

# ZIP-Level Home Price Forecasting

A practical risk signal for mortgage underwriting and portfolio monitoring

## Improving ZIP-Level Home Price Forecasting

Benefits for Mortgage Lenders

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# Why This Complements Existing Lender Tools

## Where this fits in your workflow

- Adds a consistent ZIP-level 1-month outlook to complement AVMs, appraisals, and review queues.
- Helps prioritize manual review when short-term collateral risk is elevated
- Supports faster geographic scanning than loan-by-loan monitoring alone

# Outputs That Map to Decisions

## 1) Next-month expected value

Forecast next month's typical home value for each ZIP.

Example: "Expected value next month  $\approx$  \$372K".

## 2) Downside risk flag

Triggers when forecasted next-month return  $\leq -1\%$ .

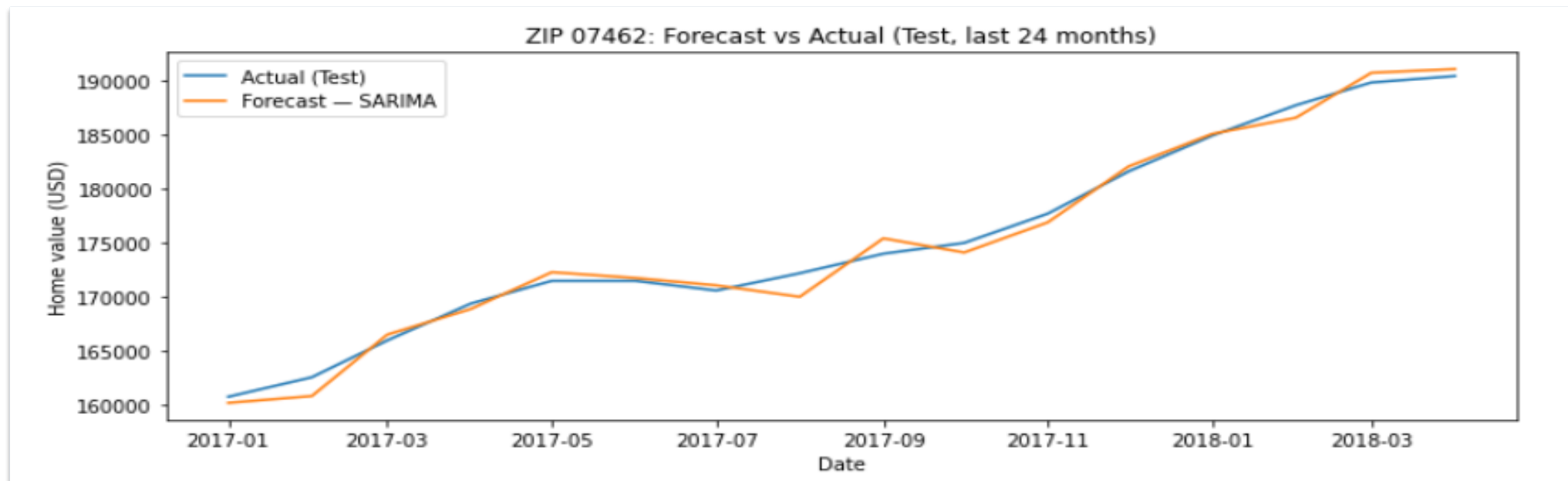
Example: "Route this ZIP to review / tighten terms."

# How the Signal Earns Trust (Simple → Smarter)

## Modeling approach (business-first)

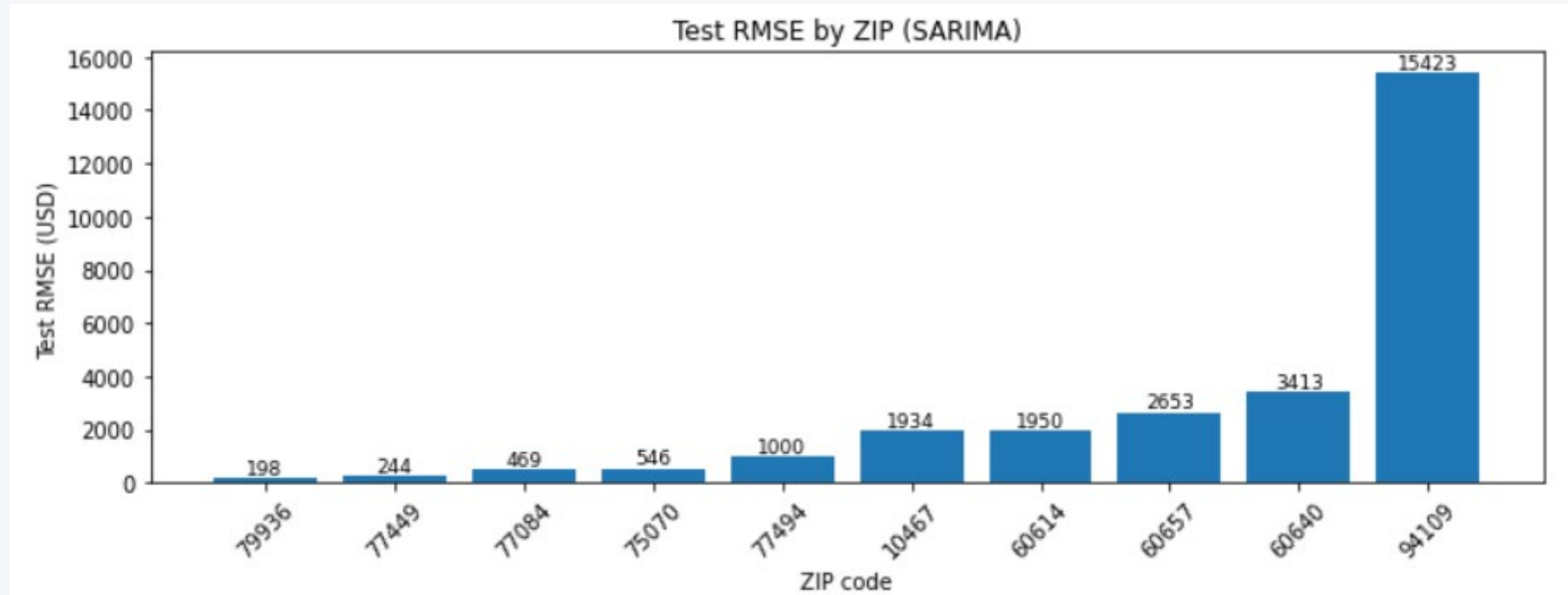
- Start with a baseline: “next month = last month” (the bar to beat)
- Add trend and seasonality only when it improves validation accuracy
- Select the final approach using RMSE/MAE, then evaluate once on a holdout test

# Example ZIP: Actual vs Forecast (Holdout Test)



Key takeaway: the seasonal model tracks recurring market patterns more closely than a simple persistence baseline.

# Portfolio View: Where to Focus Attention



Interpretation: each bar represents one ZIP. Lower error = a more reliable month-ahead signal for monitoring and review prioritization.

# How This Complements Existing Tools

## Examples of operational use

- Underwriting: tighten pricing or LTV tolerances in ZIPs flagged for downside
- Portfolio monitoring: route flagged ZIPs into geographic review queues
- Risk management: track alert hit-rate over time as a risk control

# Next Steps to Increase Business Value

## Roadmap

- Add macro drivers (rates, unemployment) to improve stress sensitivity
- Add loan-level context (LTV, DTI) to better calibrate action thresholds
- Scale evaluation across many ZIPs and monitor performance drift monthly