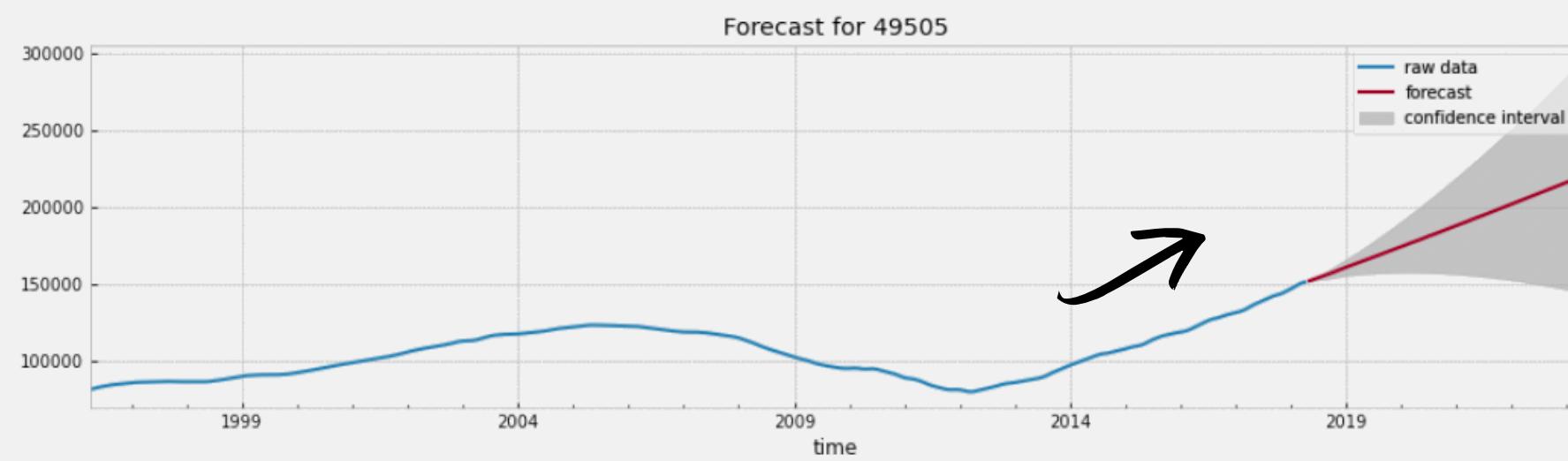
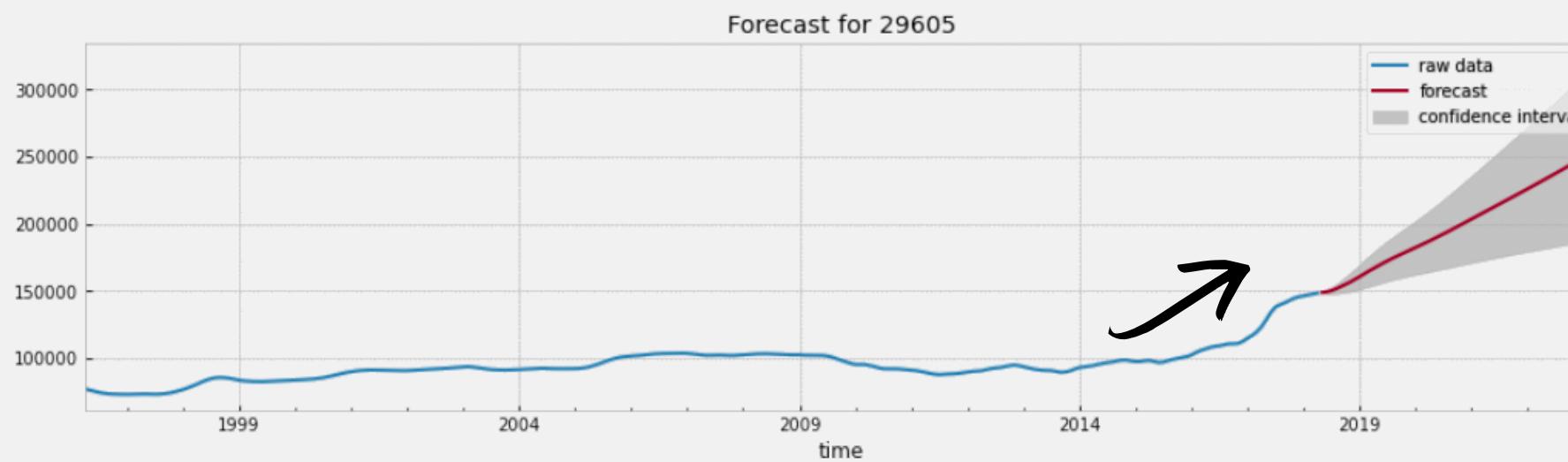
	47802	61704	44512	46260	47715	79907	61701	46383	38018
city, state	Terre Haute, IN	Bloomington, IL	Boardman, OH	Indianapolis, IN	Evansville, IN	El Paso, TX	Bloomington, IL	Valparaiso, IN	Memphis, TN
initial investment	\$23,583	\$47,049	\$25,887	\$45,070	\$32,057	\$21,860	\$23,839	\$48,213	\$40,111
prediction	-7.55%	2.02%	-5.62%	8.74%	6.06%	6.0%	0.01%	8.14%	12.37%
best case scenario	2.61	16.28	10.44	24.96	22.52	23.37	18.22	28.9	34.6
worst case scenario	-17.71	-12.23	-21.68	-7.47	-10.4	-11.37	-18.19	-12.62	-9.85
delta	20.32	28.51	32.12	32.43	32.92	34.74	36.41	41.52	44.45

Purple: Highest Price
Forecasted Zipcodes
(based on smallest non-negative
95% confidence interval delta)

	29607	76542	30518	76549	48187	43213	43224	77494	29605	49505
city, state	Greenville, SC	Killeen, TX	Buford, GA	Killeen, TX	Canton, MI	Whitehall, OH	Columbus, OH	Katy, TX	Greenville, SC	Grand Rapids, MI
initial investment	\$50,611	\$34,524	\$55,732	\$28,821	\$60,109	\$24,840	\$22,838	\$76,801	\$34,548	\$35,153
prediction	16.85%	2.11%	-10.29%	5.06%	15.27%	13.6%	17.09%	9.76%	72.19%	45.39%
best case scenario	41.87	28.97	19.23	35.52	49.65	49.87	55.8	48.99	117.19	95.11
worst case scenario	-8.18	-24.75	-39.8	-25.39	-19.11	-22.67	-21.61	-29.46	27.19	-4.34
delta	50.05	53.72	59.03	60.91	68.76	72.54	77.41	78.45	90	99.45

Blue: Highest Price
Forecasted Zipcodes
(based on prediction values)

Recommendations +



Analysis

	29605	49505	29607	38018	46260
city, state	Greenville, SC	Grand Rapids, MI	Greenville, SC	Memphis, TN	Indianapolis, IN
initial investment	\$34,548	\$35,153	\$50,611	\$40,111	\$45,070
prediction	72.19%	45.39%	16.85%	12.37%	8.74%
best case scenario	117.19%	95.11%	41.87%	34.6%	24.96%
worst case scenario	27.19%	-4.34%	-8.18%	-9.85%	-7.47%

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total initial potential investment costs: \$205,493

+ Future Work



Parameter Tuning

The ARIMA models used to forecast can be further experimented using different parameters

Different Slicing/Filtering

Instead of appreciation history, CV ratio, and metropolitan rank, other techniques could be explored to narrow down the data to run future forecasting models.

Other Considerations

The dataset focused on the metropolitan rank and price history. There are countless other features that could predict future value more accurately (crime rate, average sq. ft size, etc.)

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Thank you for
your time!

