VecViz VIX & Rates 5d Fwd Signal Report

2026-04-28

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We present current 5d directional signals for the VIX and select treasury yields, and their associated out-of-sample performance, below. The signals are based on Random Forest machine learning models of VecViz model inputs and outputs since 2/1/2022. An All-Tickers RF is fit on the 2022-01-31 → 2024-04-30 in-sample window and the top 16 features are selected from a 168-column universe (per-day mean, cross-ticker dispersion, and the 3-day MA / 10-day MA ratio of each base column compete on equal footing). The **All-Tickers walk-forward** refits a Random Forest every 6 months on the entire VecViz ticker universe (per-day means and cross-ticker dispersion); the **Winner-Sector walk-forward**, at each 6-month boundary, runs a sector tournament and trains its next-window model on the winner sector's tickers only. Both walk-forwards are locked to the 16 selected features (the per-target list is in the appendix). See the target detail sections for the exact numeric definitions of "Flat", etc. Note that "Flat" for yields is typically a +/- 5 to 10bp range.

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Current 5d Forward Forecasts

Target	Latest Date	Level	All-Tickers	Winner Sector	Winner Pred.	Combined
VIX	2026-04-24	18.71	Higher	Healthcare	Lower	Flat
USTY_2yr	2026-04-24	3.785	Flat	Homebuilders	Lower	Lower
USTY_10yr	2026-04-24	4.31	Higher	Homebuilders	Lower	Flat

Performance Since Start of Test Period on 4/30/2024

Target	All-Tick Acc	Winner Acc	Combined Acc	All-Tick DirAcc	Winner DirAcc	Combined DirAcc
VIX	45.01%	42.16%	42.97%	66.46%	61.23%	67.27%
USTY_2yr	32.18%	38.29%	40.73%	45.81%	71.84%	68.39%
USTY_10yr	33.81%	39.31%	40.53%	47.45%	71.54%	60.43%

VIX

Tercile Bands for VIX (fold trained through 2026-04-16)

Tercile	5-Day Forward Change (Δ)
Lower (T0)	-22.2100 < Δ < -0.9800
Flat (T1)	-0.9800 < Δ < +0.6100
Higher (T2)	+0.6100 < Δ < +30.5600

Latest Signals

- **Most recent ModelDate**: 2026-04-24
- **VIX level on that date**: 18.7100
- **All-Ticker prediction**: **Higher (T2)**
- **Current Winner Sector**: **Healthcare**
- **Winner-Sector prediction**: **Lower (T0)**
- **Combined (All x Winner) prediction**: **Flat (T1)**

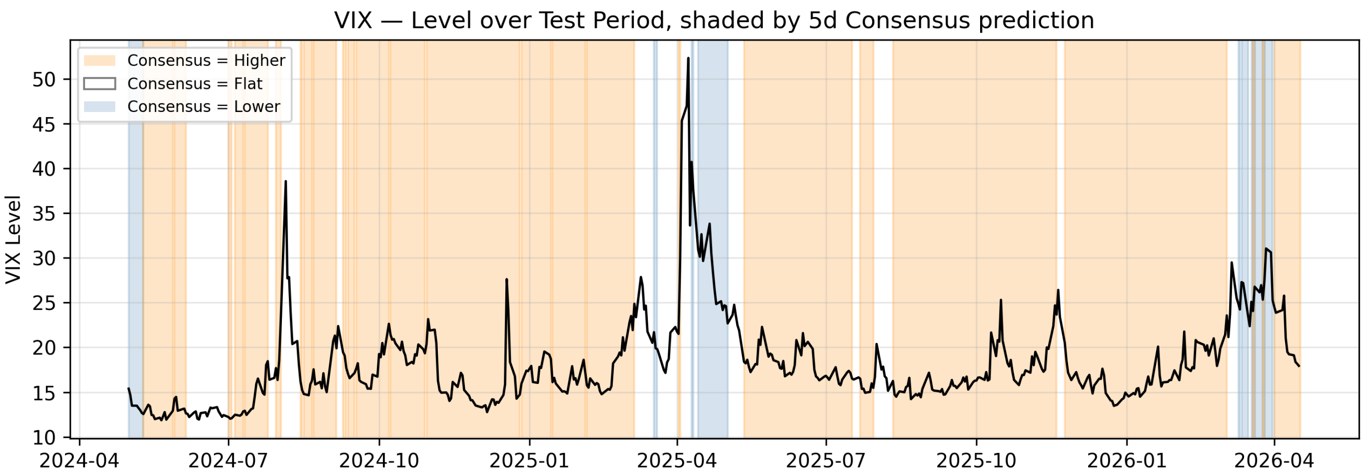


Figure 1: VIX — daily level over the test period; shading reflects each ModelDate's Combined consensus prediction (orange = Higher, no shade = Flat, blue = Lower).

Winner-Sector History (per 6-month walk-forward window)

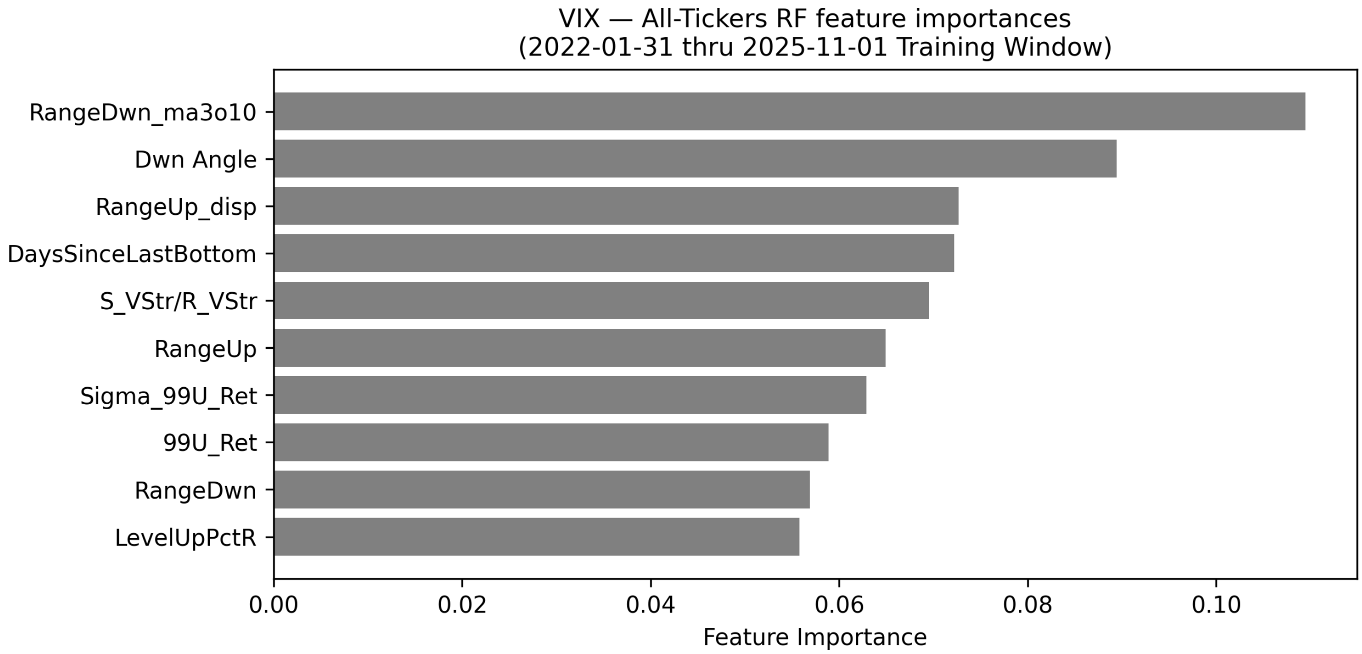
	Window Start	Window End	Winner Sector	Pool Size
0	2024-05-01	2024-10-31	Small Cap	83862
1	2024-11-01	2025-04-30	Mag7	102514
2	2025-05-01	2025-10-31	Banks	120131
3	2025-11-01	2026-04-24	Healthcare	138466

Winner-Sector Tickers — `Healthcare` (25 tickers)

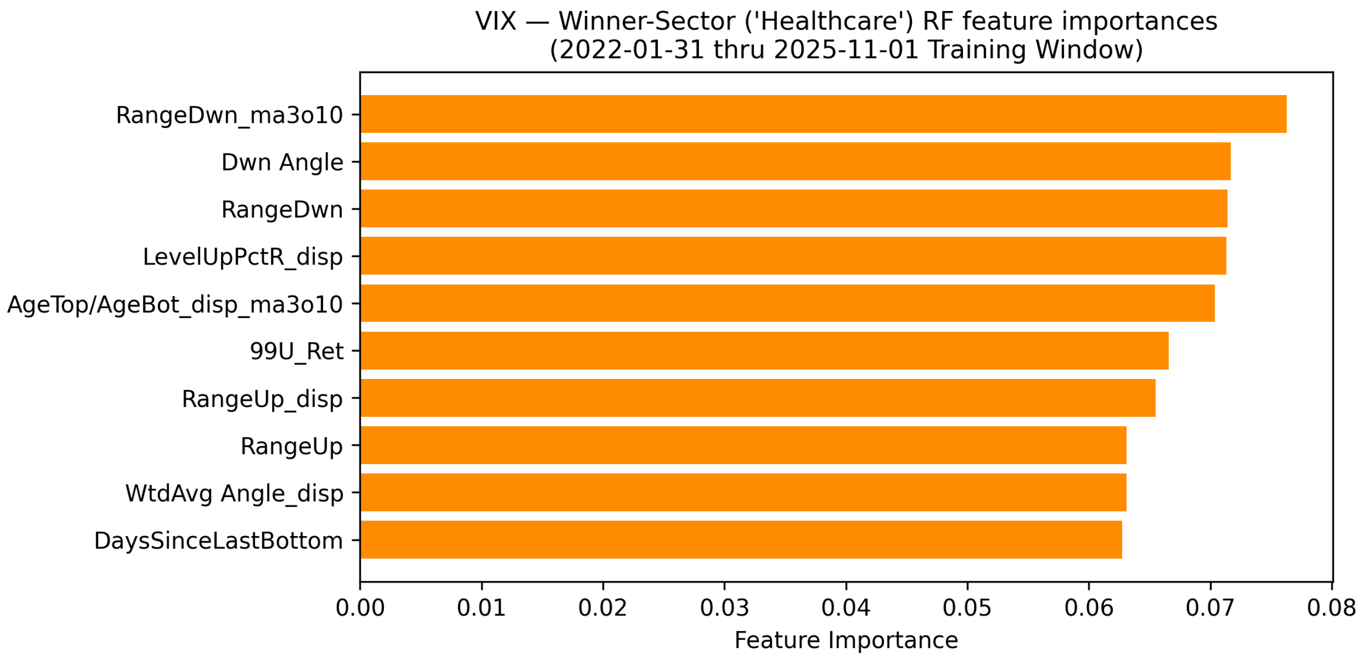
ABBV, AMGN, AZN, BHC, BIIB, BMY, CAH, CNC, CVS, CYH, ELAN, GILD, GSK, HCA, ISRG, JAZZ, LLY, MRK, NVS, PRGO, SNY, TEVA, THC, UNH, ZTS

Top Features — models used for prediction on 2026-04-24

All-Tickers model



Winner-Sector model — `Healthcare`



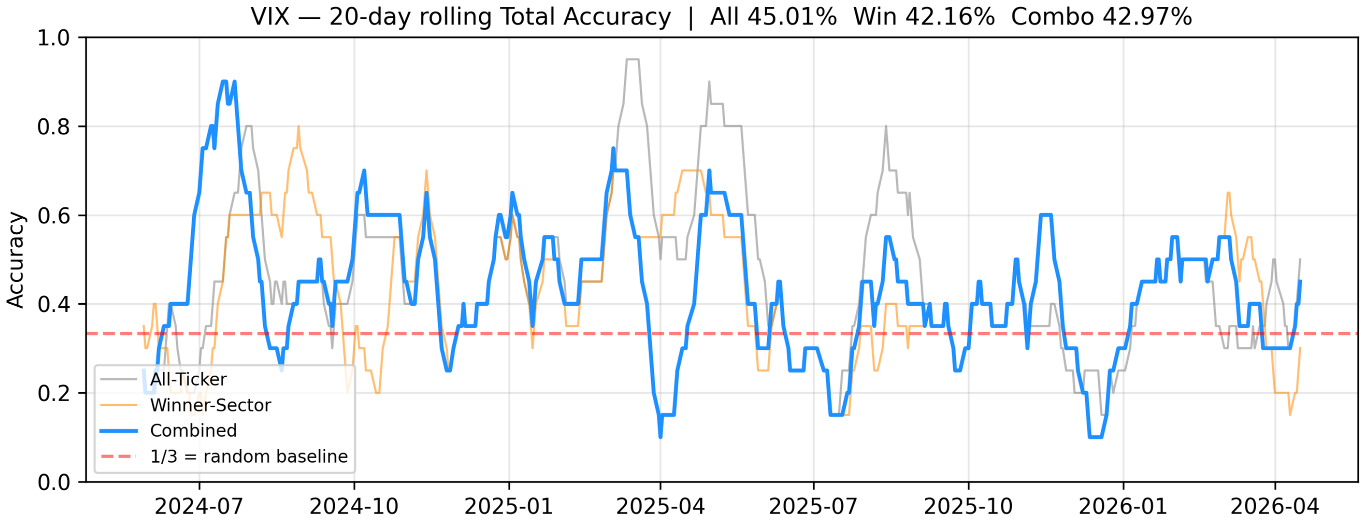


Figure 2: 20-day rolling 5d Forward Total Accuracy (exact Higher / Flat / Lower tercile match) for All-Ticker, Winner-Sector, and Combined classifiers.

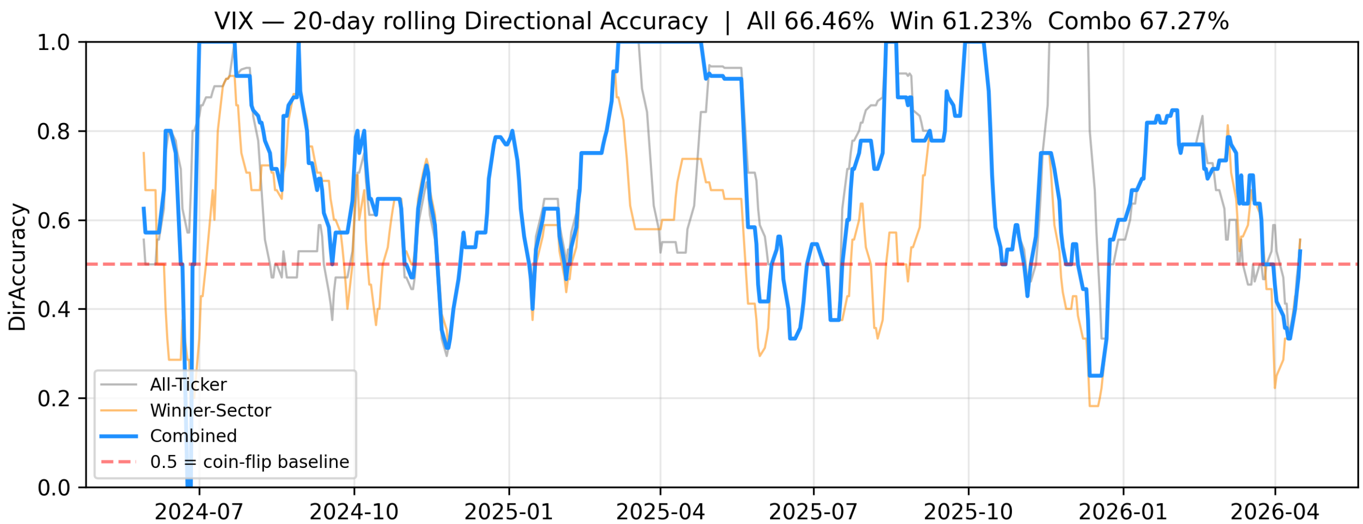


Figure 3: 20-day rolling 5d Forward Directional Accuracy (non-Flat predictions and outcomes) for All-Ticker, Winner-Sector, and Combined classifiers.

USTY__2yr

Tercile Bands for USTY__2yr (fold trained through 2026-04-16)

Tercile	5-Day Forward Change (Δ)
Lower (T0)	-1.1200 < Δ < -0.0400
Flat (T1)	-0.0400 < Δ < +0.0700
Higher (T2)	+0.0700 < Δ < +0.7000

Latest Signals

- **Most recent ModelDate**: 2026-04-24
- **USTY__2yr level on that date**: 3.7850
- **All-Ticker prediction: Flat (T1)**
- **Current Winner Sector: Homebuilders**
- **Winner-Sector prediction: Lower (T0)**
- **Combined (All x Winner) prediction: Lower (T0)**

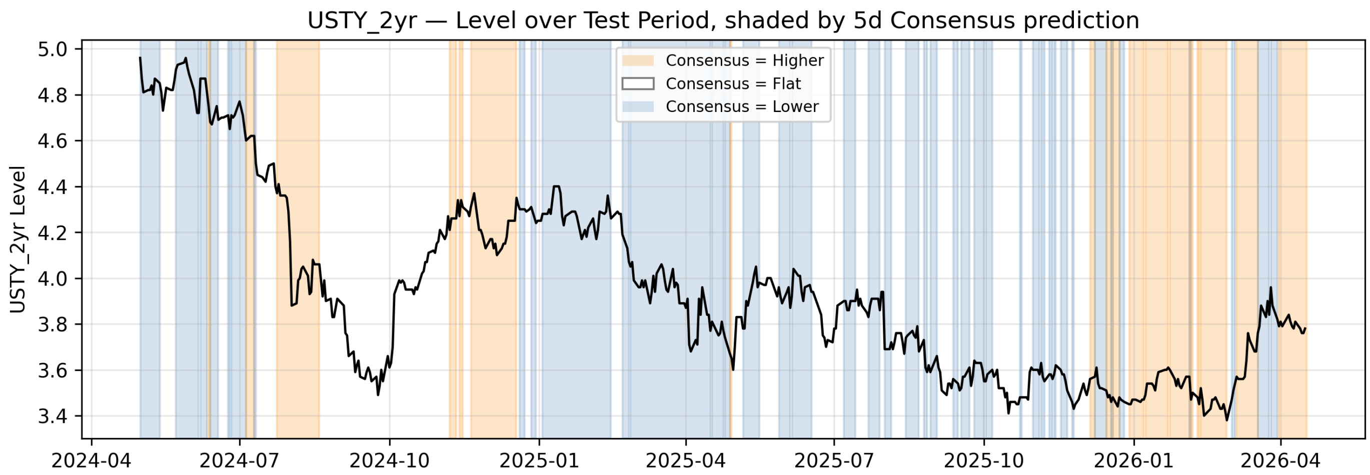


Figure 4: USTY__2yr — daily level over the test period; shading reflects each ModelDate's Combined consensus prediction (orange = Higher, no shade = Flat, blue = Lower).

Winner-Sector History (per 6-month walk-forward window)

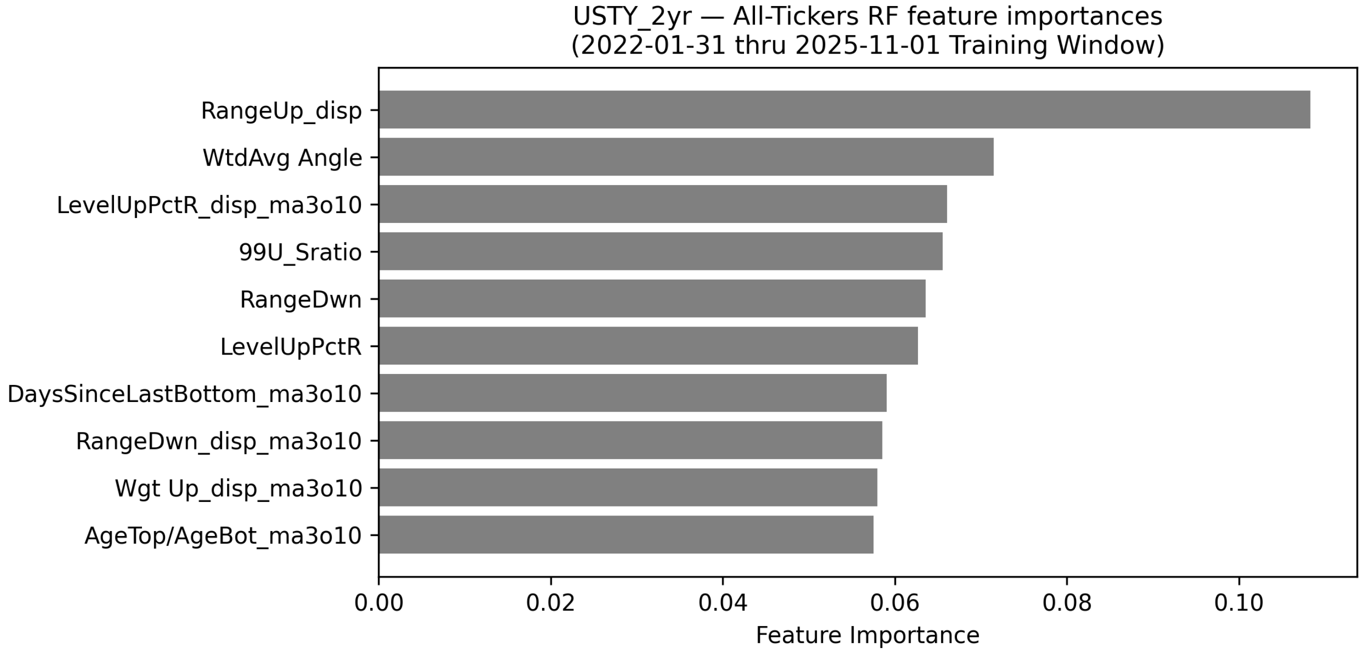
	Window Start	Window End	Winner Sector	Pool Size
0	2024-05-01	2024-10-31	Cons. Staples	83862
1	2024-11-01	2025-04-30	Cons. Disc	102514
2	2025-05-01	2025-10-31	Crypto/Meme	120131
3	2025-11-01	2026-04-24	Homebuilders	138466

Winner-Sector Tickers — `Homebuilders` (4 tickers)

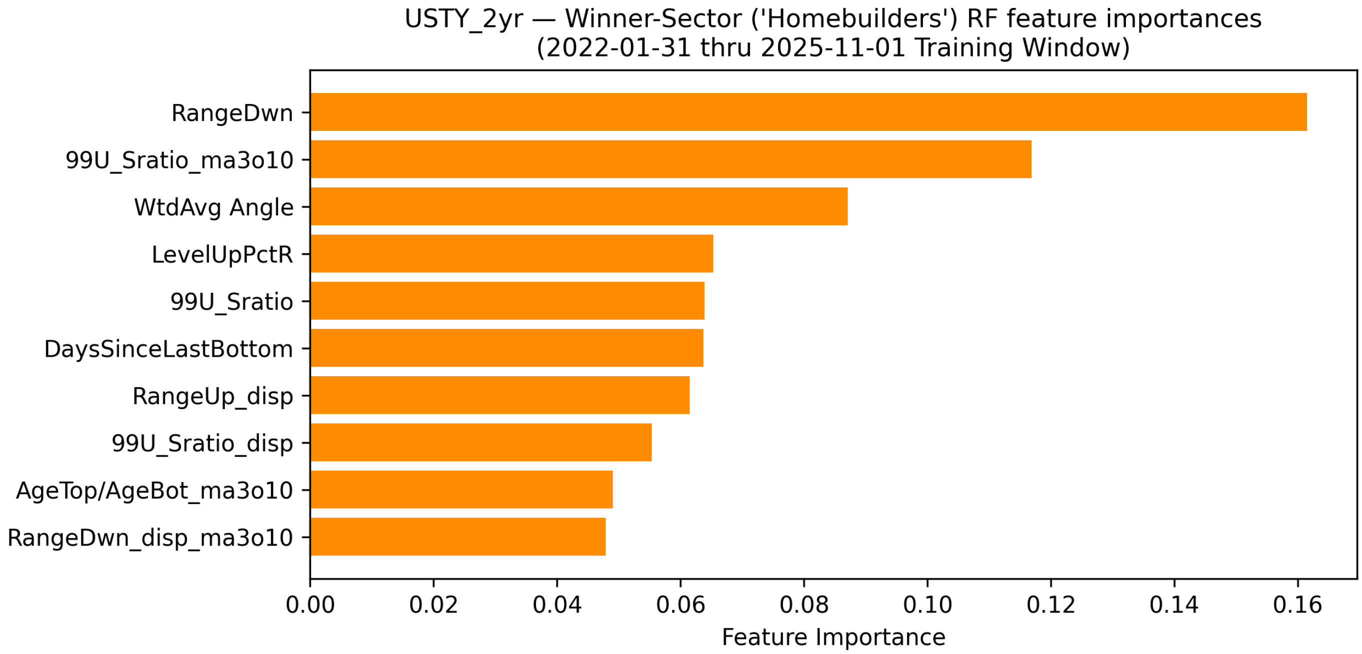
`DHI`, `LEN`, `PHM`, `HD`

Top Features — models used for prediction on 2026-04-24

All-Tickers model



Winner-Sector model — `Homebuilders`



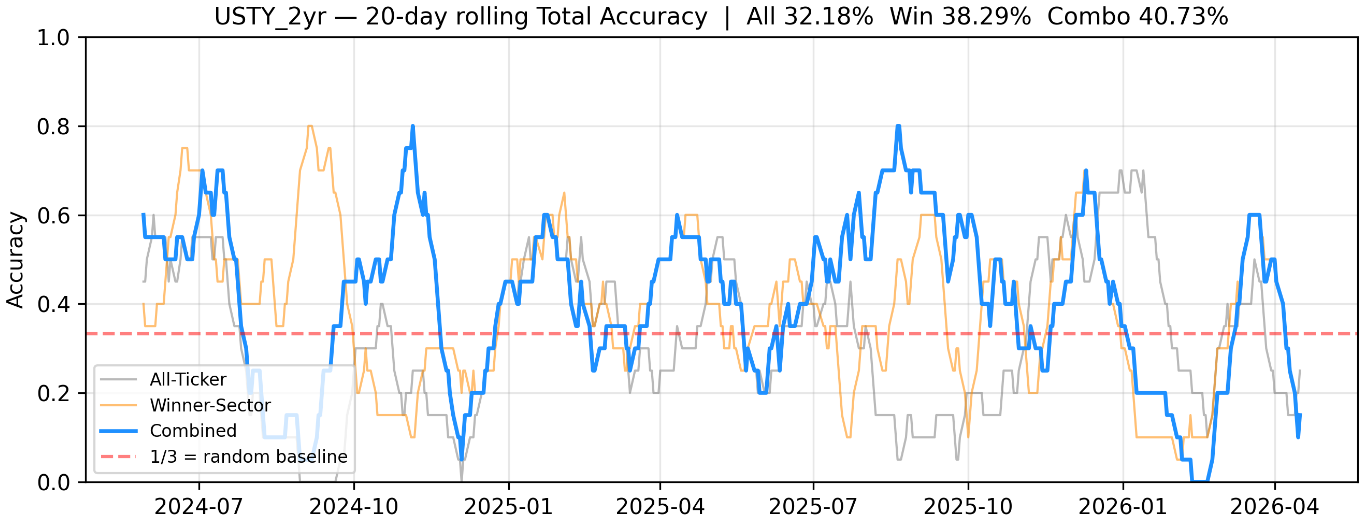


Figure 5: 20-day rolling 5d Forward Total Accuracy (exact Higher / Flat / Lower tercile match) for All-Ticker, Winner-Sector, and Combined classifiers.

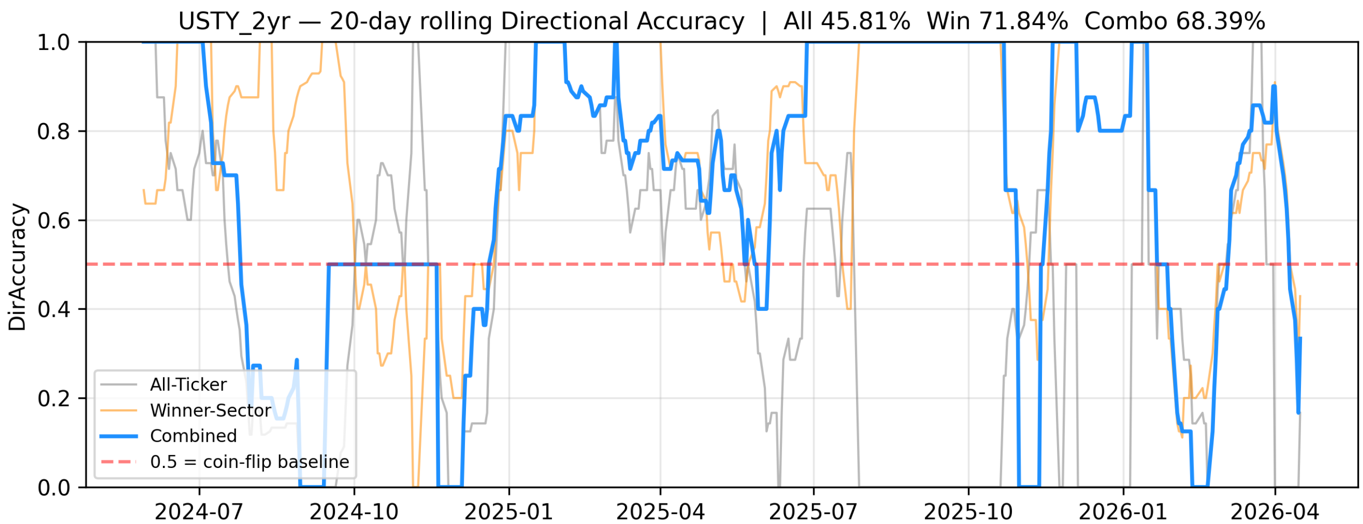


Figure 6: 20-day rolling 5d Forward Directional Accuracy (non-Flat predictions and outcomes) for All-Ticker, Winner-Sector, and Combined classifiers.

USTY_10yr

Tercile Bands for USTY_10yr (fold trained through 2026-04-16)

Tercile	5-Day Forward Change (Δ)
Lower (T0)	-0.4700 < Δ < -0.0500
Flat (T1)	-0.0500 < Δ < +0.0800
Higher (T2)	+0.0800 < Δ < +0.5100

Latest Signals

- **Most recent ModelDate**: 2026-04-24
- **USTY_10yr level on that date**: `4.3100`
- **All-Ticker prediction**: **Higher (T2)**
- **Current Winner Sector**: **Homebuilders**
- **Winner-Sector prediction**: **Lower (T0)**
- **Combined (All x Winner) prediction**: **Flat (T1)**

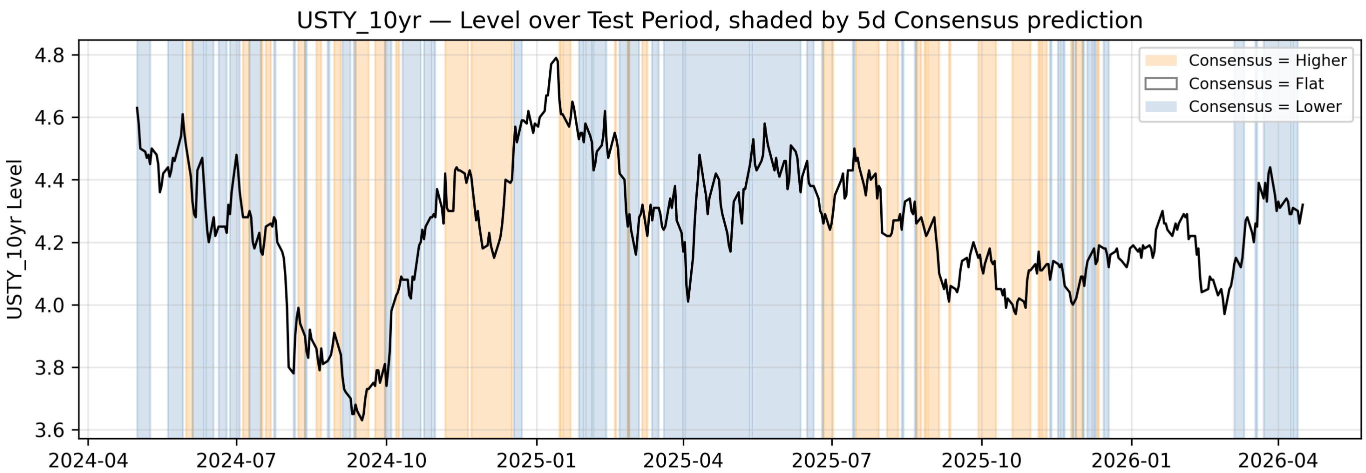


Figure 7: USTY_10yr — daily level over the test period; shading reflects each ModelDate's Combined consensus prediction (orange = Higher, no shade = Flat, blue = Lower).

Winner-Sector History (per 6-month walk-forward window)

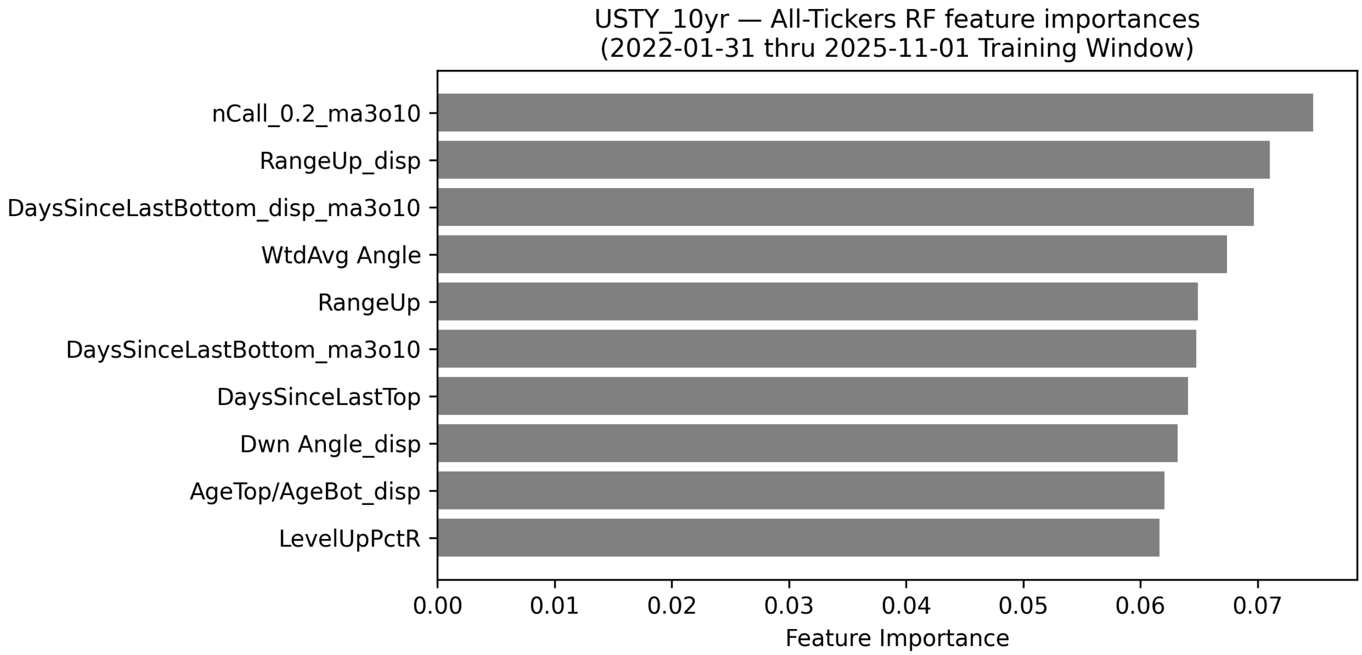
	Window Start	Window End	Winner Sector	Pool Size
0	2024-05-01	2024-10-31	Cons. Disc	83862
1	2024-11-01	2025-04-30	Cons. Disc	102514
2	2025-05-01	2025-10-31	Healthcare	120131
3	2025-11-01	2026-04-24	Homebuilders	138466

Winner-Sector Tickers — `Homebuilders` (4 tickers)

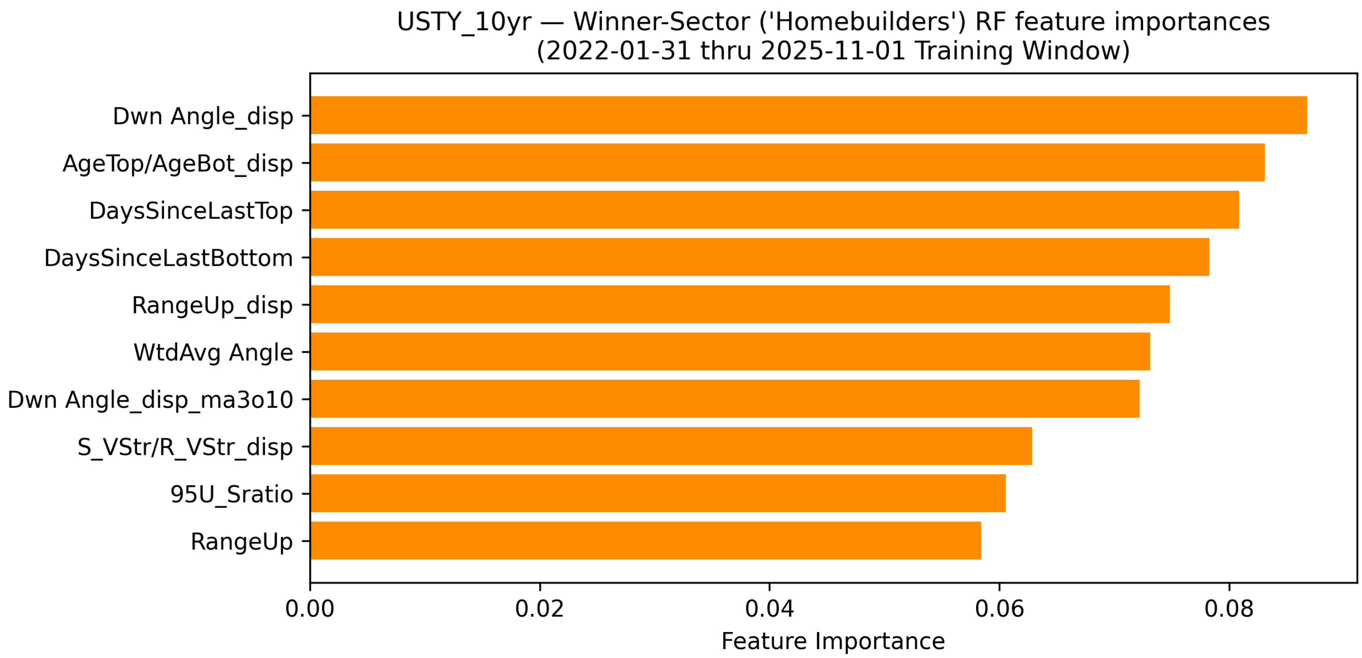
`DHI`, `LEN`, `PHM`, `HD`

Top Features — models used for prediction on 2026-04-24

All-Tickers model



Winner-Sector model — `Homebuilders`



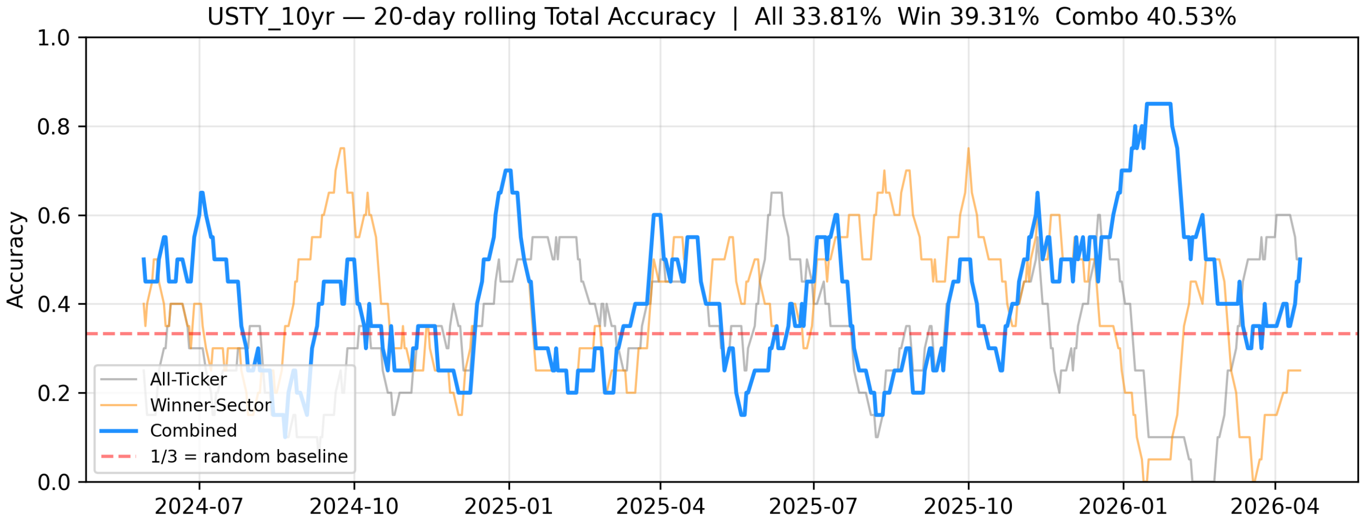


Figure 8: 20-day rolling 5d Forward Total Accuracy (exact Higher / Flat / Lower tercile match) for All-Ticker, Winner-Sector, and Combined classifiers.

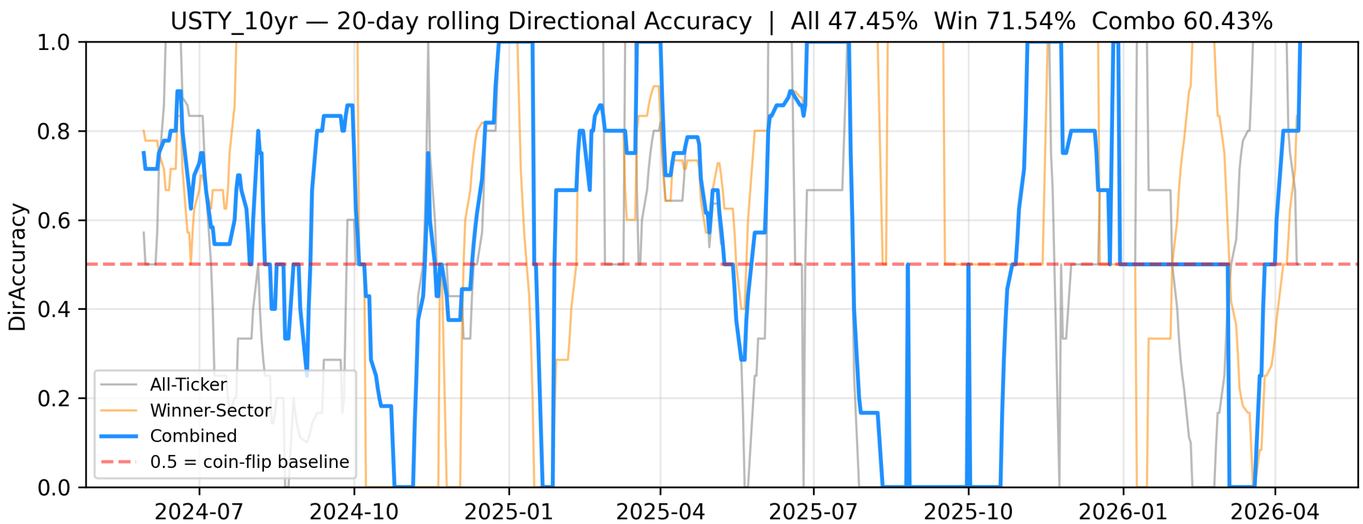


Figure 9: 20-day rolling 5d Forward Directional Accuracy (non-Flat predictions and outcomes) for All-Ticker, Winner-Sector, and Combined classifiers.

Methodology Notes

- **Target**: 5-day forward change in each macro variable, bucketed into terciles (`T0` lowest / `T1` middle / `T2` highest). Quintile boundaries are refit per fold on the training slice only — no test-period leakage.
- **All-Ticker model**: Random Forest Classifier on per-date mean and per-date cross-ticker standard deviation (`_disp`) of every Vecviz feature.
- **Winner-Sector model**: same RF Classifier but trained on the sector that wins a fresh 80/20-split tournament at each 6-month walk-forward boundary, so the winner can change over time.
- **Combined classifier**: deterministic 3×3 lookup combining the All-Ticker prediction (rows) and the Winner-Sector prediction (cols):

	Win = T0	Win = T1	Win = T2
All = T0	T0	T0	T1
All = T1	T0	T1	T2
All = T2	T1	T2	T2

- **Accuracy**: exact tercile match; random baseline = 33.3%.
- **DirAccuracy** ("Directional Accuracy"): standard accuracy computed AFTER excluding rows whose prediction OR actual = T1 (middle). 20-day rolling windows default to 0.5 when no non-middle predictions are present.
- **Latest-date predictions**: emitted past the last day where a realized 5-day target is computable, by re-running the final-fold model on the most recent ModelDate's features.
- **Feature selection (top-16, with 3dma/10dma momentum)**: an All-Tickers Random Forest (`n_estimators=500, max_depth=10, min_samples_leaf=5, max_features='sqrt'`, `random_state=42`) is fit on the full 2022-01-31 → 2024-04-30 in-sample window across a 168-column universe (per-day mean, per-day cross-ticker dispersion, and the 3-day MA / 10-day MA ratio of each base column — `_ma3o10`); the 16 columns with the highest `feature_importances_` are selected and used by every downstream model.

Selected Features — Per Target

Top 16 features — VIX

Rank	Feature	Importance	Type
1	V-Score__ma3o10	0.0164	mean
2	RangeUp__disp	0.0139	disp
3	RangeDwn	0.0133	mean
4	RangeDwn__ma3o10	0.0131	mean
5	RangeUp	0.0122	mean
6	99U__Ret	0.0121	mean
7	Dwn Angle	0.0114	mean
8	LevelUpPctR	0.0107	mean
9	DaysSinceLastBottom	0.0103	mean
10	Sigma__99U__Ret	0.0101	mean
11	LevelUpPctR__disp	0.01	disp
12	Sigma__95U__Ret	0.0099	mean
13	AgeTop/AgeBot__disp__ma3o10	0.0099	mean
14	WtdAvg Angle__disp	0.0096	disp
15	S__VStr/R__VStr	0.0096	mean
16	Sigma__99D__Ret	0.0093	mean

Top 16 features — USTY__2yr

Rank	Feature	Importance	Type
1	DaysSinceLastBottom	0.0175	mean
2	AgeTop/AgeBot__ma3o10	0.0157	mean
3	LevelUpPctR__disp__ma3o10	0.0153	mean
4	RangeUp__disp	0.0142	disp
5	99U__Sratio__disp	0.0139	disp
6	LevelUpPctR	0.0108	mean
7	DaysSinceLastBottom__ma3o10	0.0105	mean
8	RangeDwn	0.0101	mean
9	RangeDwn__disp__ma3o10	0.0093	mean
10	Wgt Up__disp__ma3o10	0.009	mean
11	99U__Sratio	0.0089	mean
12	Dwn Angle__ma3o10	0.0089	mean
13	WtdAvg Angle	0.0087	mean
14	S__VStr/R__VStr__disp__ma3o10	0.0087	mean
15	99U__Sratio__ma3o10	0.0086	mean
16	95U__Sratio__disp	0.0085	disp

Top 16 features — USTY__10yr

Rank	Feature	Importance	Type
1	DaysSinceLastBottom__ma3o10	0.0147	mean
2	RangeUp	0.0139	mean
3	LevelUpPctR	0.0132	mean
4	S__VStr/R__VStr	0.0126	mean
5	DaysSinceLastBottom__disp__ma3o10	0.0125	mean
6	Dwn Angle__disp	0.0108	disp
7	DaysSinceLastTop	0.0102	mean
8	DaysSinceLastBottom	0.0101	mean
9	RangeUp__disp	0.0098	disp

Rank	Feature	Importance	Type
10	95U_Sratio	0.0095	mean
11	nCall_0.2_ma3o10	0.0094	mean
12	AgeTop/AgeBot_disp	0.0093	disp
13	S_VStr/R_VStr_disp	0.0093	disp
14	WtdAvg Angle	0.0091	mean
15	99D_Sratio_disp	0.0091	disp
16	Dwn Angle_disp_ma3o10	0.0091	mean