Mini Project Idea 2: Housing and Real Estate Price

Research Question:

“How do wages influence rent prices, and do rent increases lead or lag wage growth across different regions?”

Motivation:

I think rent and wages together determine whether people can actually afford to live where they work or study. If pay rises but rents jump first or grow faster then wages, households feel squeezed even when incomes are high. However, if wages typically move first, the pressure may ease. Knowing the direction and timing of this relationship helps cities forecast affordability, guides when to adjust minimum wages or cost-of-living supports and shows whether income boosts will improve living standards or just get absorbed by higher housing costs. Moreover, the regional angle matters too because housing markets don’t behave the same everywhere. Therefore, measuring how wages influence rents and whether rent changes lead or lag wages across different regions can inform where to prioritize new housing, how to target renter assistance, and how employers, colleges, and local governments plan for salaries, stipends, and housing policy.

Proposed Data Sources:

I will compile regional time series on rents at the metro, county, or city level and pair them with regional measures of pay or personal income (quarterly or annual). I will include a general price index so both series can be analyzed in real terms. To study differences across places, I will add indicators of housing supply and regulations such as permits or completions, simple measures of zoning restrictiveness. I will also incorporate migration and population-change indicators to capture demand pressure, along with contextual controls like renter share, population density, vacancy, unemployment, and housing inventory or turnover.

Methodology

I will first choose a common geography (such as metro areas or counties) and put rent and wage series on the same timeline by converting everything to the same frequency (e.g., quarterly). I’ll create simple growth rates (year-over-year or quarter-over-quarter), and, if needed, adjust both

for inflation so results are in “real” terms. To see which moves first, I’ll use three easy checks: (1) lead–lag correlations that show whether rent changes line up more strongly with earlier or later wage changes; (2) predictive tests that ask whether past wage growth helps forecast next period’s rent growth (and vice versa); and (3) a panel regression with region and time fixed effects that summarizes how rent responds over several future periods to a wage change, and how wages respond to a rent change. Throughout, I’ll show clear visuals (lines, bar charts, and simple maps), and run robustness checks to make sure the findings don’t depend on one narrow setup.

Challenges

The main challenges are data quality and timing. Rent data often reflects asking rents, not what tenants actually pay after concessions, while wage data are usually quarterly and rents are monthly, so matching them can be messy. Some regions especially smaller counties have thin or missing data, and series can be revised later. It’s also hard to separate cause from coincidence: wages and rents can both be pushed by the same third factors (migration surges, new construction, policy changes), so simple lead–lag patterns may look causal when they aren’t.