

Buffered TAR for Dollar-Regime-Sensitive Risk & Allocation

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1) Problem & Approach

Two-regime buffered AR (inside vs outside an inaction band) driven by U.S. dollar proxy; explicit band avoids spurious switches.

2) Model

With driver z_{t-d} , center γ and half-width b , define $I_{in}=1(|z-\gamma|\leq b)$. $y_t = x_t^T \phi^{(in)} \cdot I_{in} + x_t^T \phi^{(out)} \cdot (1-I_{in}) + \varepsilon_t$, $x_t=[1, y_{t-1}, \dots, y_{t-p}]$.

3) Estimation

Conditional OLS within each regime; grid/profile search over (p,d,γ,b) minimizing SSE (validation loss optional).

4) Repro

`pip install -r requirements.txt` → run notebooks 01 & 03; notebook 03 has an offline CSV fallback.

5) Artifacts

- Params CSV (figs/params_buffered_two_regime.csv)
- Plot (figs/buffered_two_regime_plot.png)
- Repo: src + notebooks (01,03)