

Interest Rate Lag Working Paper — Methods & Protocol (IRL-WP-2025-11-PRG-001)

Abstract

This document specifies variables, transformations, lag windows, controls, and sensitivity tests used to quantify the 12–18 month transmission from policy rate changes to housing activity and observed price indices. Results are illustrative and structured for replication using the anonymized summary dataset.

Variables & Sources

Key variables: (1) Policy dates and guidance windows; (2) Primary 30Y mortgage rate (basis points); (3) MBS OAS/primary–secondary spread (bps); (4) Affordability payment index (monthly payment at median price and prevailing rate); (5) Sales volume (SA); (6) Active inventory; (7) Price indices (Case-Shiller 20-city SA, FHFA HPI); (8) Lock-in proxy (share of outstanding mortgages with rates <4%); (9) Internal indices: BDI/RCI/FOS (banded).

Lag Windows & Models

We evaluate lags of 3, 6, 12, and 18 months from policy date t_0 . For each window, we compute changes in affordability, sales volume, inventory, and price indices. We map bands for BDI (demand), RCI (risk complexity), and FOS (friction) to translate timing into expected net outcomes. Pass-through depends on MBS spreads and bank funding.

Transformations

Percent changes are computed as log-differences. Payment changes use standard annuity formulas for principal/interest with banded DTI thresholds. Outliers are trimmed at 2.5% tails. We report medians and interquartile ranges.

Controls

Stratify by price band and metro supply tightness (months of supply). Include a lock-in proxy (sub-4% share) to capture mobility constraints. Include a control for jumbo vs. conforming share shifts when available.

Sensitivity & Robustness

We report ranges under (a) tighter/looser credit boxes, (b) narrower/wider MBS spreads, and (c) alternative index lag assumptions (publication windows). We also show scenarios where well-priced listings beat cash after mobility returns.

Governance & COI

Preregistration: IRL-WP-2025-11-PRG-001 (summary public; full protocol available to qualified auditors under NDA). Funding: Local Home Buyers USA. Author independence: methods/reporting controlled by PropTechUSA.ai. External advisory panel (appraisal, statistics, title) reviews for red flags before versioned releases.

Limitations

Indices BDI/RCI/FOS/CoCI are internal constructs calibrated to our operating markets; generalization requires local reweighting. Observed index series (e.g., Case-Shiller) have intrinsic publication lags. Not investment advice.

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Metadata & Contact

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Replication: Anonymized summary dataset available; codebook on request.