

# CAN PEOPLE AFFORD A HOUSE?

A DATA VISUALIZATION PROJECT FOCUS ON  
CALIFORNIA HOUSING MARKET  
AFFORDABILITY

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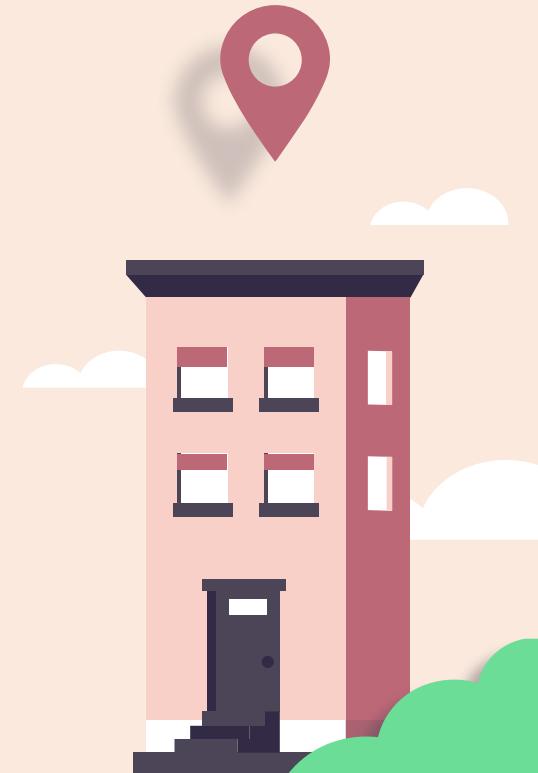
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# Dataset Introduction

Redfin

HUD

HDPulse

## Redfin Monthly Housing Market Data

Housing market activity across US counties, including home prices, inventory levels, sales counts, days on market, and other market indicators.

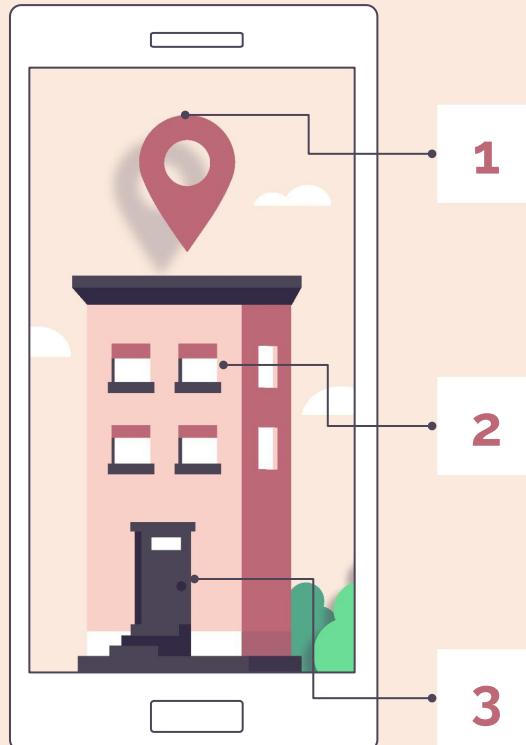
## Housing and Urban Development

Annual counts of building permits for new housing construction, broken down by single-family vs. multi-family units, with county-level geographic detail.

## HDPulse (2019-2023)

An Ecosystem of Health Disparities and Minority Health Resources. We are using median household income data and population data by county from this dataset.



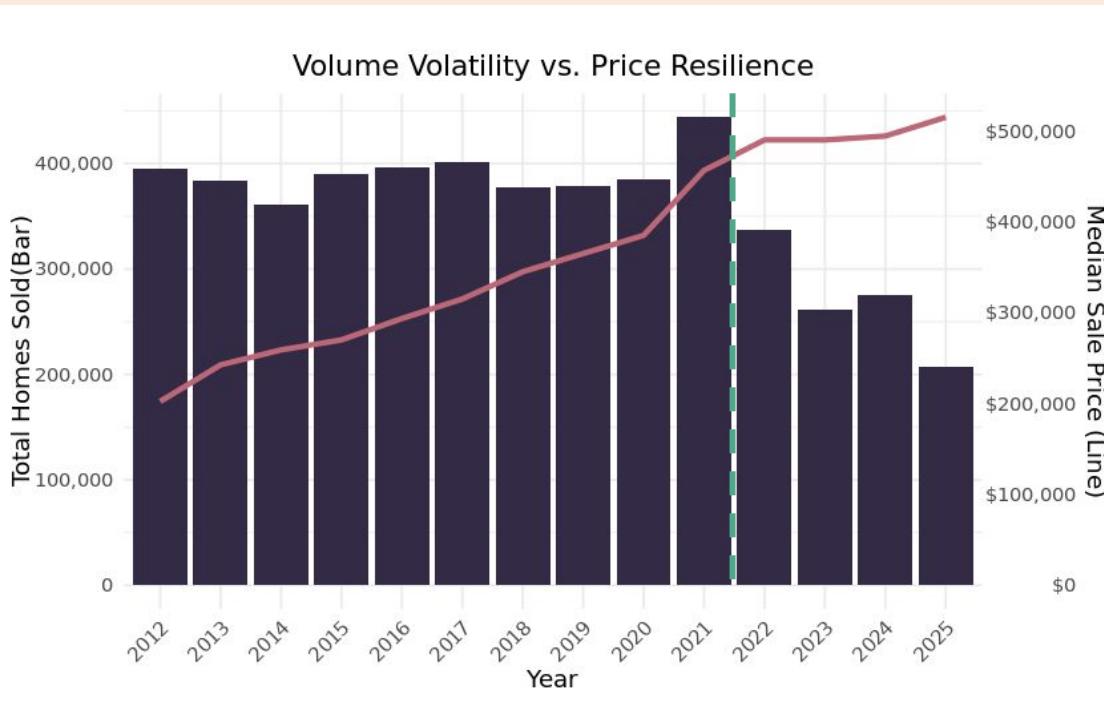


# Question of interest

1. Landscape: How is affordability distributed?
2. The “Gravity of Affordability” :  
*H1: Low affordability pushes people out*  
*H2: High demand impacts affordability*
3. Does any market adjustment mechanism on construction supply respond to price signals?

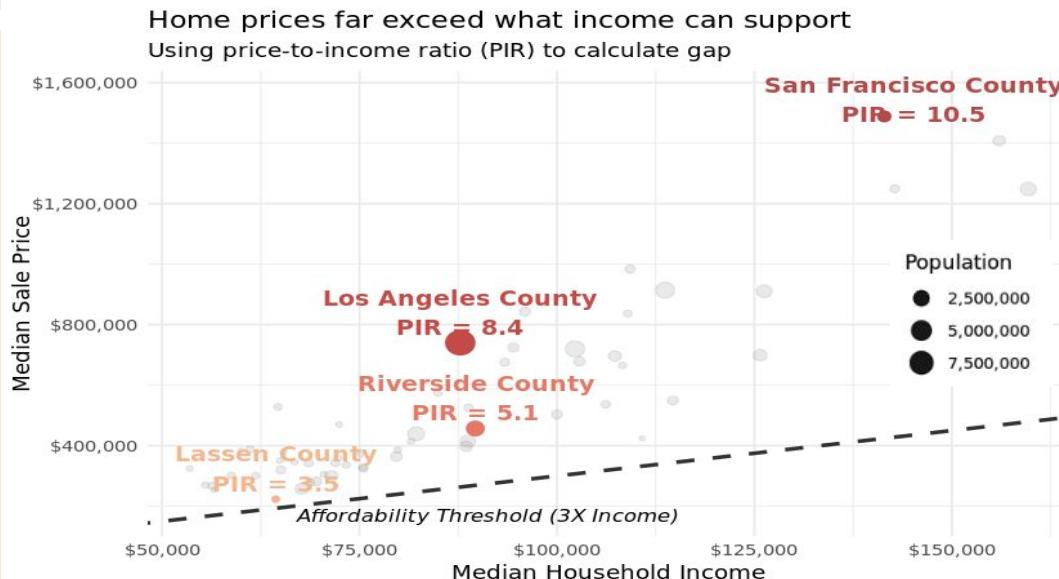


# Housing Market Overview



While transaction volume collapsed in 2022, prices remained near historic highs.

# The Affordability Gap



## Price-to-income Ratio (PIR)

Represents the years of gross income needed to buy a house. A higher ratio indicates lower affordability.

## The Extremes

### San Francisco: The "Ceiling"

Highest prices and worst affordability gap.

### Lassen: The "Floor"

Best affordability, representing the few remaining accessible markets.

## The Comparison

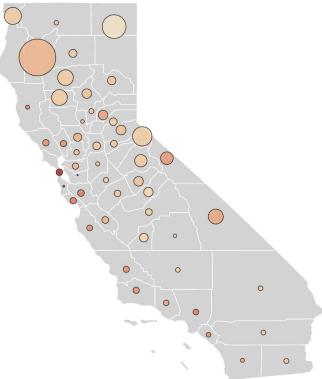
Similar Median Income (~\$88k).  
LA home prices are nearly 2x higher.



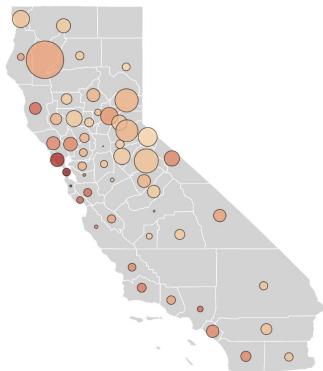
# Market Migration Map

Bubble Size: YoY housing sold change  
Color: PIR

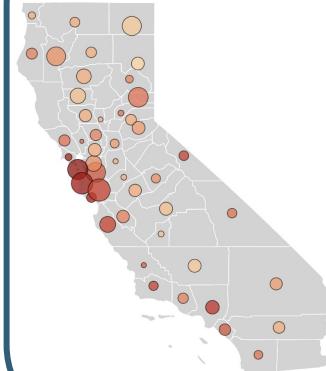
2019



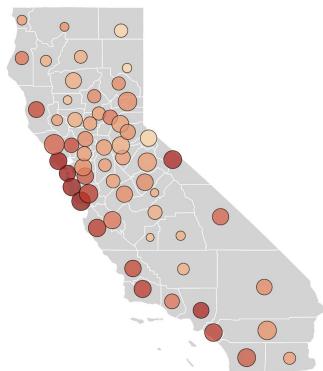
2020



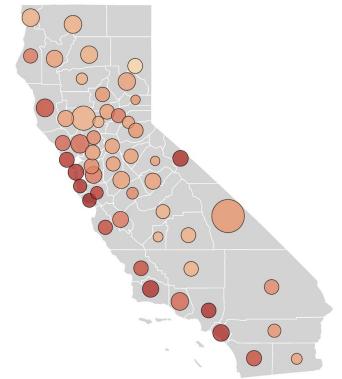
2021



2022



2023



## Phase 1 (2019-2020): Push Effect

(Validating H1)

High-PIR coastal counties saw slower growth, while Inland counties saw a surge in sales volume.



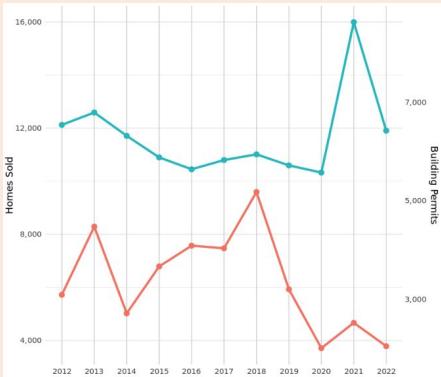
## Phase 2 (2021-2023): The Affordability Trap

(Validating H2)

Even as PIR was bad in major hubs, sales activity persisted or rebounded, which make it even worse.

# Adjustment Mechanism

## Chronic Inelasticity

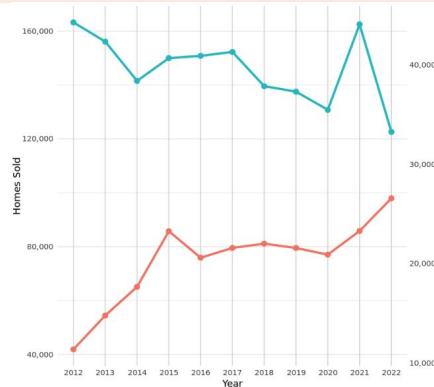


SF

PIR  
10.8

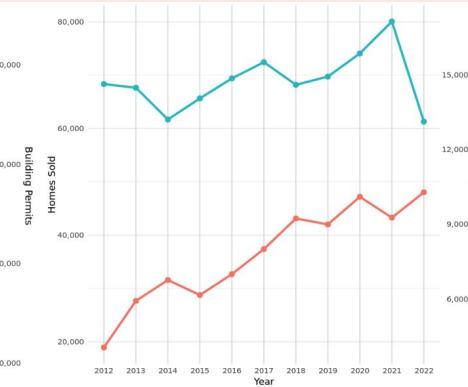
Building Permits Homes Sold

## The Supply Lag



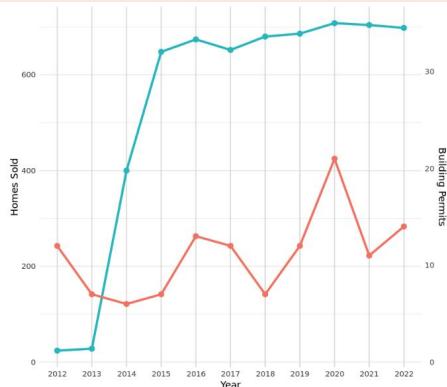
LA  
PIR 8.4

## Elastic Response



Riverside  
PIR 5.1

## Market Equilibrium



Lassen  
PIR 3.5



# Key Takeaways

## The Migration Paradox



Low affordability initially drives a "Flight to Value" toward inland counties. However, coastal demand proves inelastic. Continued buying in high-priced zones actively worsens the affordability crisis.

## The Supply Crisis



The root cause of the affordability gap is supply rigidity. In Los Angeles and SF, high prices are not triggering enough new construction to balance the market.

## Market Outlook



Without zoning reform or increased housing density in coastal hubs, the migration trend will continue to push prices up in previously affordable inland areas.



# THANKS

DOES ANYONE HAVE ANY QUESTIONS?

