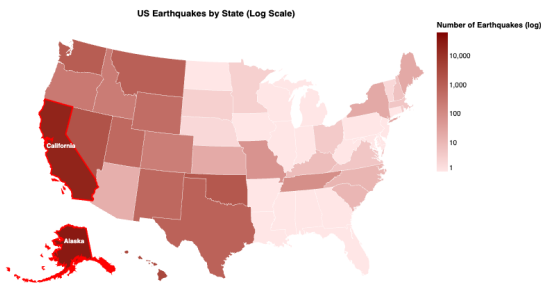


SEISMIC SHOCKS VS. MARKET SHOCKS

Do natural disasters dictate housing value in high-risk zones?

SPATIAL CONTEXT: THE "RING OF FIRE"



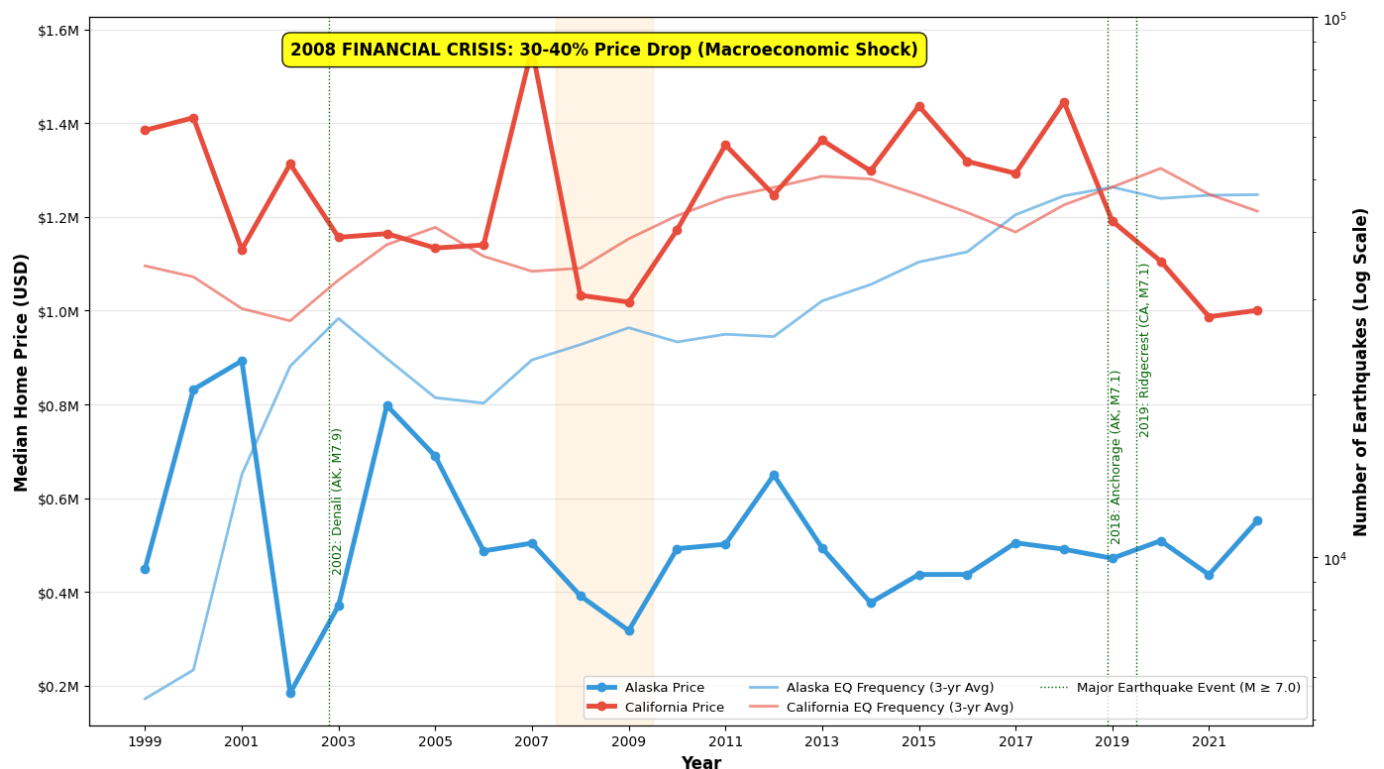
California & Alaska account for 95% of US seismic energy.

💡 The Insight: Macroeconomics > Geophysics

Despite frequent seismic activity, housing prices in AK and CA are driven by national economic trends, not ground motion.

- **Correlation (Earthquakes vs Price):** $r = -0.15$ (Insignificant)
- **Correlation (Urbanization vs Price):** $r = 0.78$ (Strong)
- **2008 Financial Crisis Impact:** Prices dropped **30-40%**.
- **Major Earthquakes Impact:** No visible price deviation after M7.0+ events.

TEMPORAL EVIDENCE (1999-2022): PRICES IGNORE SEISMIC SPIKES



1. The 2008 Crash (Yellow Zone)

The visualization highlights a massive global economic shock. **In 2008, prices in California (Red Line) plummeted by nearly 40%.** This movement is perfectly synchronized with the national recession, unrelated to any seismic anomaly.

2. The Major Earthquakes (Green Lines)

Vertical dotted lines indicate major earthquakes ($M \geq 7.0$). Notice the **2022 Denali (Alaska)** or **2018 Anchorage (Alaska)** events: Housing prices (solid lines) show **zero negative reaction**.

3. The Earthquake number rise

The light blue and red trending line show **the rise of earthquakes event 30k in 2003 to 50k in 2019.** However the real estate market trend continues its trajectory, **completely decoupled from the frequency of earthquakes.**

Methodology: Time-series analysis comparing median ZHVI (Zillow Home Value Index) against USGS Seismic Frequency data (Log Scale) for AK and CA. Correlations calculated using Pearson's r .

Data Sources: USGS Earthquake Catalog (1990-2023) • Zillow Housing Data • US Census Bureau.

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