Apartments for Rent

Forecasting Prices

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Stats 421B ~ Advanced Statistical Communication
University of California, Los Angeles
Department of Statistics

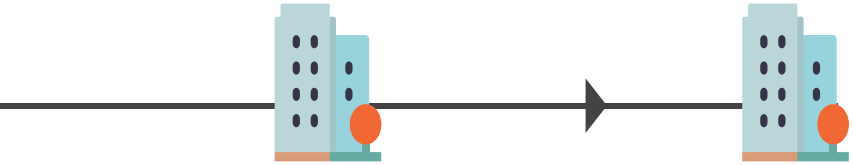
Introduction - Case Study

2018

2bd / 2ba (942sqft)
$ 2,500 / mo

2021

2bd / 2ba (942 sqft)
$ 3,200 / mo



My old apartment:

+ $700 (28%) rent increase in 3 years!

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What will apartment rent prices be in the future?

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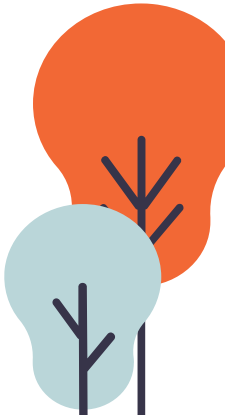
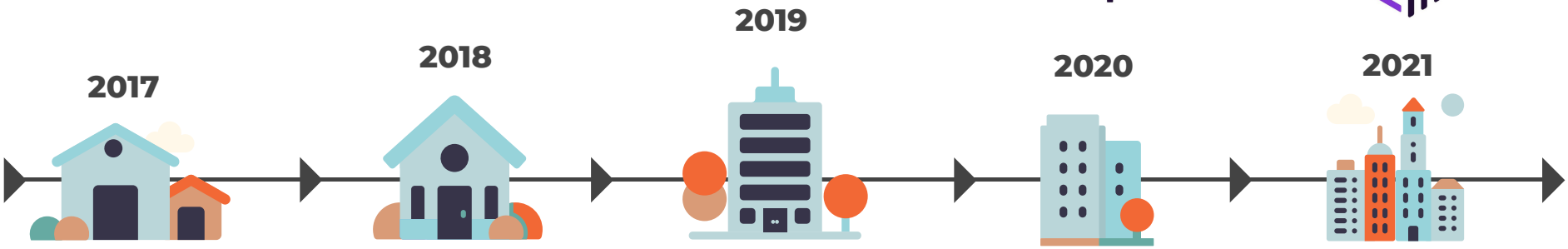
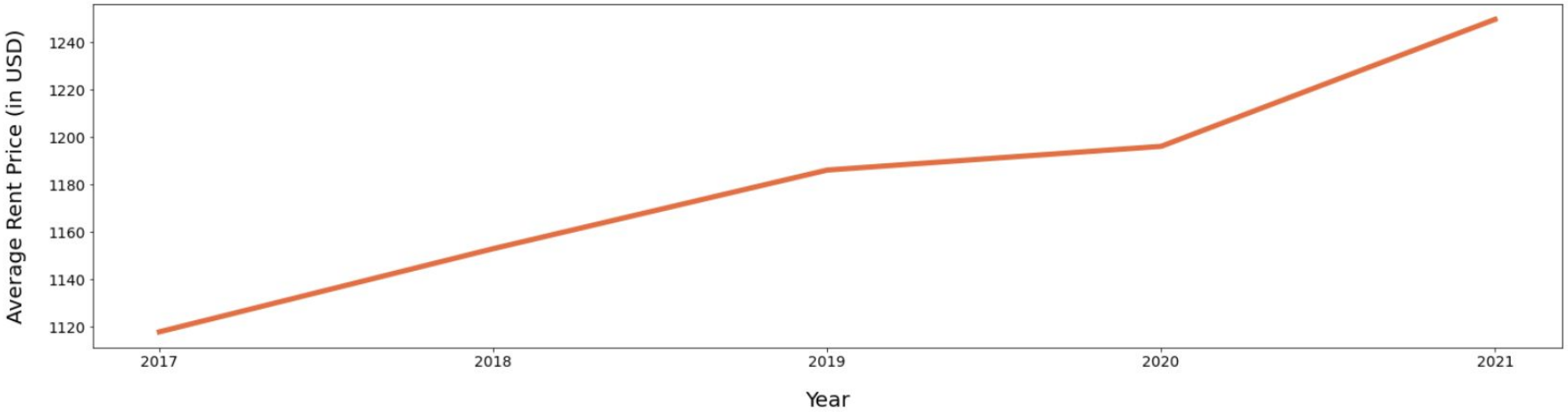


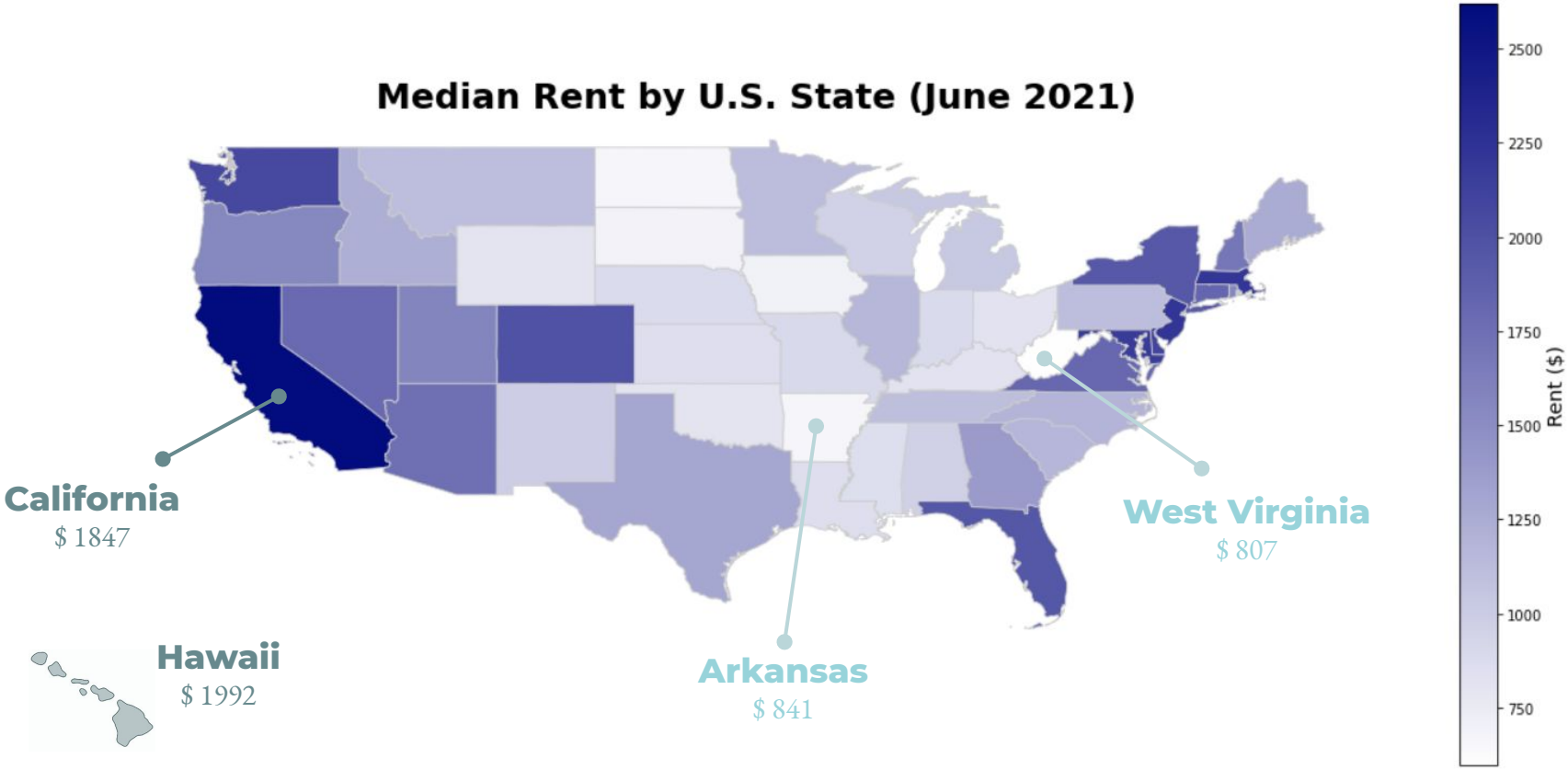
Rent Across the Nation

Data sourced from: Apartment List



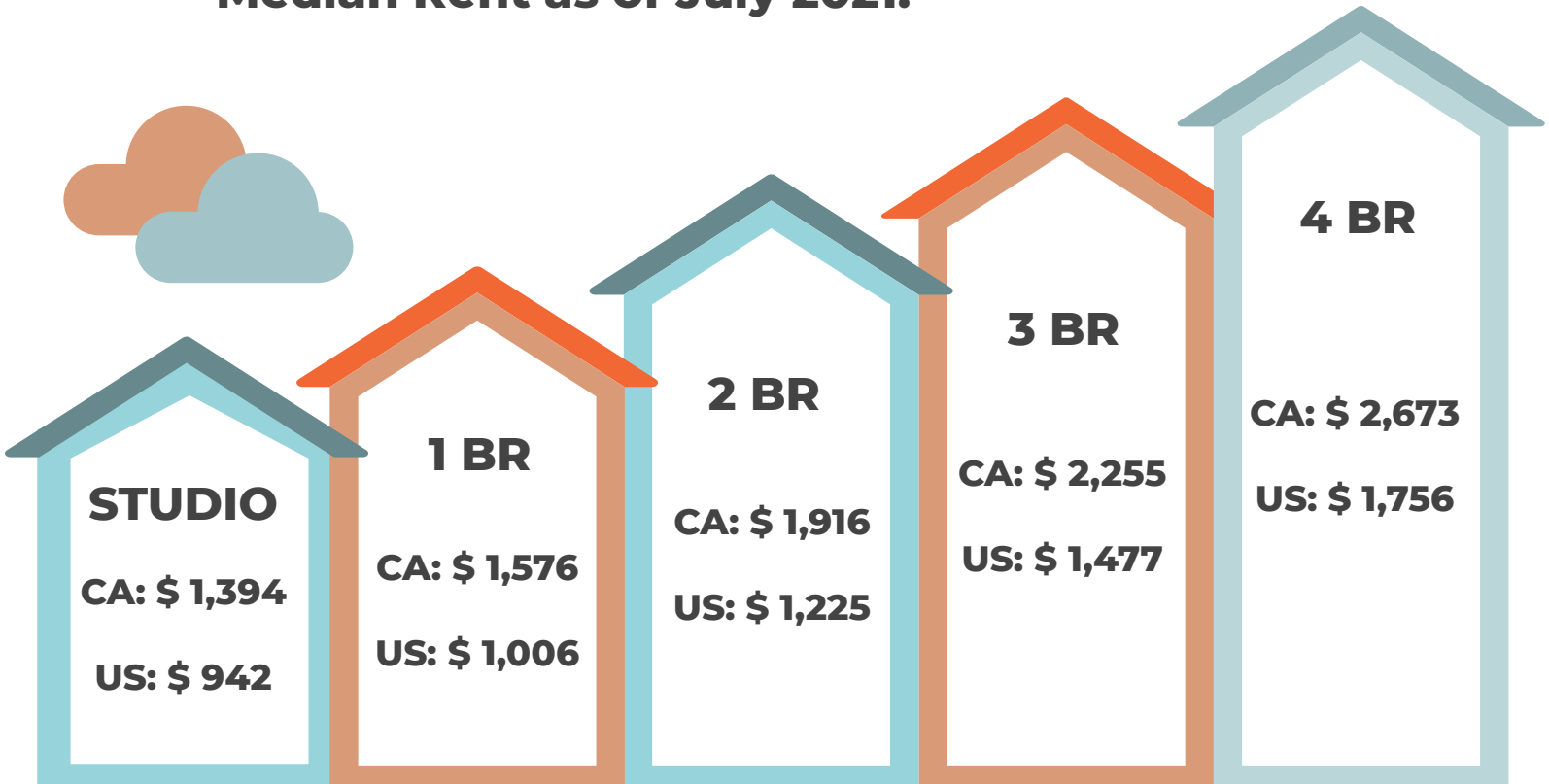


Exploratory Analysis - National Statistics

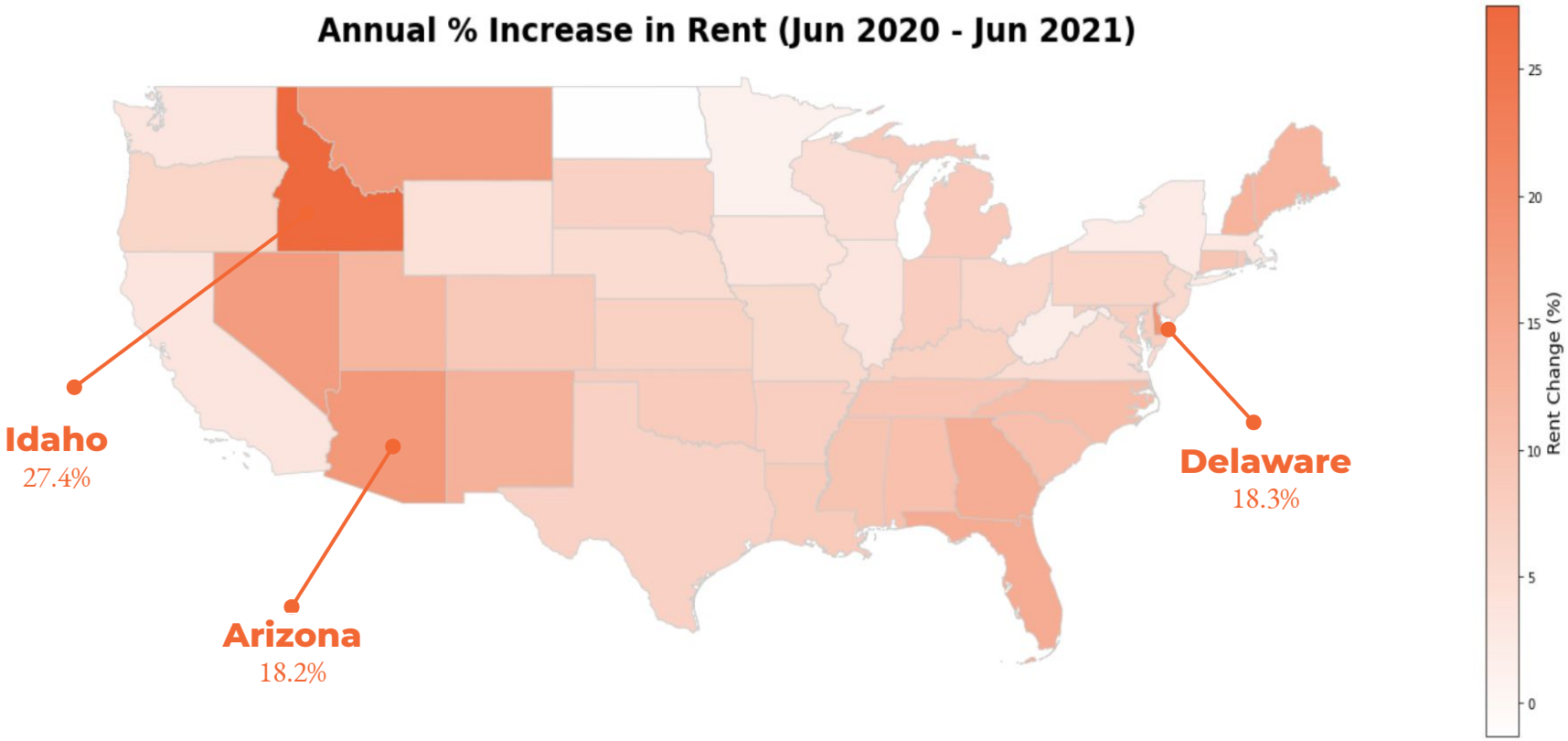


Exploratory Analysis - Statistics by Unit Size

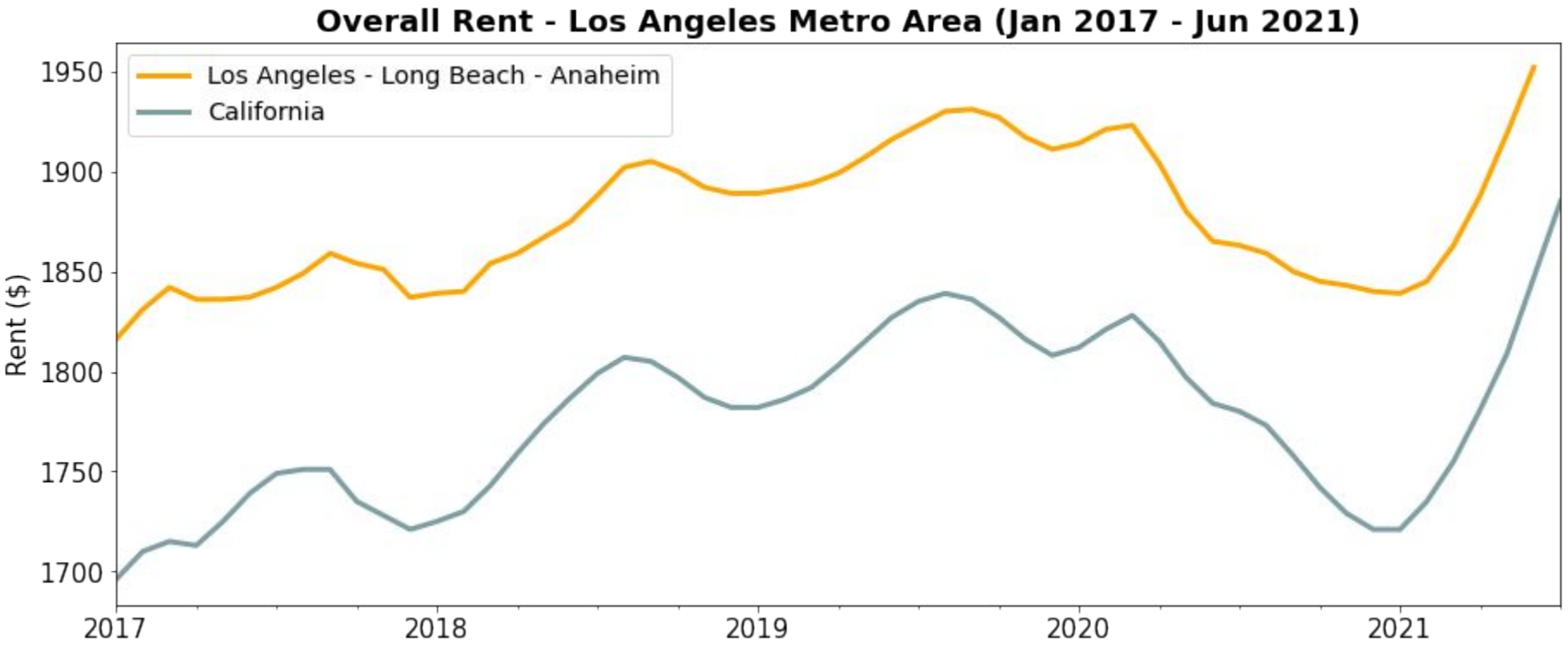
Median Rent as of July 2021:



Exploratory Analysis - National Statistics

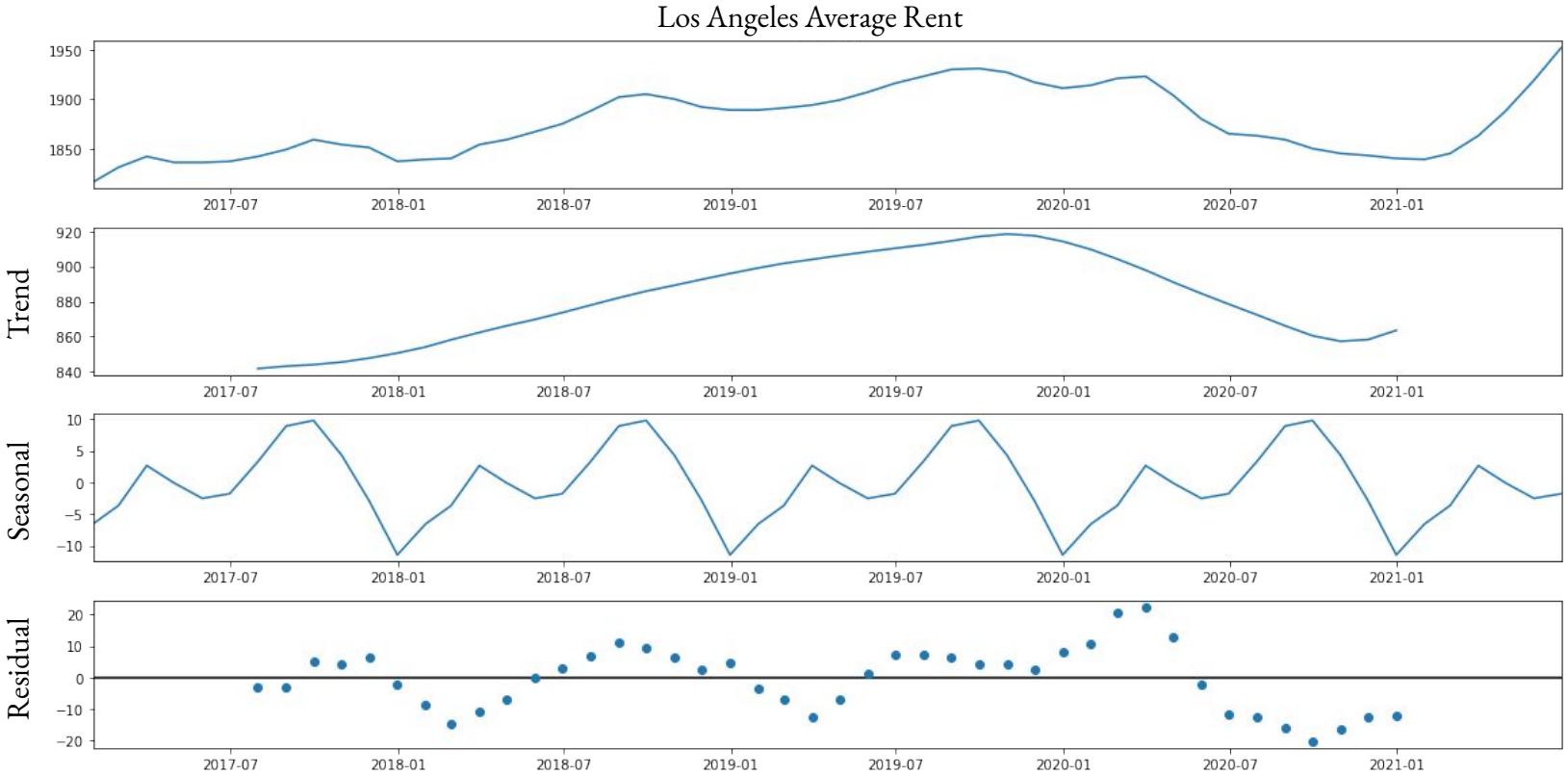


Exploratory Analysis - Historical Trends

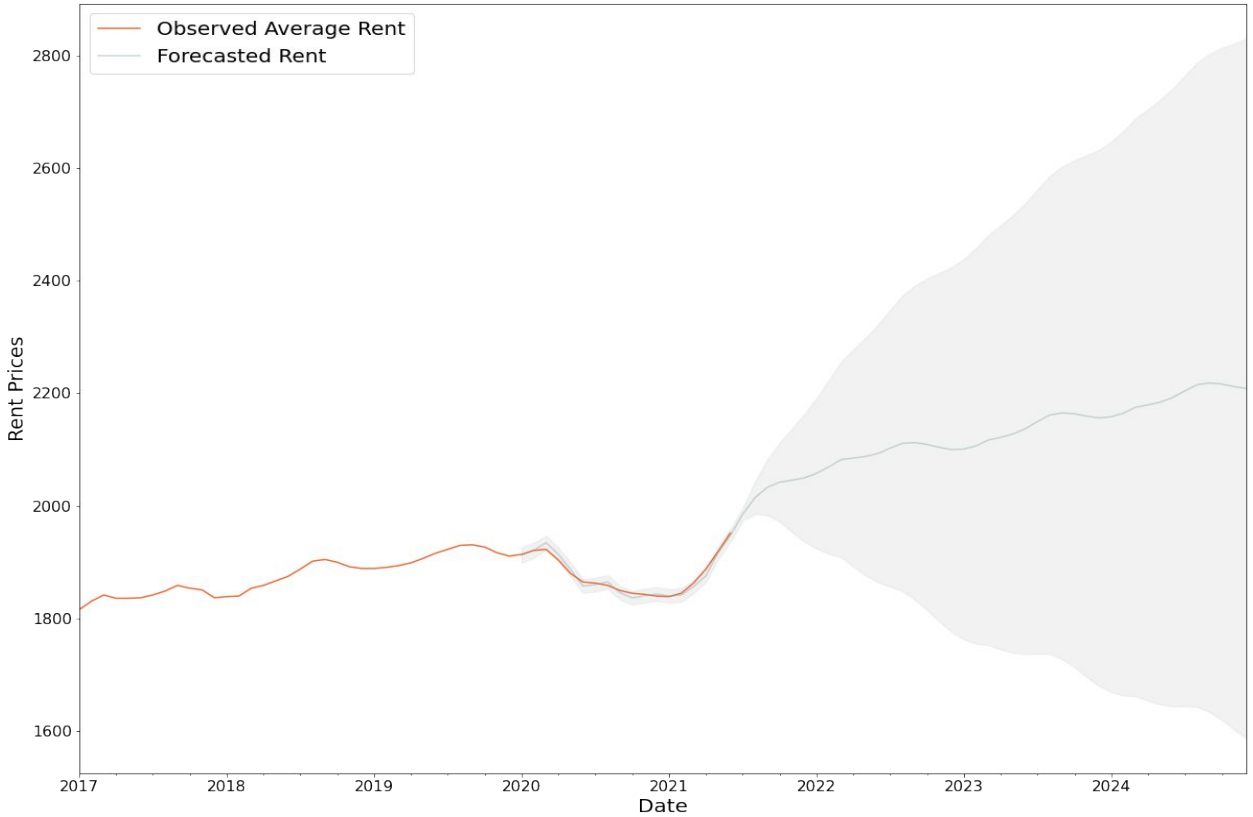


Time Series = Trend + Seasonal + Residual

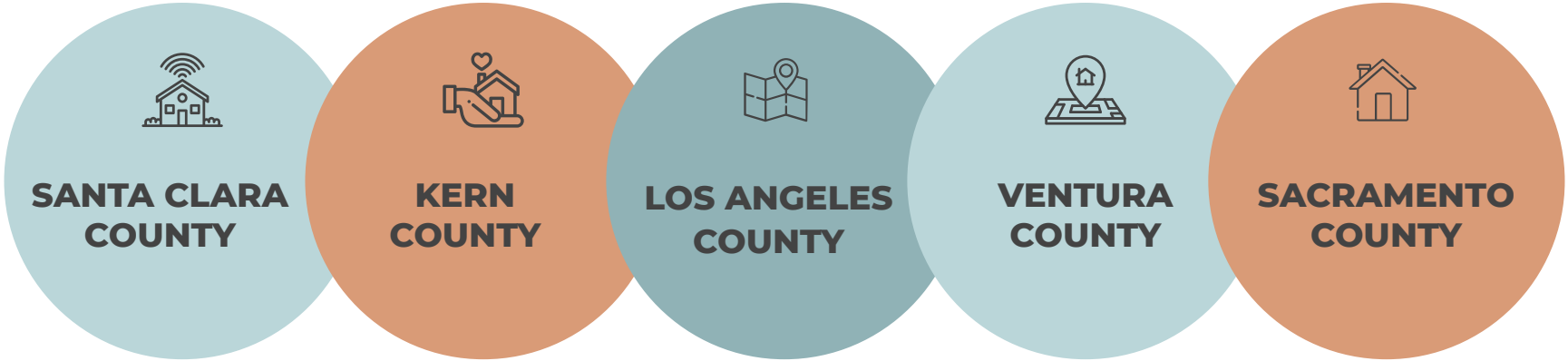
Trend Decomposition



Forecast: Los Angeles-Long Beach-Anaheim (Overall)

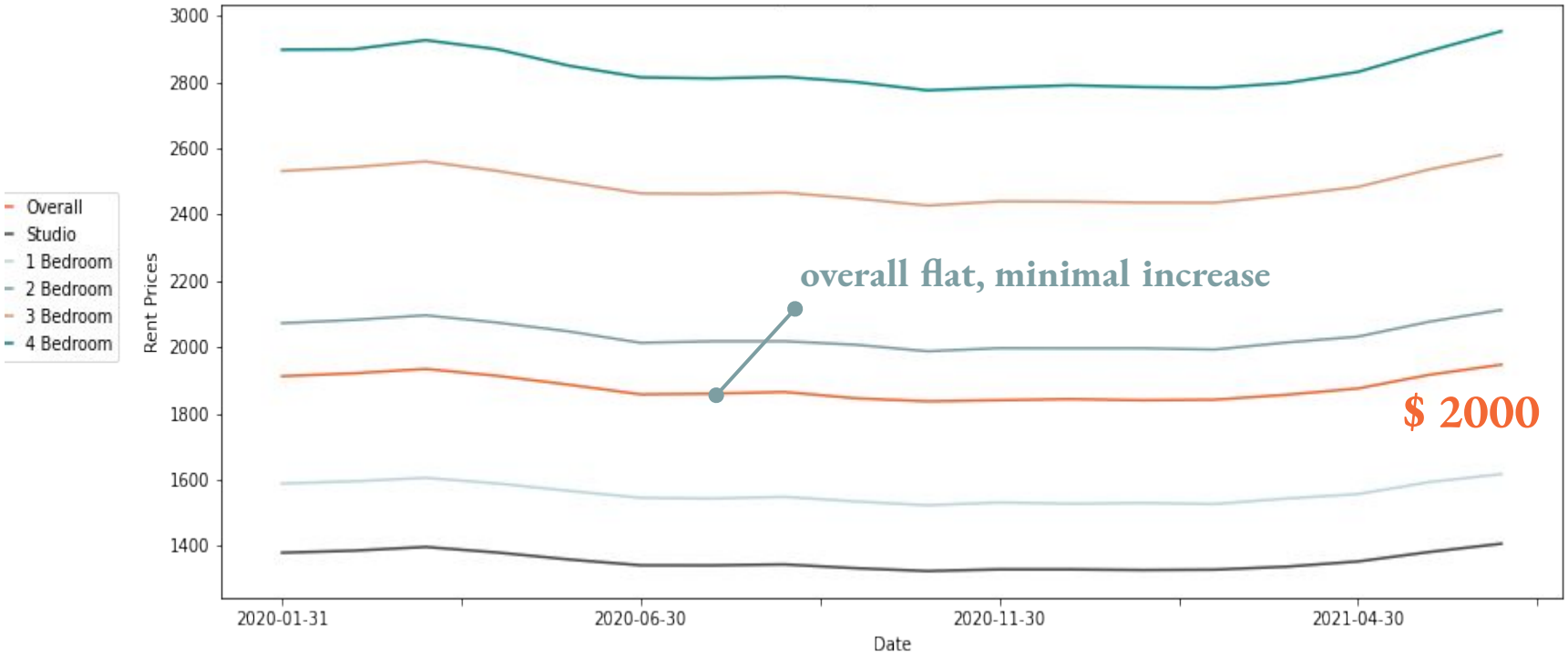


Average Rent across California

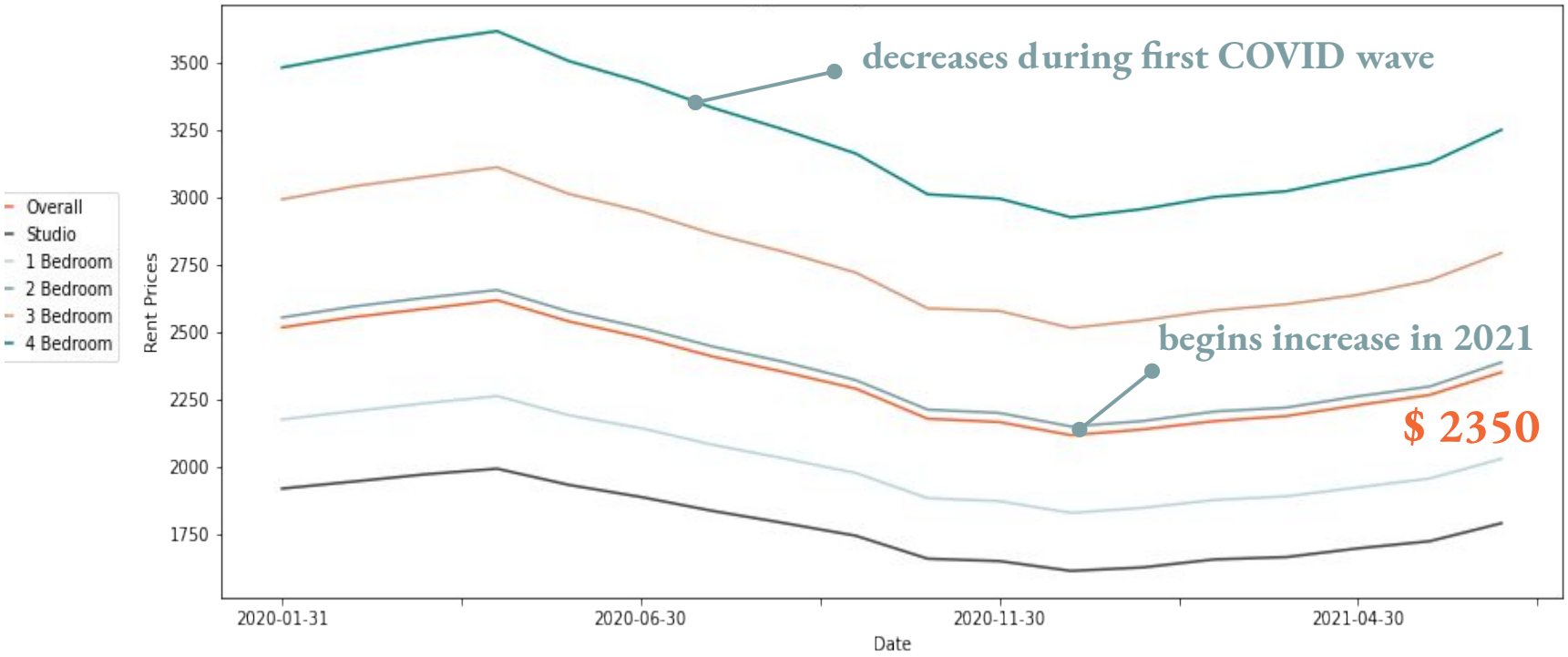


	SANTA CLARA COUNTY	KERN COUNTY	LOS ANGELES COUNTY	VENTURA COUNTY	SACRAMENTO COUNTY
2021 Observed	$ 2350	$ 1100	$ 1900	$ 2100	$ 1750
2022 Forecast	$ 2300	$ 1500	$ 2050	$ 2300	$ 2400
2025 Forecast	$ 2550	$ 3100	$ 2200	$ 2850	$ 2300

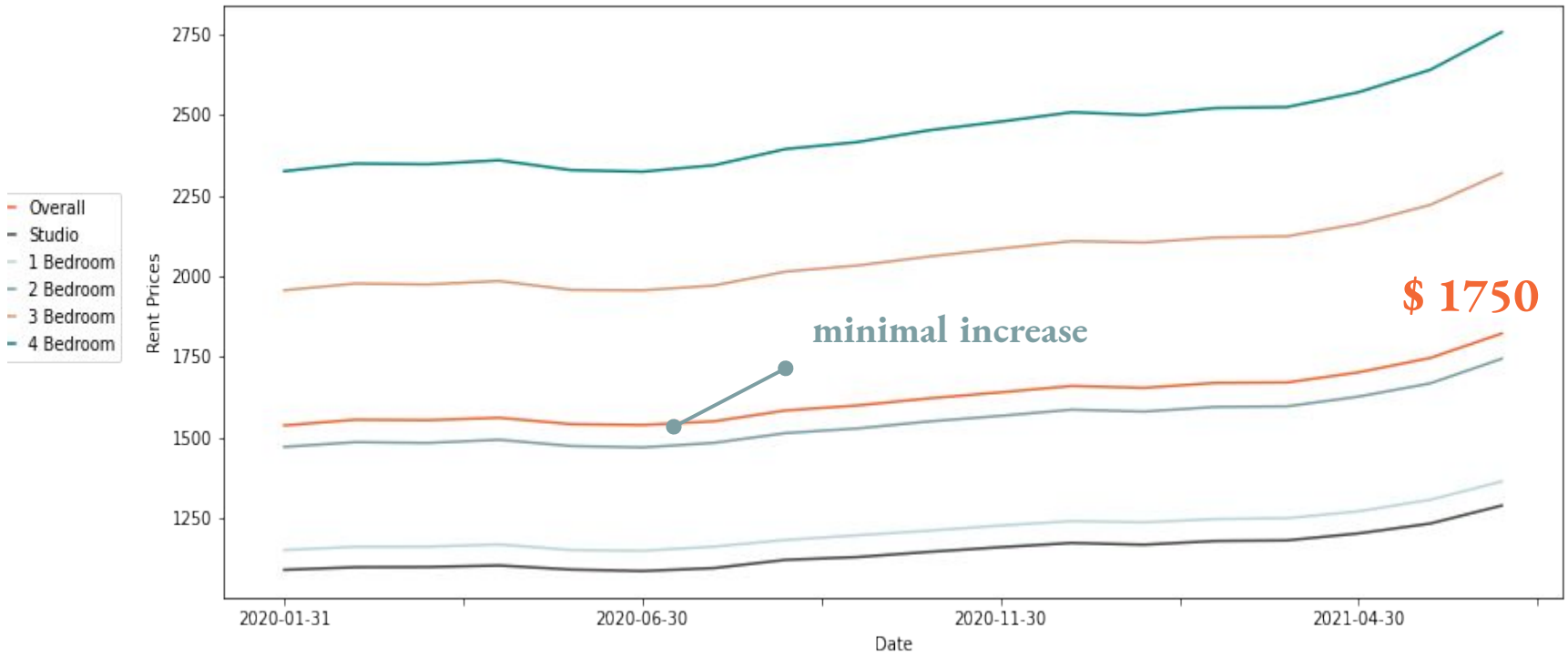
LOS ANGELES COUNTY: “Covid Effect” (2020-2021)



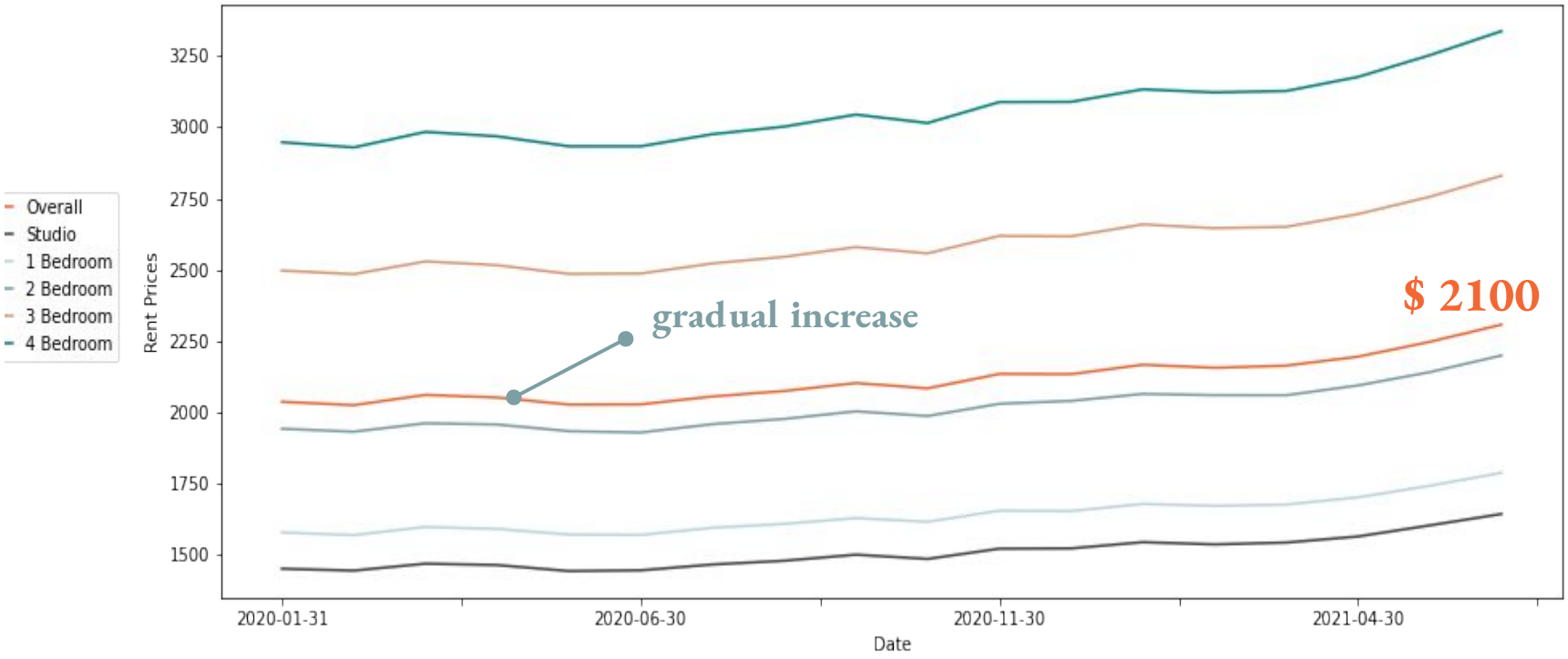
SANTA CLARA COUNTY: “Covid Effect” (2020-2021)



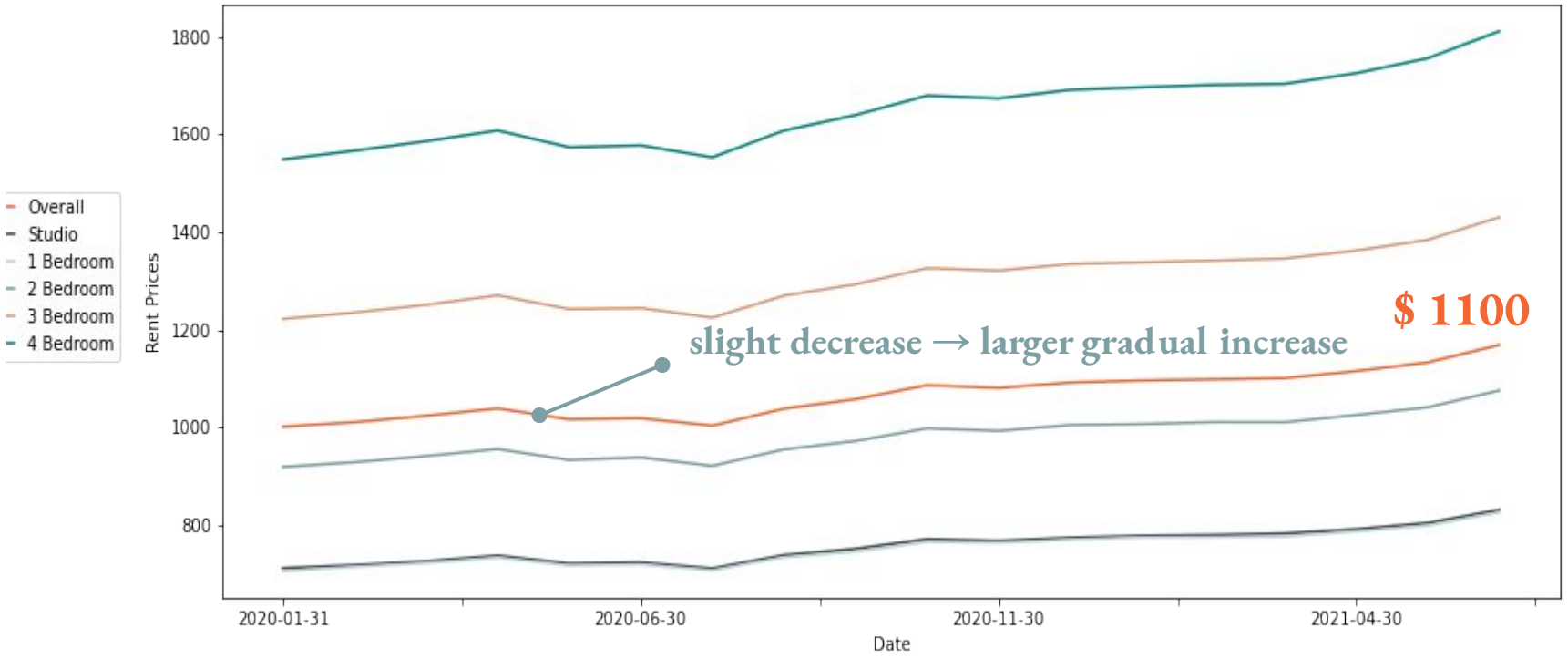
SACRAMENTO COUNTY: “Covid Effect” (2020-2021)



VENTURA COUNTY: “Covid Effect” (2020-2021)

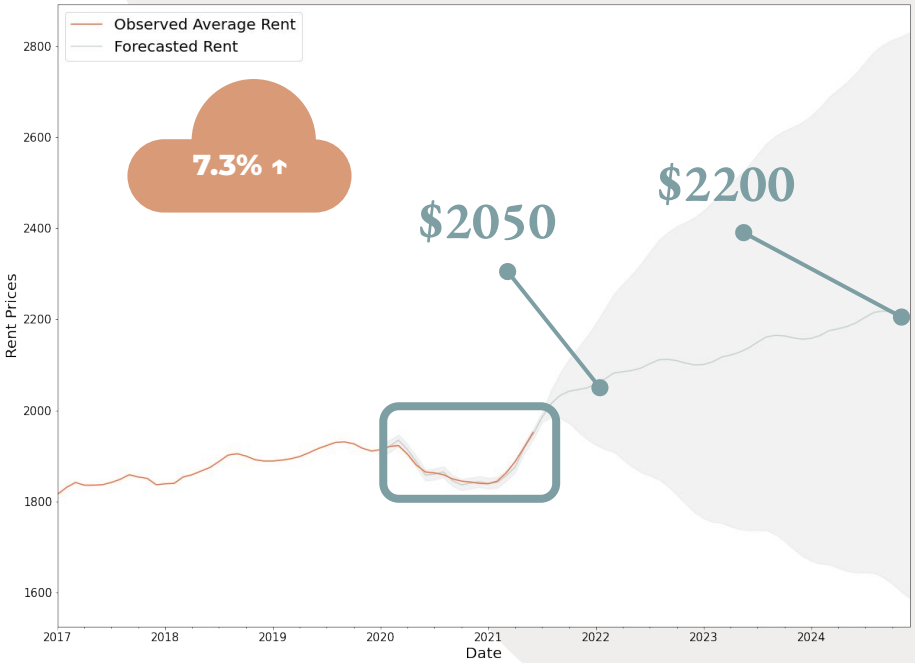


KERN COUNTY: “Covid Effect” (2020-2021)



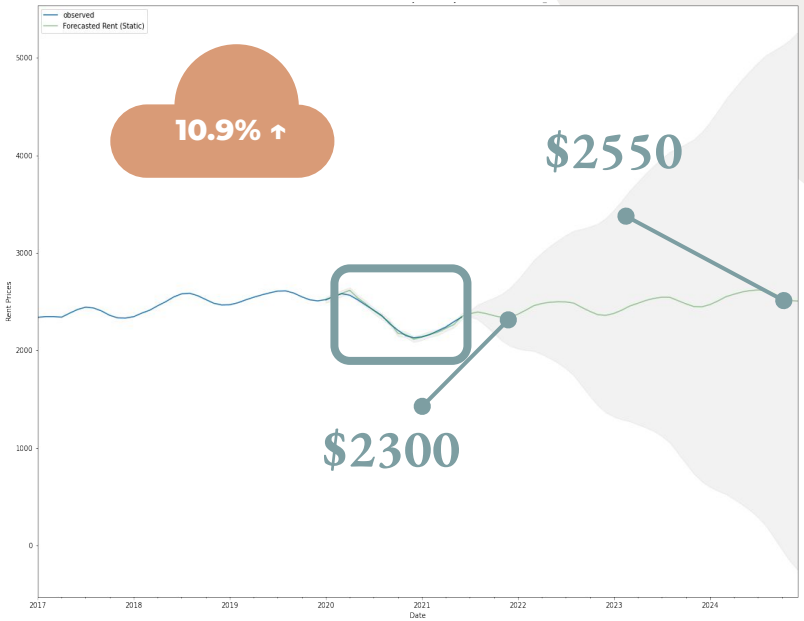
FORECAST (2022 & 2025) - Expected Increase

LOS ANGELES

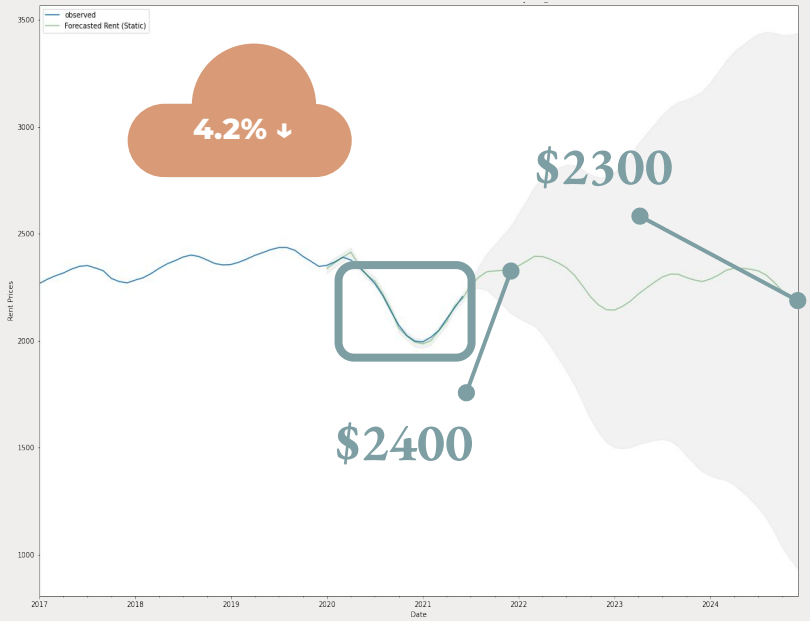


FORECAST (2022 & 2025)- Smaller Increase

SANTA CLARA

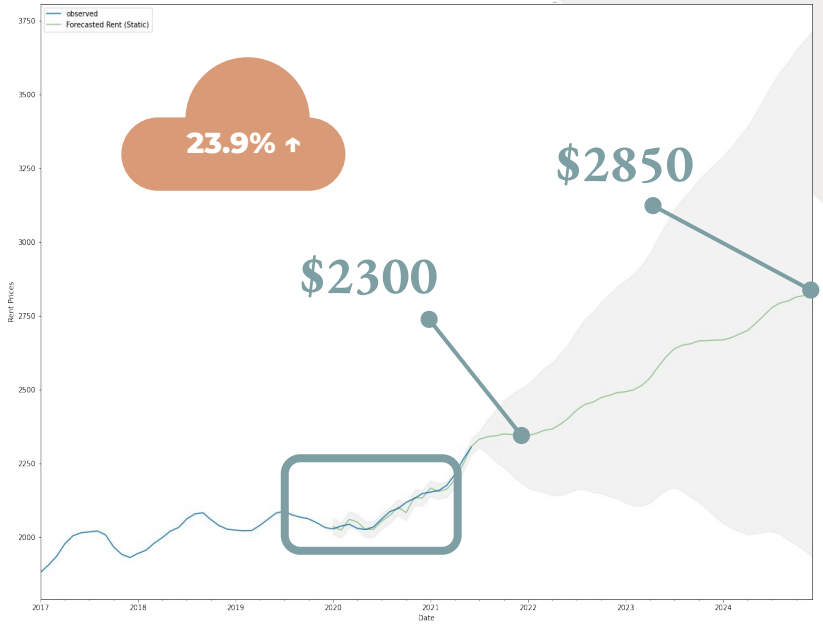


SACRAMENTO

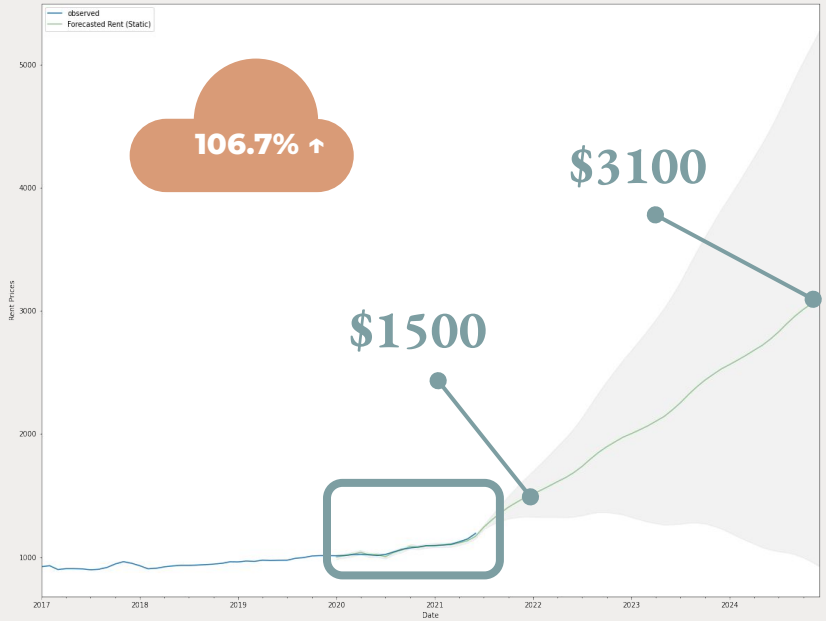


FORECAST (2022 & 2025) - Larger Increase

VENTURA

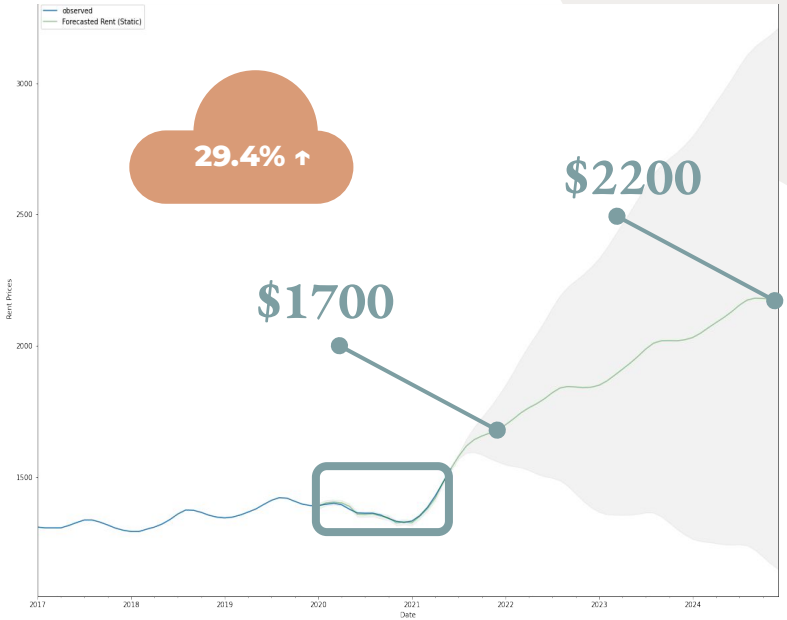


KERN

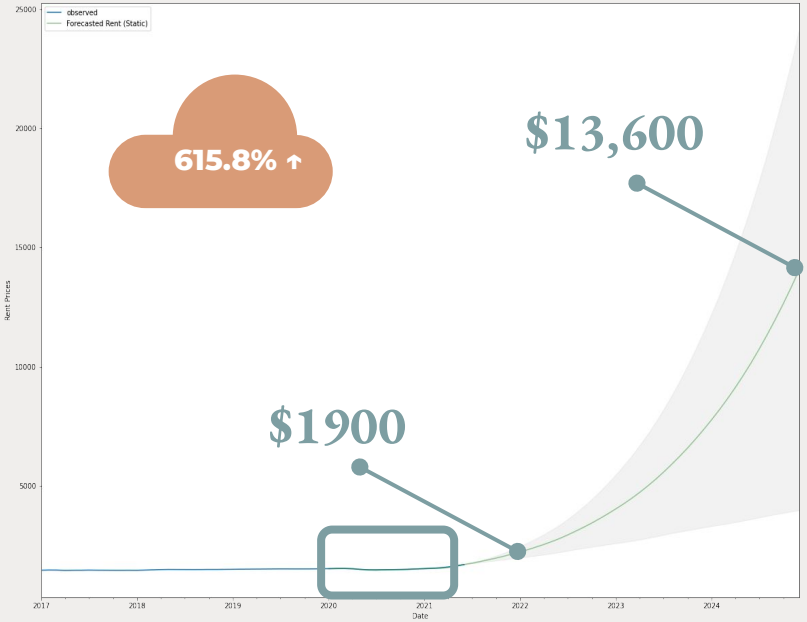


FORECAST (2022 & 2025)- Metropolitan Cities

Austin, Texas



Miami, Florida



Nationwide Rent Increase

Thank You!

ANY QUESTIONS?

RESOURCES

- **Data and Rent Estimates**
  - https://www.apartmentlist.com/research/category/data-rent-estimates

- **Time Series Forecasting with ARIMA in Python 3**
  - https://www.digitalocean.com/community/tutorials/a-guide-to-time-series-forecasting-with-arima-in-python-3