



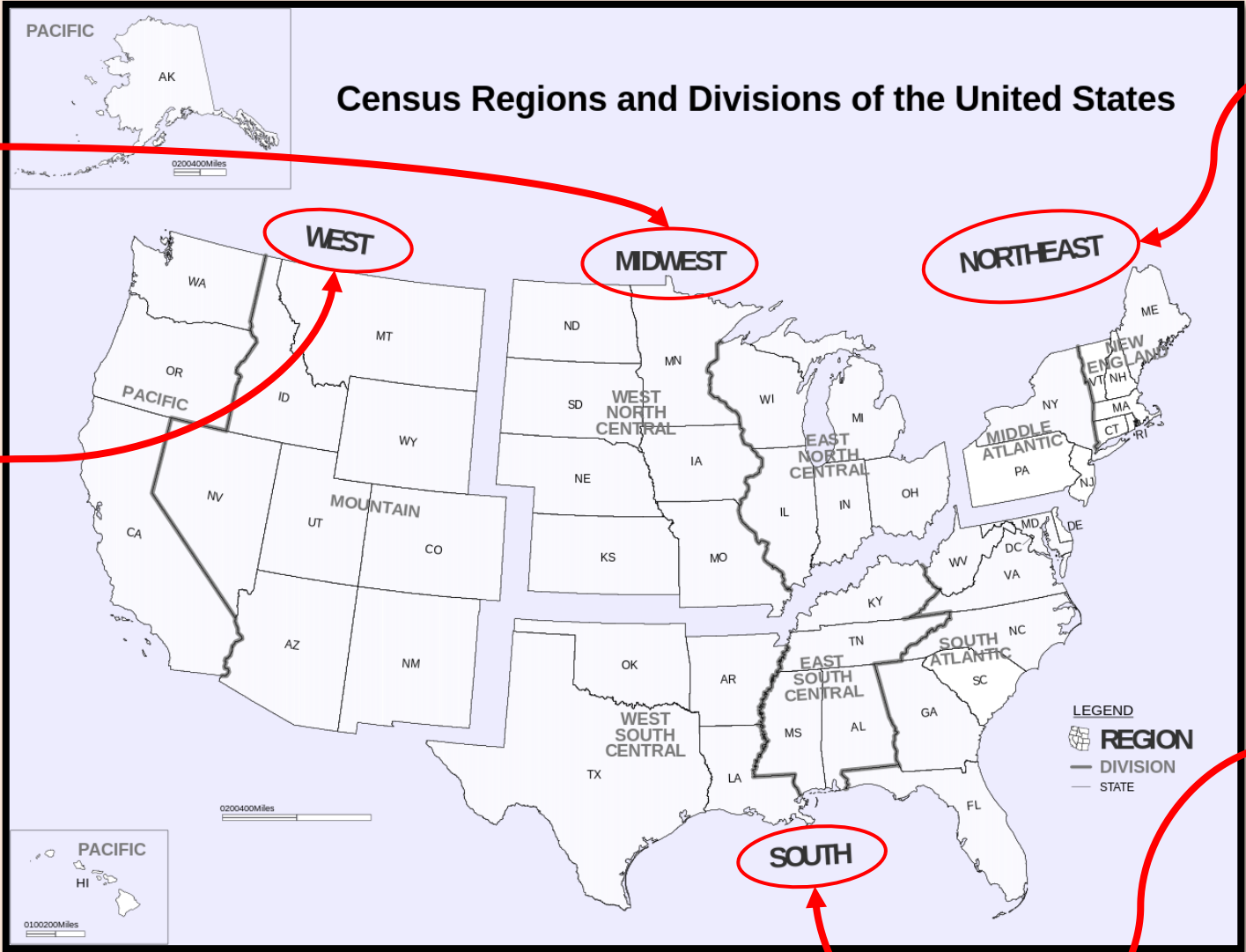
USA REAL ESTATE

DATA ANALYSIS

**SEASONAL  
CHANGE  
vs.  
FOR-SALE  
INVENTORY**  
(Metropolitan USA Regions)

State Code	State Name
IA	Iowa
IL	Illinois
IN	Indiana
KS	Kansas
MI	Michigan
MN	Minnesota
MO	Missouri
ND	North Dakota
NE	Nebraska
OH	Ohio
SD	South Dakota
WI	Wisconsin

State Code	State Name
AK	Alaska
AZ	Arizona
CA	California
CO	Colorado
HI	Hawaii
ID	Idaho
MT	Montana
NM	New Mexico
NV	Nevada
OR	Oregon
UT	Utah
WA	Washington
WY	Wyoming



State Code	State Name
CT	Connecticut
MA	Massachusetts
ME	Maine
NH	New Hampshire
NJ	New Jersey
NY	New York
PA	Pennsylvania
RI	Rhode Island
VT	Vermont

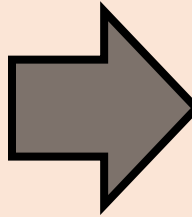
State Code	State Name
AL	Alabama
AR	Arkansas
DC	Washington, D.C.
DE	Delaware
FL	Florida
GA	Georgia
KY	Kentucky
LA	Louisiana
MD	Maryland
MS	Mississippi
NC	North Carolina
OK	Oklahoma
SC	South Carolina
TN	Tennessee
TX	Texas
VA	Virginia
WV	West Virginia

# IRAW Dataset

## (Raw, All Metro Homes, Weekly)

	indicator_id	region_id	date	value	region_type	region	City	State
0	IRAW	845172	2023-10-07	138.0	metro	Winfield, KS	Winfield	KS
1	IRAW	845172	2023-09-30	141.0	metro	Winfield, KS	Winfield	KS
2	IRAW	845172	2023-09-23	140.0	metro	Winfield, KS	Winfield	KS
3	IRAW	845172	2023-09-16	145.0	metro	Winfield, KS	Winfield	KS
4	IRAW	845172	2023-09-09	144.0	metro	Winfield, KS	Winfield	KS
...	...	...	...	...	...	...	...	...
266572	IRAW	394297	2018-02-10	160.0	metro	Aberdeen, SD	Aberdeen	SD
266573	IRAW	394297	2018-02-03	157.0	metro	Aberdeen, SD	Aberdeen	SD
266574	IRAW	394297	2018-01-27	155.0	metro	Aberdeen, SD	Aberdeen	SD
266575	IRAW	394297	2018-01-20	159.0	metro	Aberdeen, SD	Aberdeen	SD
266576	IRAW	394297	2018-01-13	159.0	metro	Aberdeen, SD	Aberdeen	SD

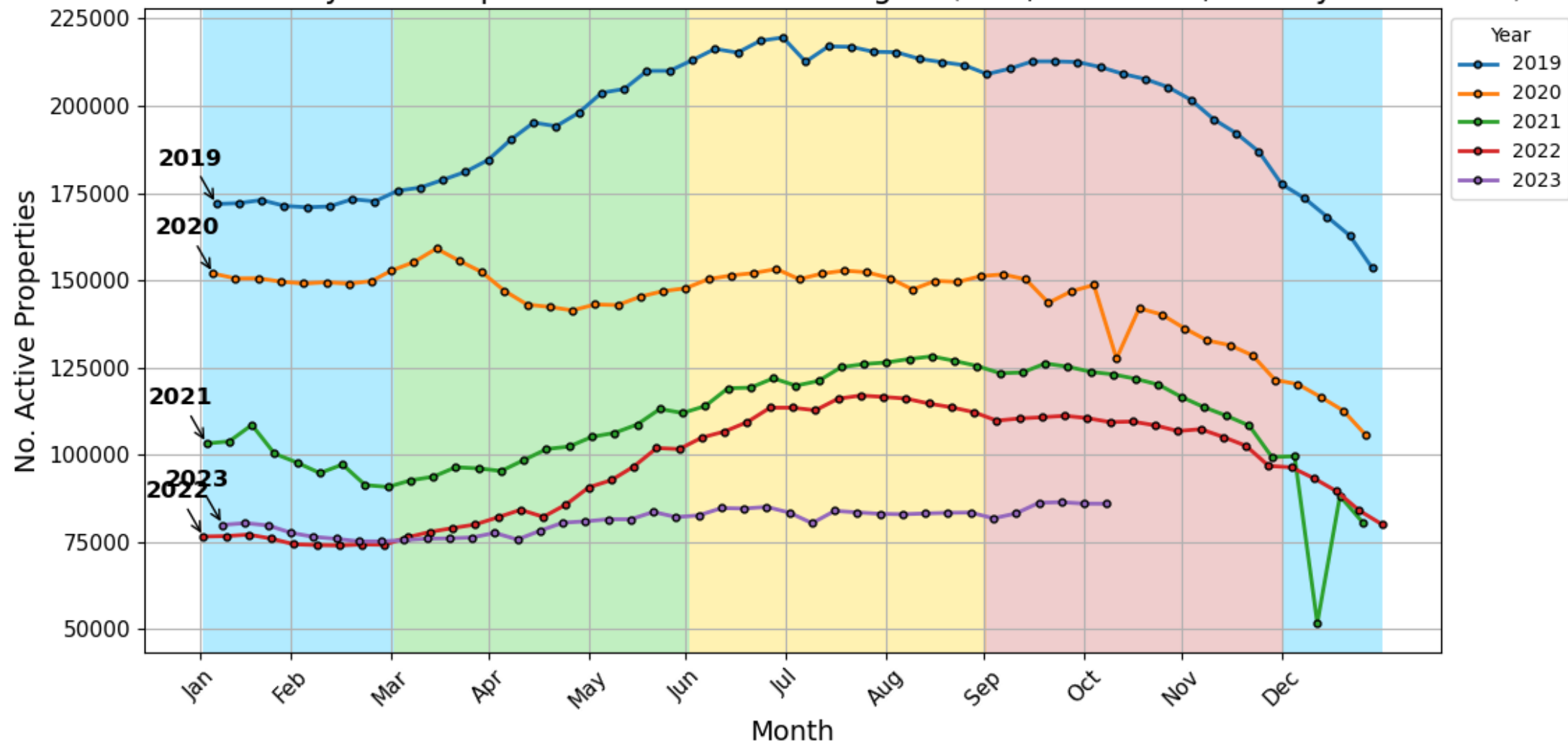
266577 rows × 8 columns



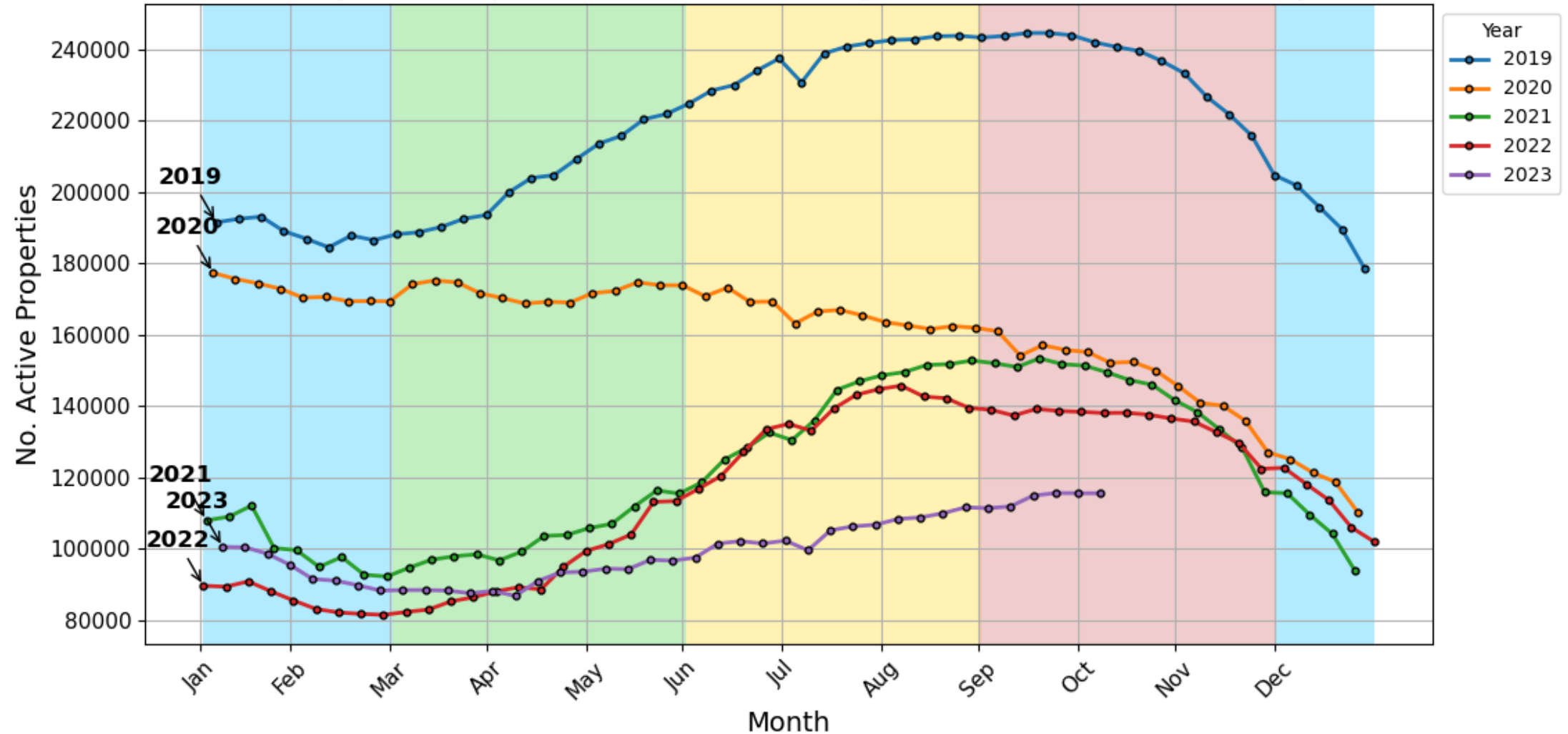
	Census Region	date	value	Season	Year
65	Midwest	2019-01-05	191469.0	Winter	2019
66	Midwest	2019-01-12	192443.0	Winter	2019
67	Midwest	2019-01-19	193061.0	Winter	2019
68	Midwest	2019-01-26	189020.0	Winter	2019
69	Midwest	2019-02-02	186871.0	Winter	2019
...	...	...	...	...	...
1251	West	2023-09-09	138700.0	Fall	2023
1252	West	2023-09-16	141466.0	Fall	2023
1253	West	2023-09-23	141810.0	Fall	2023
1254	West	2023-09-30	141201.0	Fall	2023
1255	West	2023-10-07	140118.0	Fall	2023

996 rows × 5 columns

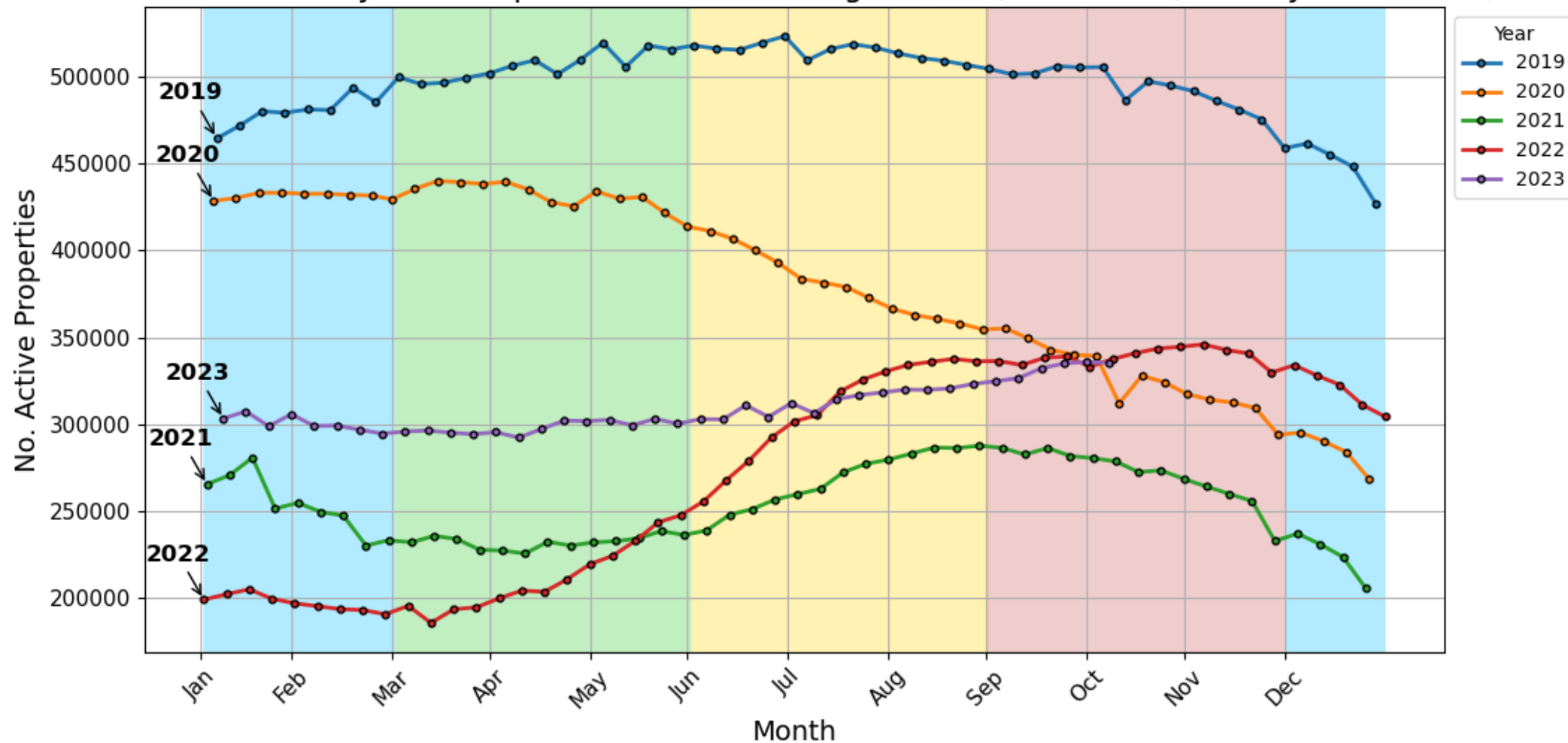
## For-Sale Inventory in Metropolitan USA Northeast Region (Raw, All Homes, Weekly 2019-2023)



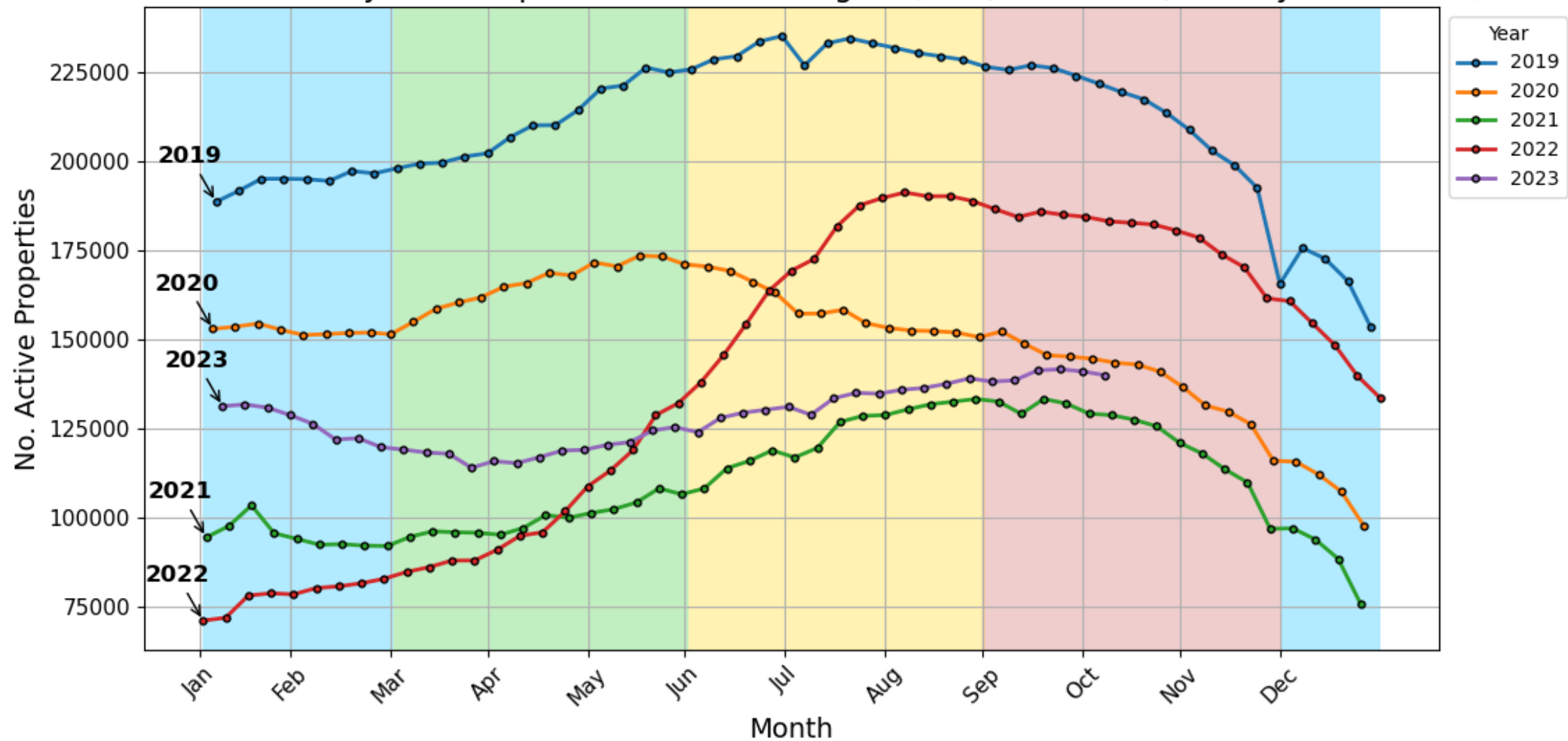
For-Sale Inventory in Metropolitan USA Midwest Region (Raw, All Homes, Weekly 2019-2023)



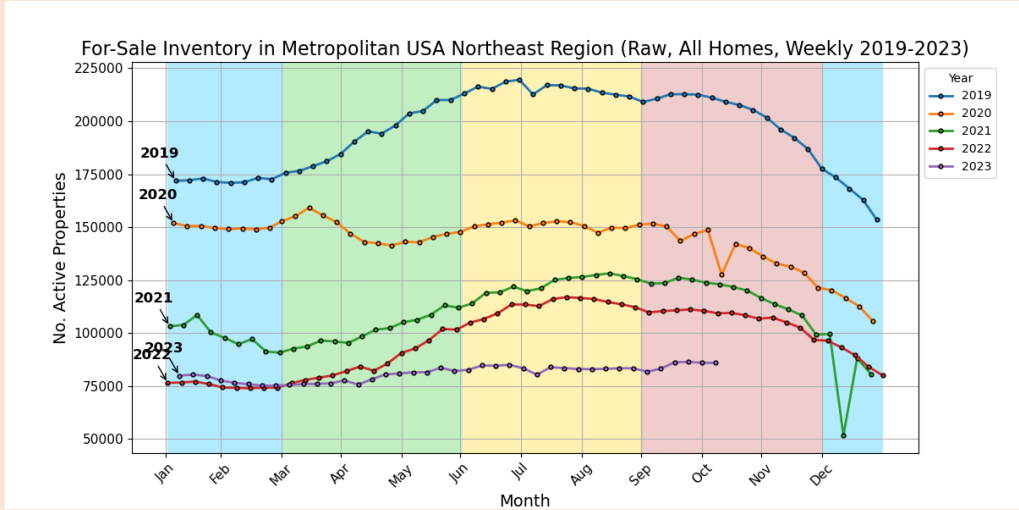
For-Sale Inventory in Metropolitan USA South Region (Raw, All Homes, Weekly 2019-2023)



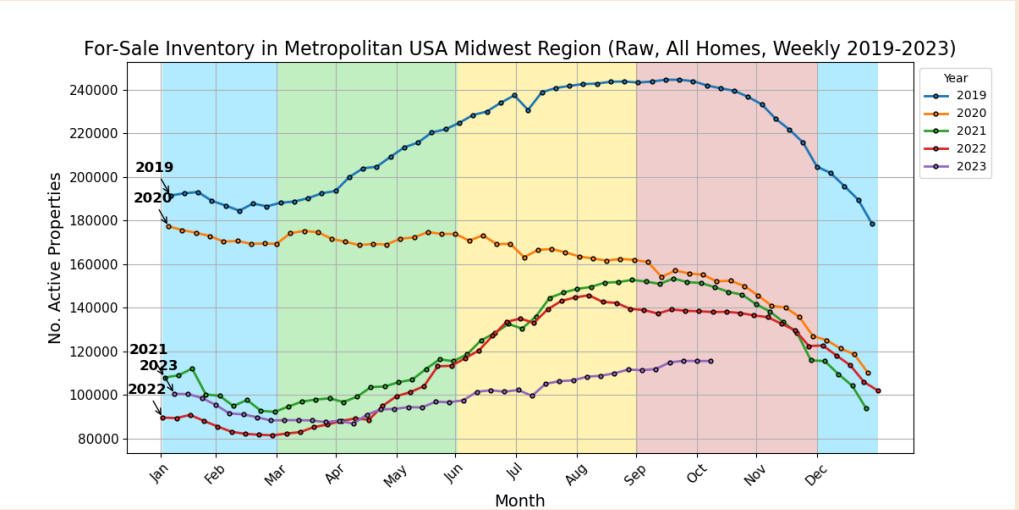
For-Sale Inventory in Metropolitan USA West Region (Raw, All Homes, Weekly 2019-2023)



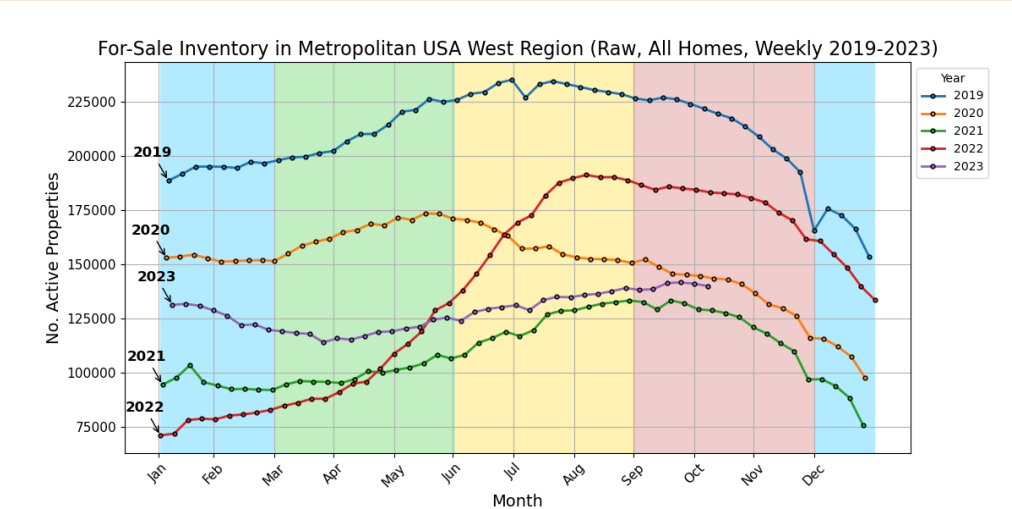




**p-value = 0.008943123143410924**  
**[ REJECT Null Hypothesis ( $H_0$ ) ]**



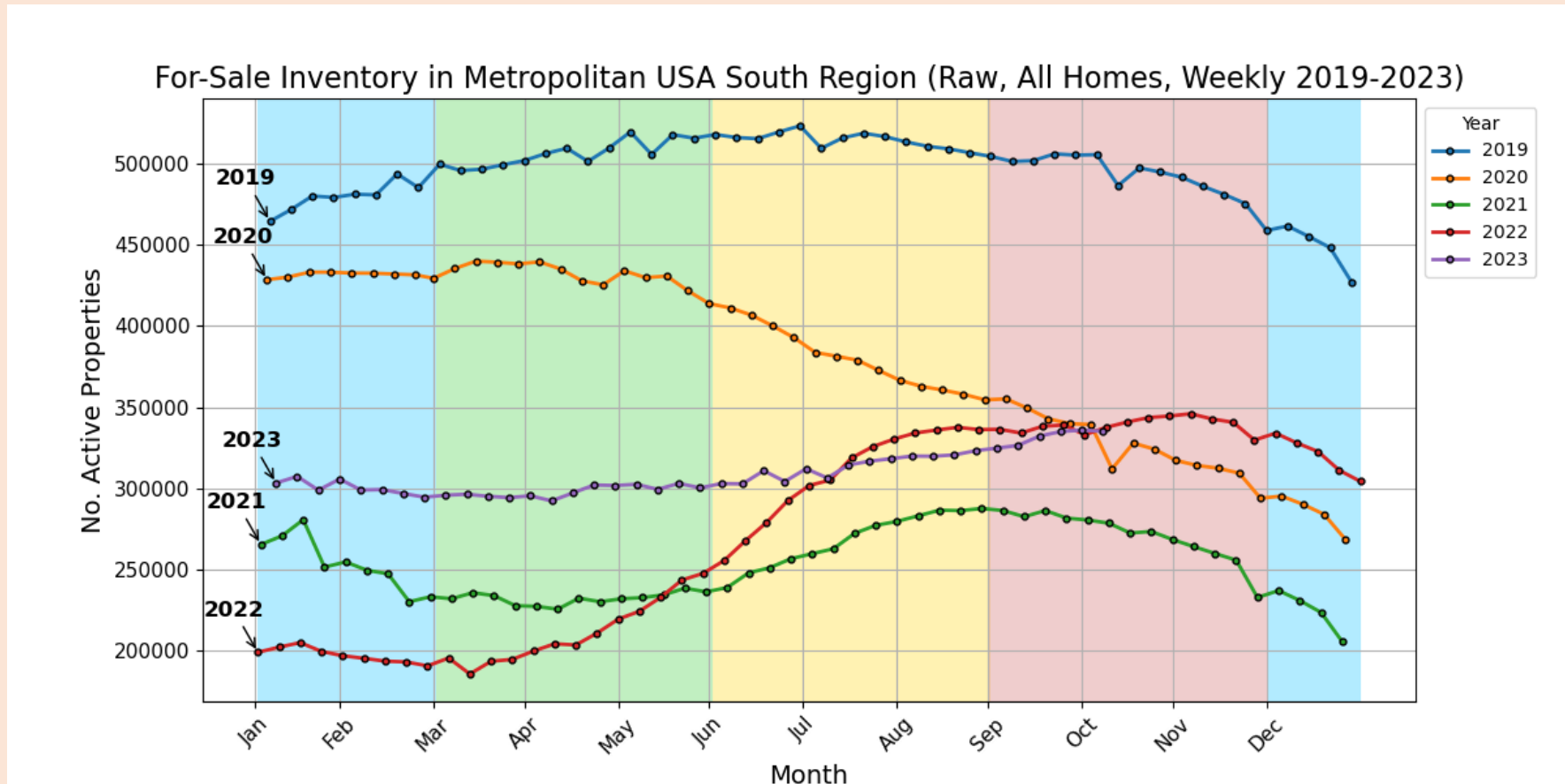
**p-value = 0.0006887615533247862**  
**[ REJECT Null Hypothesis ( $H_0$ ) ]**



**p-value = 6.692988590780285e-06**  
**[ REJECT Null Hypothesis ( $H_0$ ) ]**

***ANOVA Test Results***

***$\alpha = 0.05$***



**p-value = 0.2543987237874858**  
**[ FAILED TO REJECT Null Hypothesis ( $H_0$ ) ]**

***ANOVA Test Results***

***$\alpha = 0.05$***

# References:

- *[Nasdaq Data Link API] Zillow Real Estate Data*
  - <https://data.nasdaq.com/databases/ZILLOW/documentation>
- *United States Census Regions*
  - [https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us\\_regdiv.pdf](https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf)
- *Seasons: Meteorological and Astronomical*
  - <https://www.timeanddate.com/calendar/aboutseasons.html>