

Python Project

Data Analysis - New York rent and real estate market after pandemic

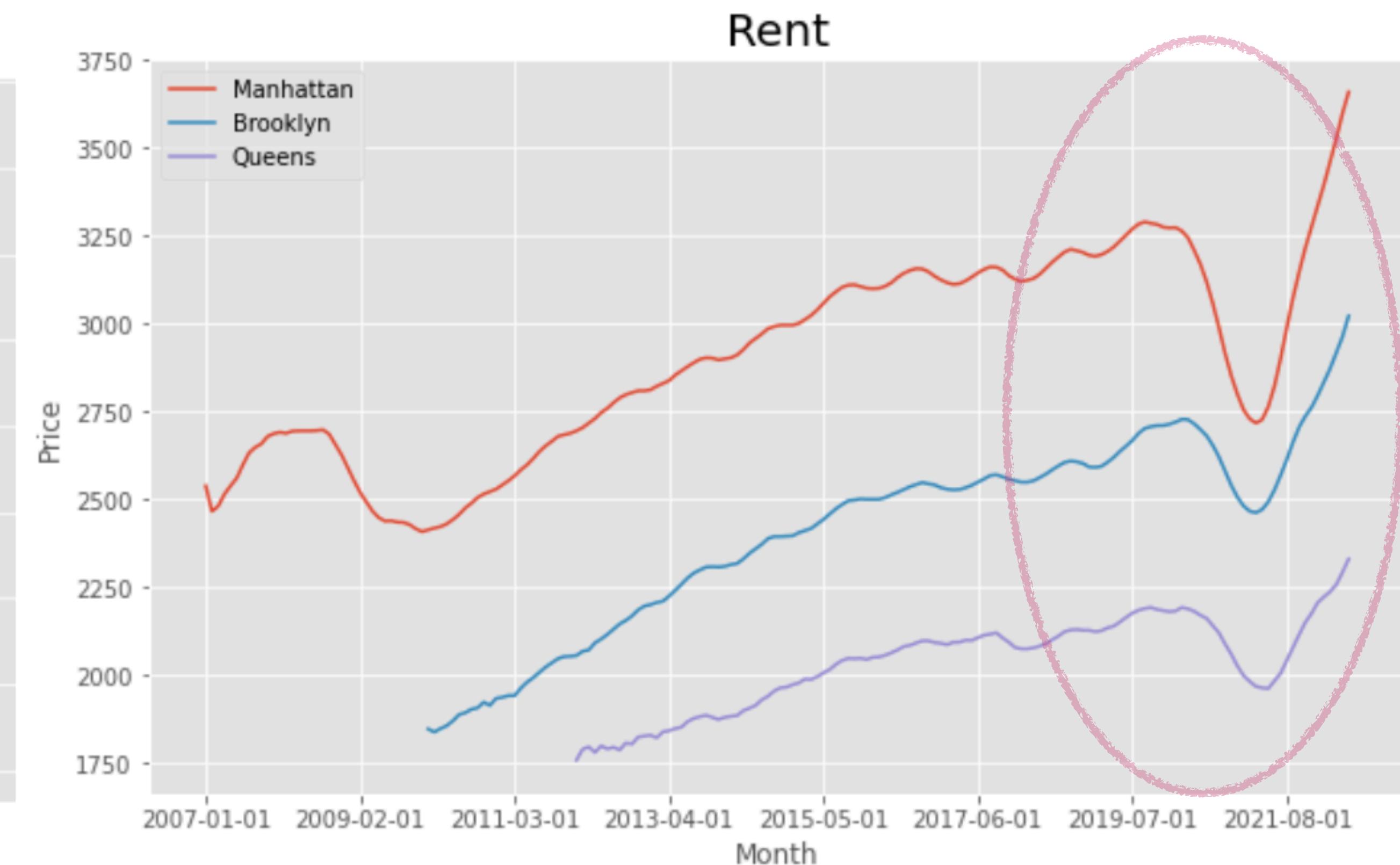
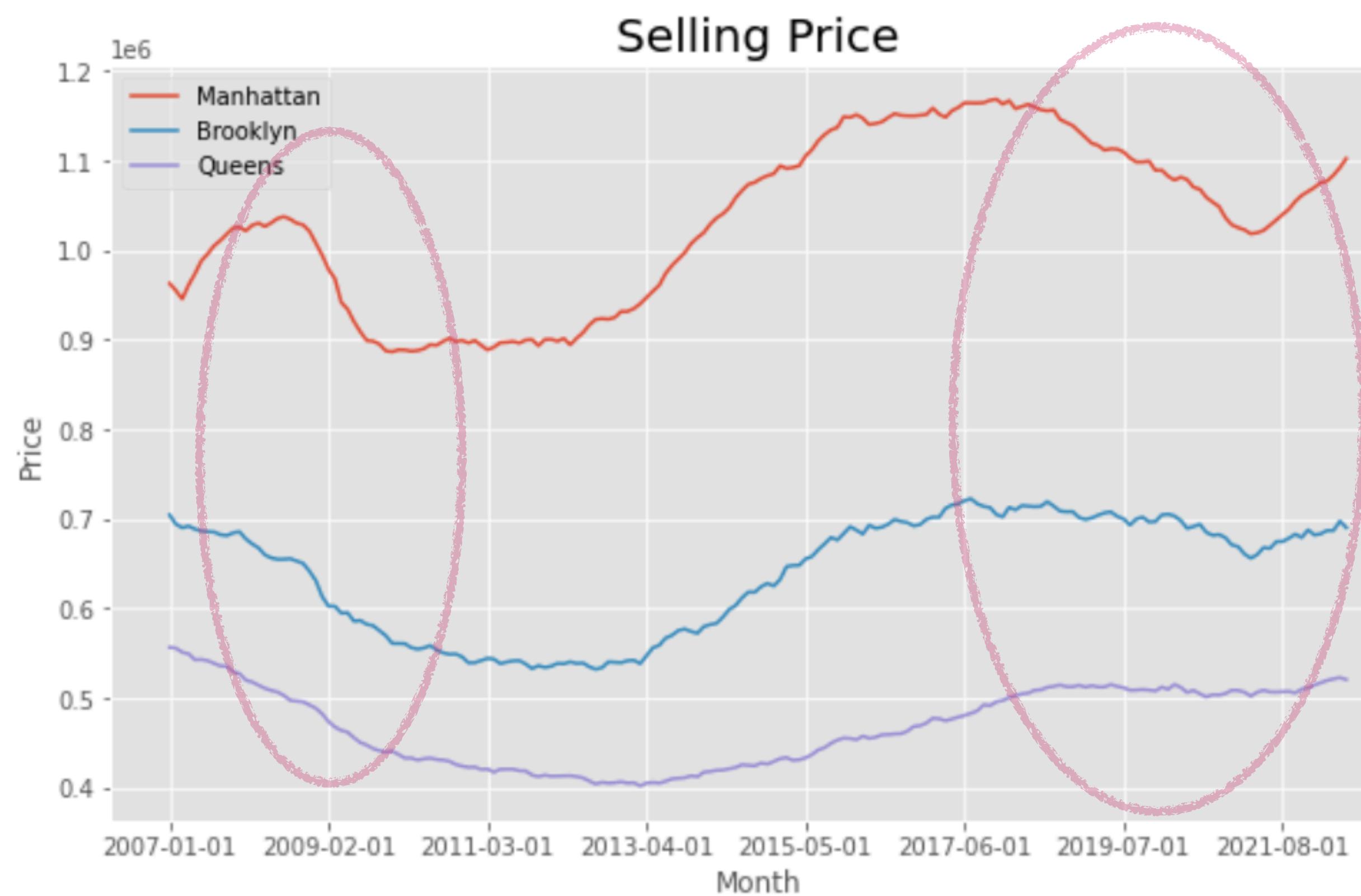


Agenda



- * **Background**
- * **Research Question**
- * **Analysis**
- * **Conclusion**
- * **Future Work**

New York rent and real estate prices from 2007/01/01 to 2022/06/01



Two big drops : 2008 - 2009 Great Recession and 2020 - 2021 Pandemic

How does pandemic impact New York residents?

Does pandemic cause new suburbanization and change people's living style?

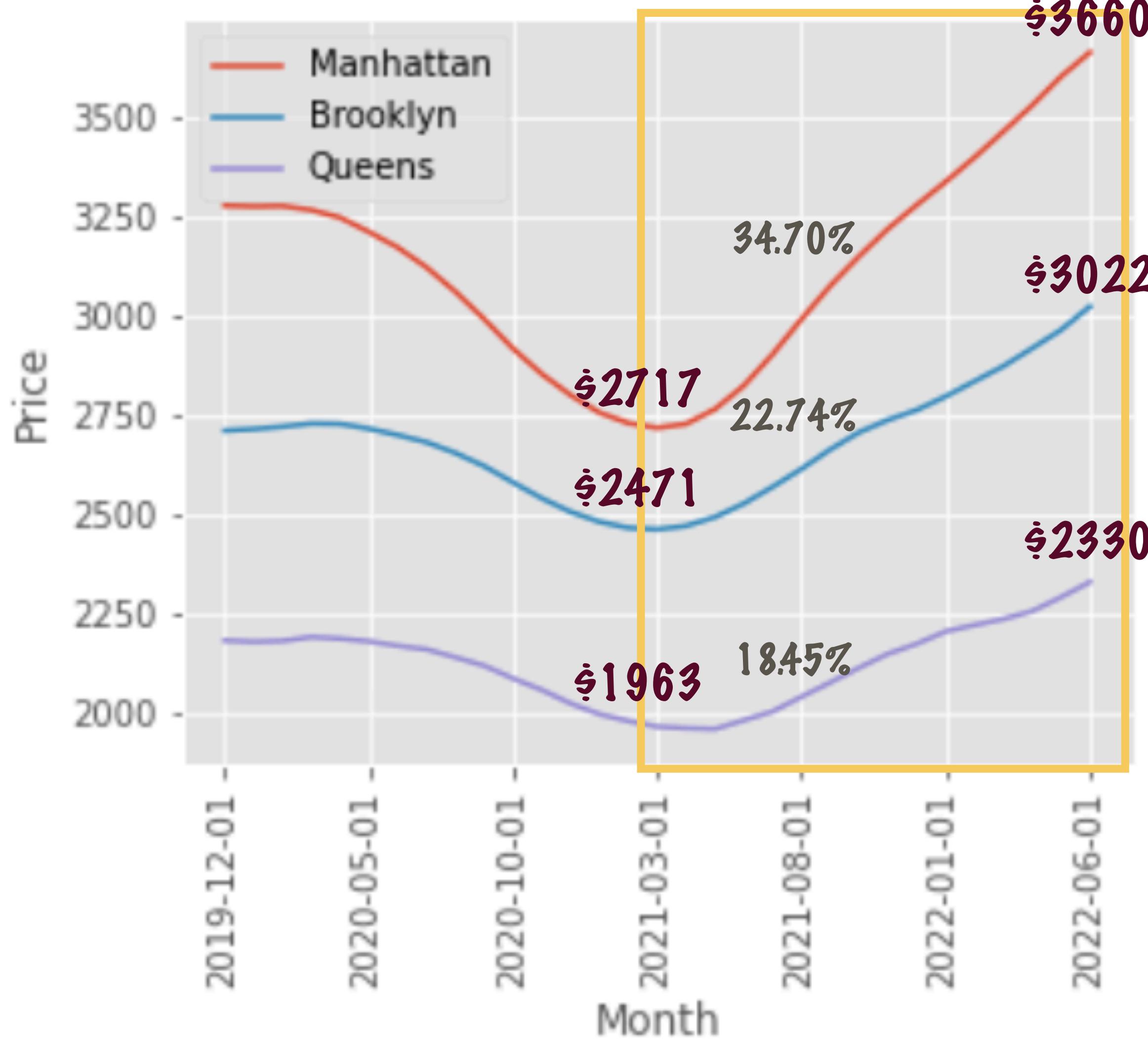
Does the growing cost of homeownership has had a domino effect on the rental market?

Does the surge in rent pushing New Yorkers move to less-expensive areas ?

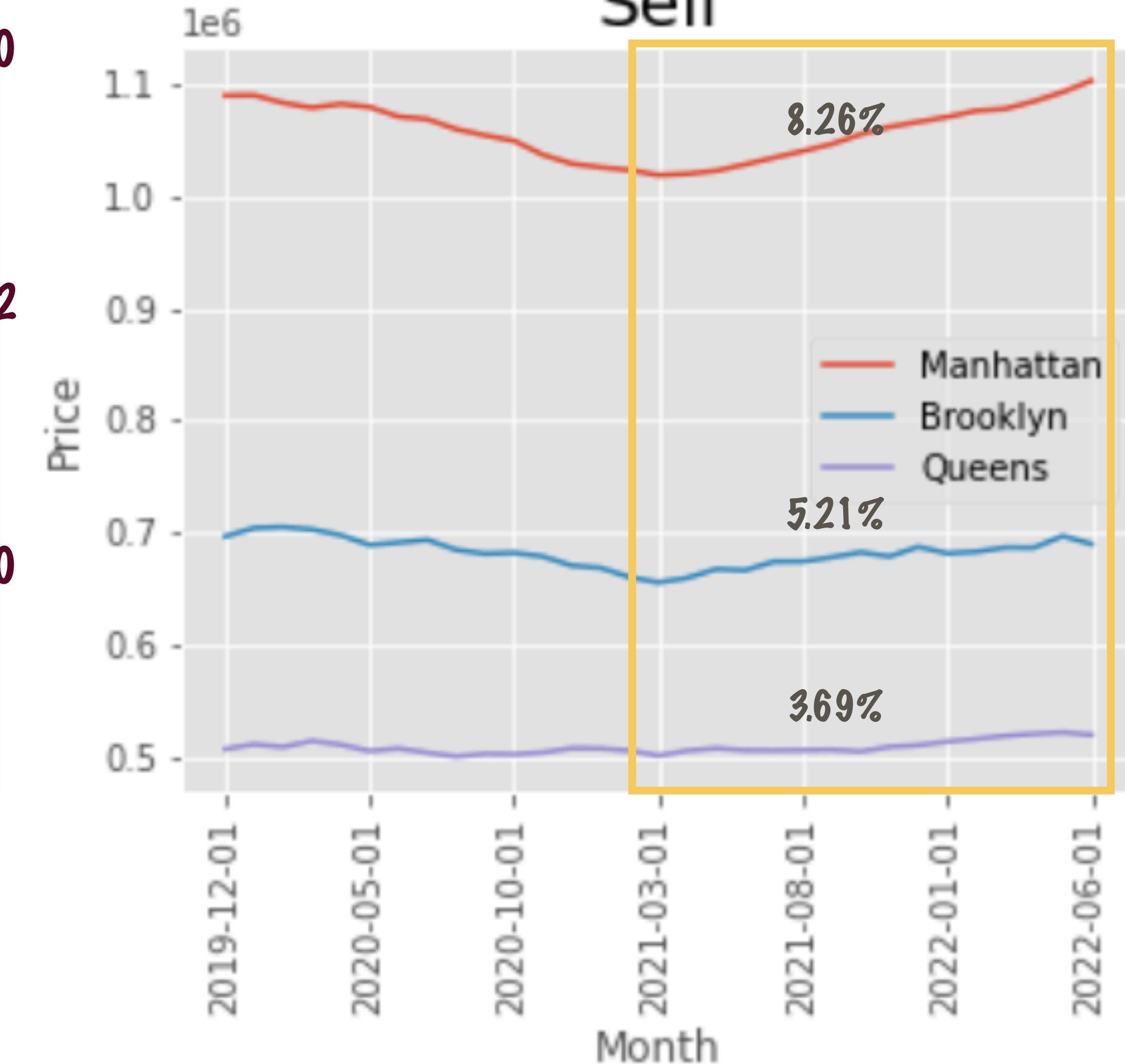
What are other factors that influence New York City's real estate market and residence behavior?



Rent

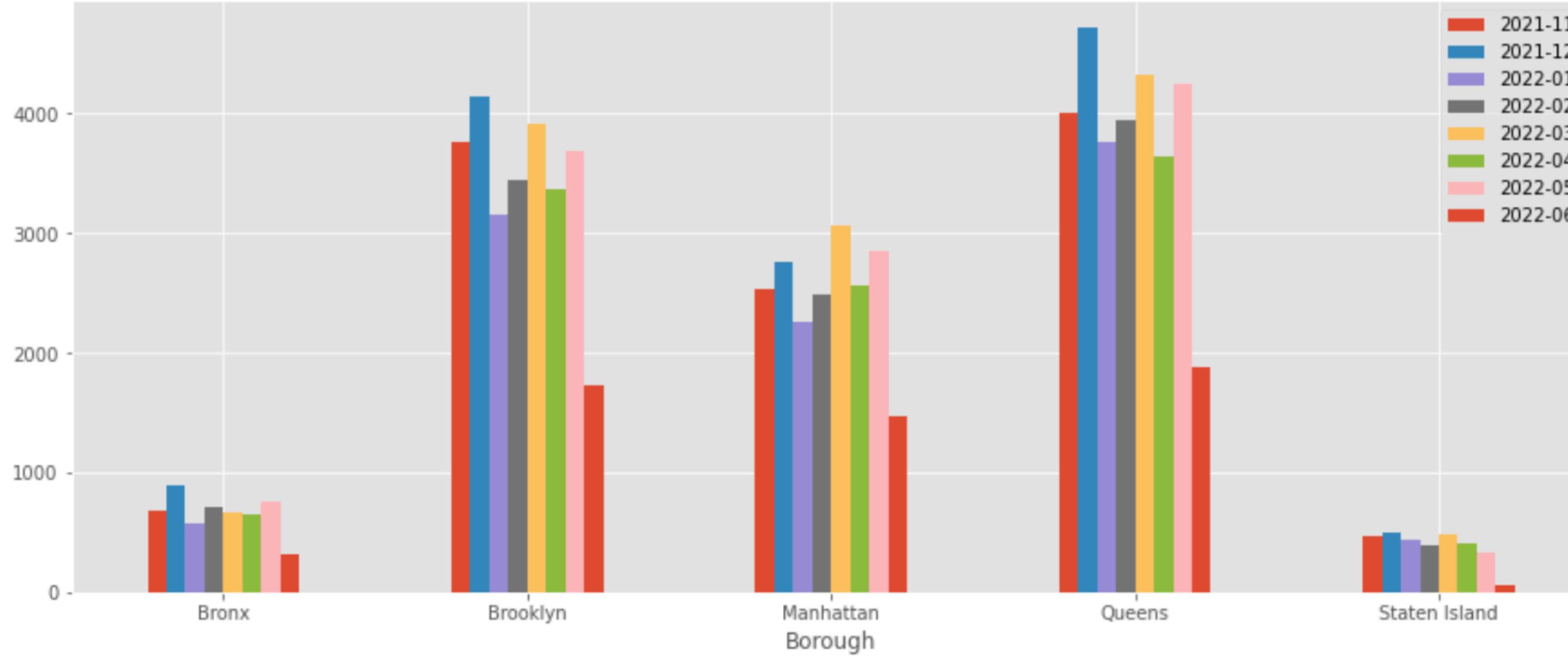


Sell

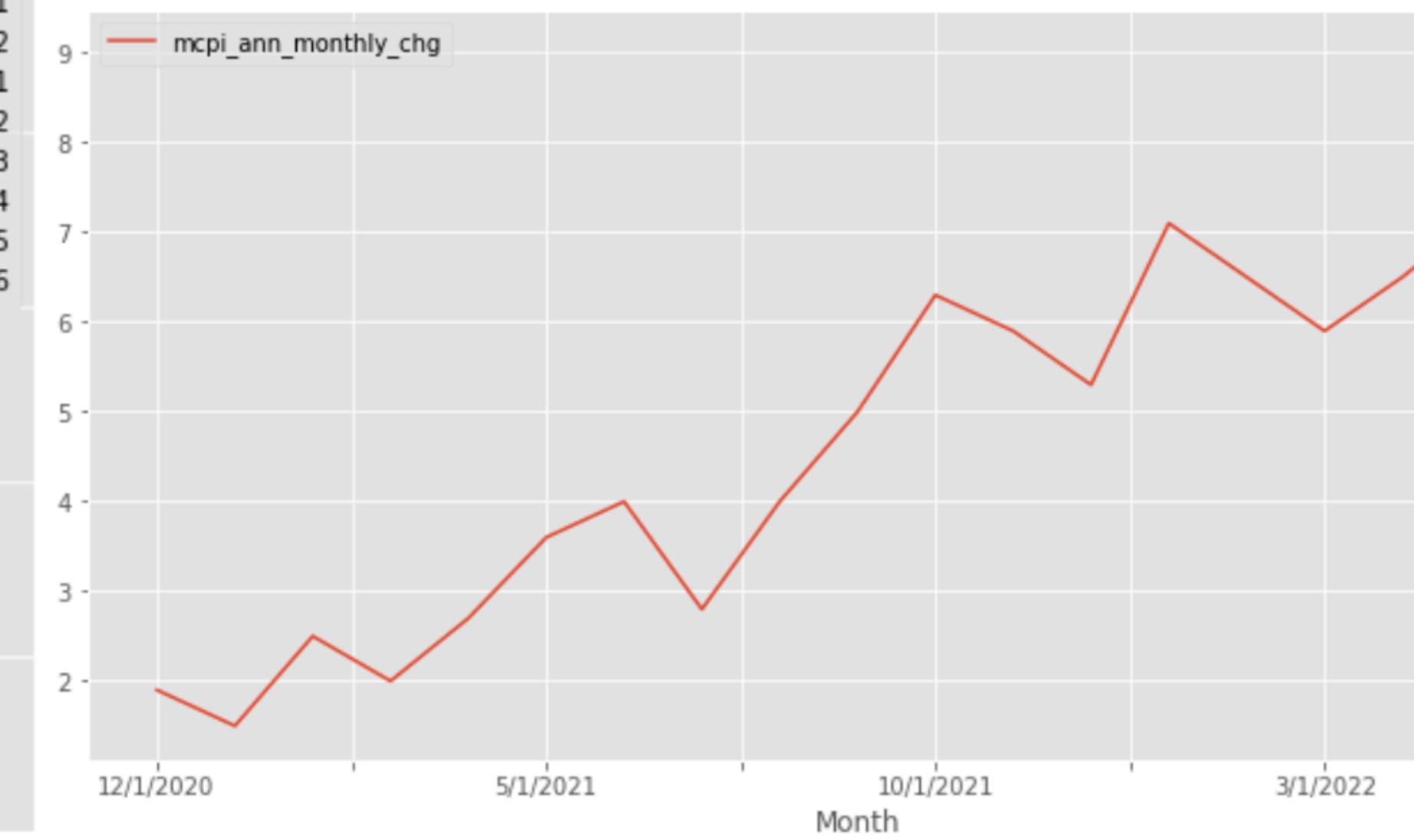


Both sell and rental rates are rising from 2021/03,
but rental rates reflect a steep increase.

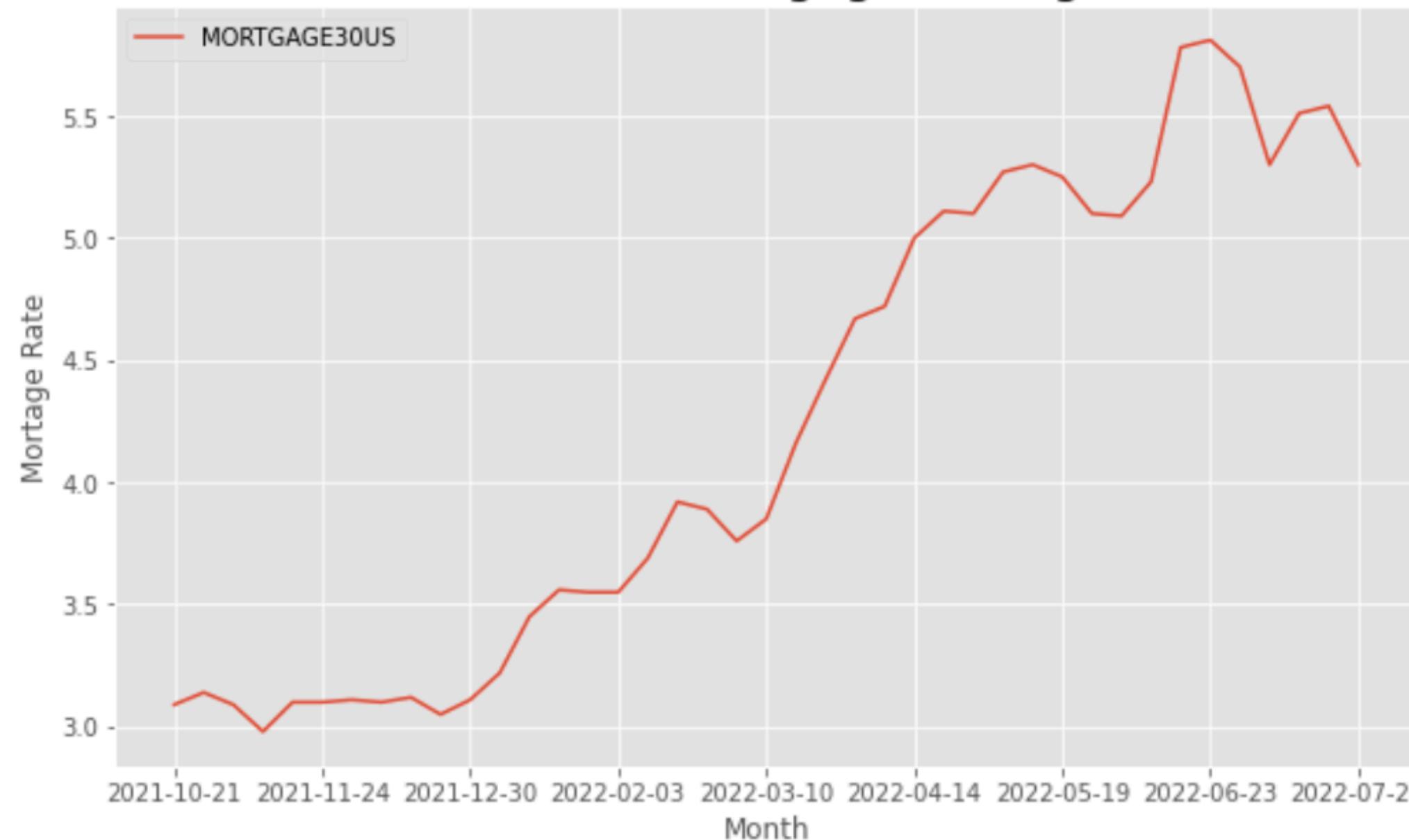
Sum of recorded sales volume



Median CPI



Fixed Rate Mortgage Average



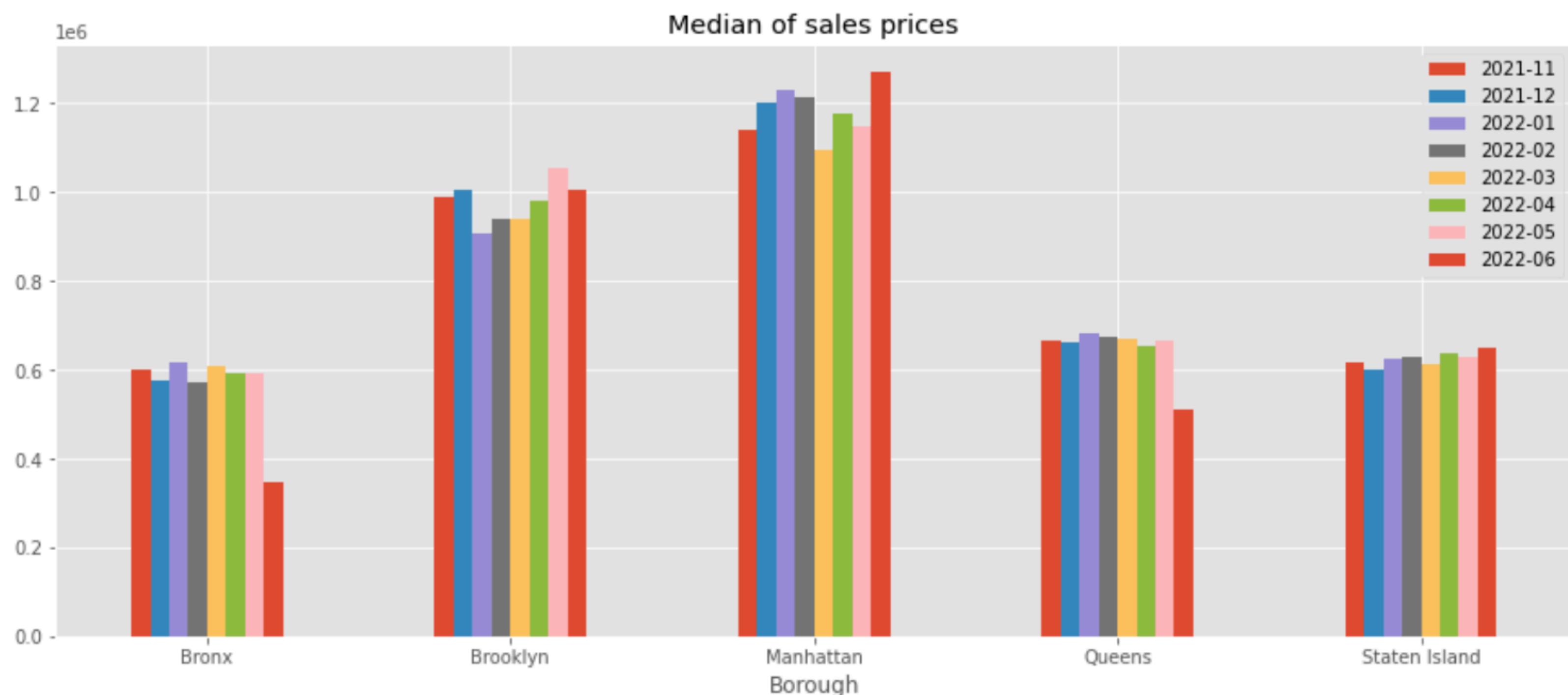
Record low supply combined with record low mortgage rates caused a high demand for home buying in 2021, which also caused the robust growth rate in home prices.

But in 2022 June, higher prices, interest rates, and inflation rate deter homebuyers, making the red-hot housing market cool off.

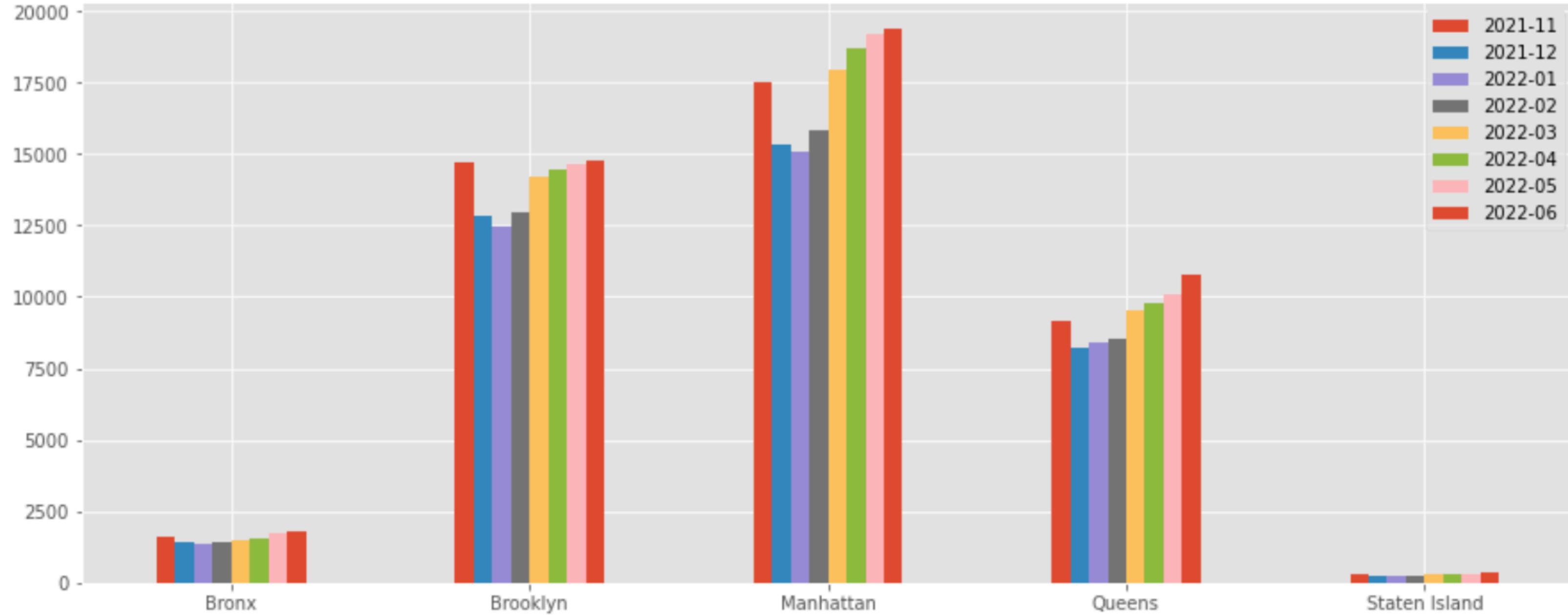
Sales Volume from 2021-11 to 2022-06

| Borough | 2021-11 | 2021-12 | 2022-01 | 2022-02 | 2022-03 | 2022-04 | 2022-05 | 2022-06 |
|---------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Bronx | 677 | 899 | 580 | 715 | 659 | 653 | 756 | 311 |
| Brooklyn | 3769 | 4137 | 3158 | 3444 | 3909 | 3366 | 3687 | 1734 |
| Manhattan | 2538 | 2756 | 2254 | 2486 | 3060 | 2566 | 2846 | 1476 |
| Queens | 4011 | 4716 | 3756 | 3945 | 4323 | 3642 | 4248 | 1884 |
| Staten Island | 461 | 501 | 435 | 394 | 482 | 404 | 330 | 55 |

| Borough | Correlation |
|---------------|-------------|
| Bronx | 0.753228 |
| Brooklyn | -0.020426 |
| Manhattan | -0.849007 |
| Queens | 0.898657 |
| Staten Island | -0.833744 |

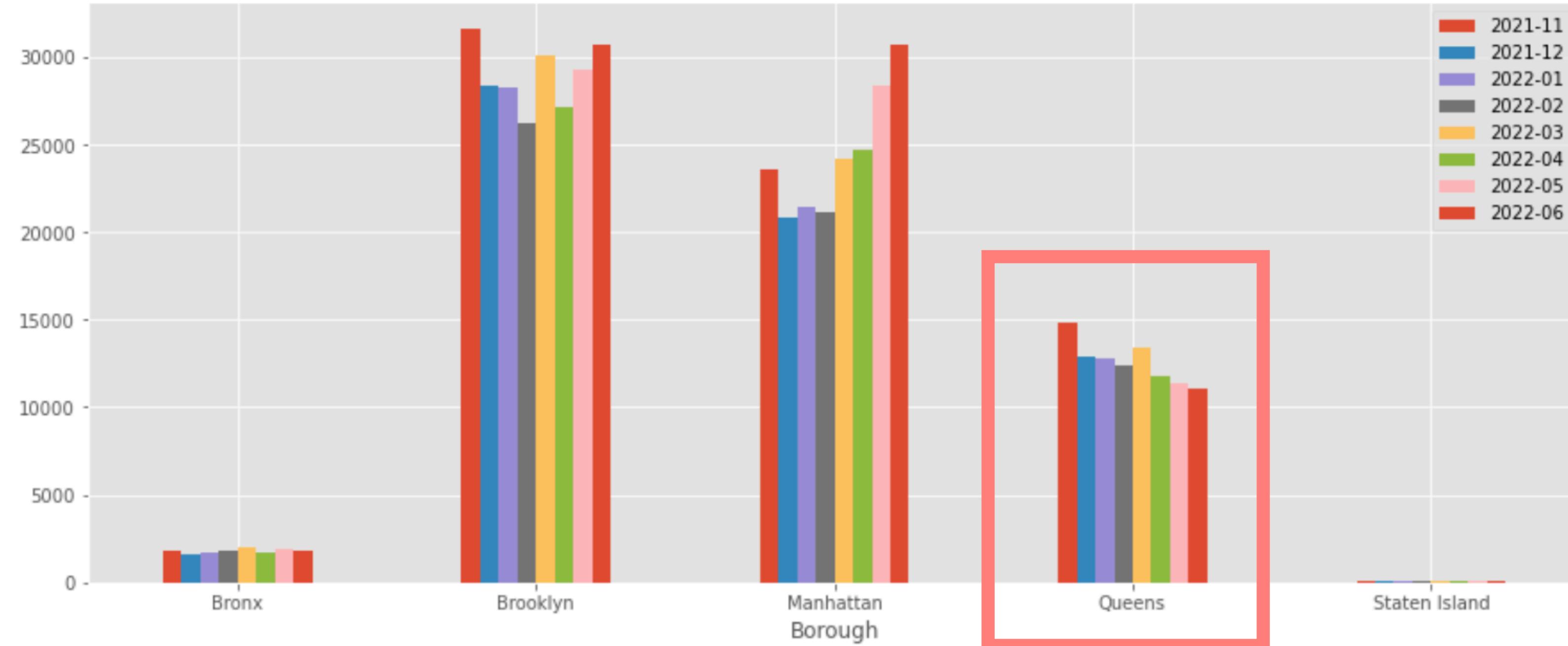


Sum of house inventory



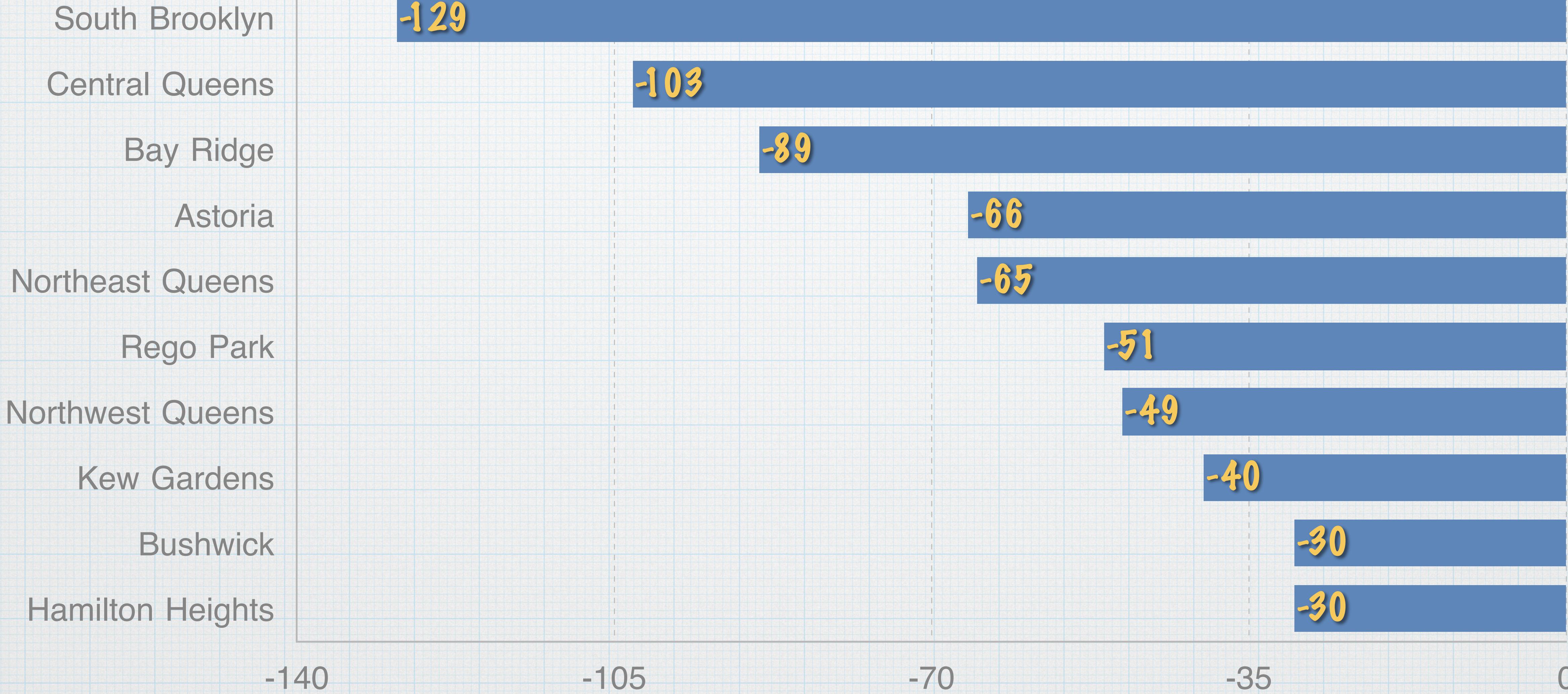
Rental prices in New York are rising at the fastest rate in the world, which causes renters in NYC to be squeezed to their limit. More NYC apartment renters are moving out instead of paying higher rates.

Sum of rental inventory

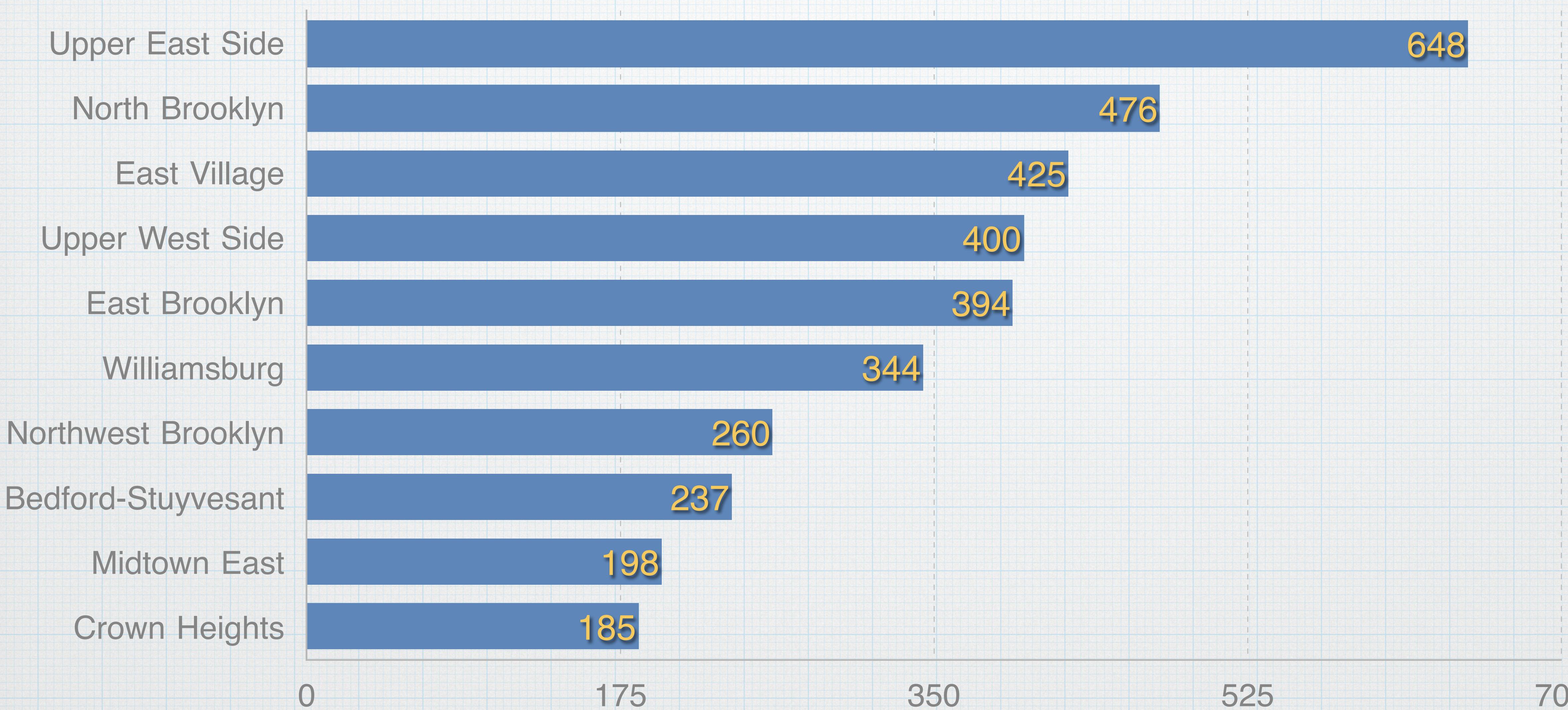


House inventory and rental inventory has risen significantly from 2022 Feb, especially in Manhattan. But the inventory in Queens is dropping. People were fleeing to more affordable places to live.

Top 10 Negative Rental Inventory Change (April - June, 2022)



Top 10 Positive Rental Inventory Change (April - June, 2022)



Conclusion

- * The lack of supply and high demand force pushing up home prices.
- * The growing inflation and mortgage rate make it harder for people to afford a home.
- * Reopening, improving market conditions, and home-buyers pushed into the rental market, driving rent prices rising.
- * People to moving out of the city and seeking affordable apartments.

Future Work

- * Additional data in suburban areas.
- * Better research and understanding for the population migration.