

Trend State Forecast Pullback

Expert Advisor Documentation

PLATFORM

MetaTrader 5 (MT5)

TYPE

Trend Following (Pullback)

TIMEFRAME

M15 – H1

WEBSITE

www.algobot.live

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Overview

Trend State Forecast Pullback is a trend-following pullback Expert Advisor built on **Holt's Linear Trend method** — a double exponential smoothing model that maintains two live state variables and updates them on every completed bar:

$$\begin{aligned}\text{Level}_t &= a \cdot \text{Close}_t + (1 - a) \cdot (\text{Level}_{t-1} + \text{Trend}_{t-1}) \\ \text{Trend}_t &= b \cdot (\text{Level}_t - \text{Level}_{t-1}) + (1 - b) \cdot \text{Trend}_{t-1}\end{aligned}$$

Unlike a plain EMA, DEMA, ZLEMA or T3 baseline, Holt's method models the slope explicitly rather than inferring it from a numeric difference of a line:

- **Level** — a low-lag adaptive baseline that already projects the slope forward, so it leads a same-period EMA inside a trend.
- **Trend** — an explicitly *modelled* per-bar slope (drift), smoothed on its own. This slope *state* is what defines the regime, and it is what sets this strategy apart from other baseline systems.

The one-step / h-step forecast is simply $\text{Forecast} = \text{Level}_t + h \cdot \text{Trend}_t$. Robust trends drift persistently, and the Holt Trend state captures that drift cleanly with little lag. The EA only trades *with* a statistically meaningful drift and buys shallow dips back to the model's own baseline — the classic low-drawdown "trade the pullback, not the breakout" edge.

Core idea: A trend is defined by the Holt *Trend state* (a modelled drift), not by a moving-average crossover. The EA waits for price to pull back below its own adaptive baseline, then re-enters the moment price reclaims that baseline in the trend direction — provided the forecast still leaves room to run.

How It Works

The strategy acts once per newly-formed bar and trades off the bar that has just closed. Entries are fully symmetric for long and short. Every timeframe reference uses the chart's primary timeframe — nothing is hardcoded — so the EA runs on whatever timeframe you attach it to.

Entry Logic — Three Holt-Specific Filters

Inside a valid regime, all three conditions must be satisfied on the just-closed bar before a trade is taken:

1. **Regime** — the Trend state is normalised by ATR to a dimensionless per-bar slope, $s = \text{Trend} / \text{ATR}$. A *long* regime requires $s \geq \text{SlopeGate}$; a *short* regime requires $s \leq -\text{SlopeGate}$. Flat or choppy drift between the gates is ignored entirely.
2. **Reclaim** — a genuine pullback must occur and then resolve. The prior completed bar must have *closed on the counter-trend side* of the Level line, and the current completed bar must *close back through it* (a fresh one-bar cross of the model baseline in the trend direction), with a with-trend candle body confirming the resumption.
3. **No-Chase** — the forecast must still point the trade's way with room to run. For a long, the EA requires $\text{Close} \leq \text{Level} + h \cdot \text{Trend}$ (price has not already overshot where the model projects). This blocks entries on stretched bars and is a direct use of Holt's forecasting equation.

Long entry in plain terms

The modelled slope is up ($\text{Trend} / \text{ATR} \geq \text{SlopeGate}$), the previous bar closed *below* the Holt Level line (a real dip), the current bar closes *back above* the Level with a bullish body, and price is still at or below the h-step forecast. A buy is placed at the Ask. Shorts are the exact mirror image.

Exit Logic & Risk Management

Risk is structural and bounded on every trade:

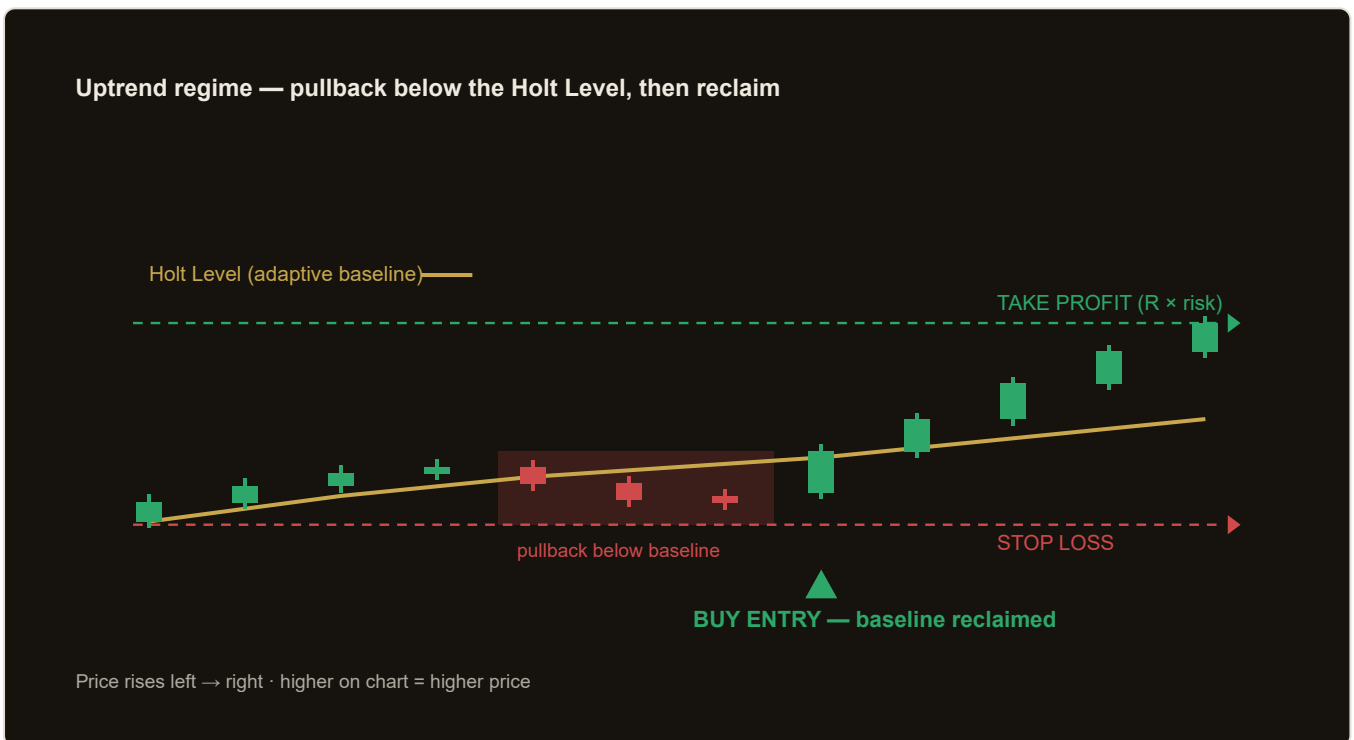
- **Structural stop** — the stop sits just beyond the pullback extreme (the lowest low for a long, or highest high for a short, over $\text{PullbackBars} + 1$ bars), plus a small $\text{StopBufferAtr} \cdot \text{ATR}$ cushion. This is the natural point of invalidation.
- **Stop rejection** — if the resulting stop distance is wider than $\text{MaxStopAtr} \cdot \text{ATR}$, the setup is skipped entirely. This keeps per-trade risk capped and drawdown low.
- **Take profit** — a reward:risk multiple of the measured stop distance (RewardRatio).

- **Break-even lock** — once price advances `BreakEvenR` multiples of the initial risk, the stop jumps to the entry price.
- **ATR trailing stop** — after break-even is armed, the stop trails by `TrailAtrMult · ATR`, never loosening. Positions are managed on every tick.

One position at a time: the EA holds a single position per magic number. No new entry is considered while a trade is open, keeping exposure and risk predictable.

Strategy in Action

The illustration below shows an example of how the strategy identifies a setup and triggers its entry and exit. This is a simplified, illustrative example for educational purposes — not real market data.



Illustrative example only. Actual market behaviour varies.

Parameters

Parameter	Default	Description
LevelAlpha	0.25	Level smoothing constant (a). Higher values make the baseline more responsive. Range 0.05–0.60, step 0.05.
TrendBeta	0.10	Trend (slope) smoothing constant (b). Higher values make the modelled slope react faster. Range 0.02–0.40, step 0.02.
SlopeGate	0.08	Minimum $ \text{Trend} / \text{ATR} $ per-bar slope required for a valid trend regime. Range 0.02–0.30, step 0.01.
AtrPeriod	14	ATR period — the volatility unit used for the slope gate, stops and trailing. Range 5–40, step 1.
PullbackBars	3	Lookback in completed bars for the structural pullback extreme (the stop reference). Range 1–8, step 1.
ForecastHorizon	3	Forecast horizon h used in the no-chase filter, $\text{Level} + h \cdot \text{Trend}$. Range 1–10, step 1.
MaxStopAtr	2.5	Reject a setup whose structural stop is wider than this many ATR. Range 1.0–5.0, step 0.5.
StopBufferAtr	0.15	Extra stop buffer beyond the pullback extreme, in ATR. Range 0.0–0.60, step 0.05.
RewardRatio	2.0	Take-profit as a reward:risk multiple of the stop distance. Range 1.0–4.0, step 0.5.
BreakevenR	1.0	Move the stop to break-even after price advances this multiple of the initial risk. Range 0.3–2.0, step 0.1.
TrailAtrMult	2.0	ATR multiple for the trailing stop once break-even is armed. Range 0.5–4.0, step 0.5.
Lots	0.10	Order volume in lots. Range 0.01–1.0, step 0.05.
Magic	8813	Magic number identifying this EA's positions so it manages only its own trades.

Recommended Settings

The strategy is designed with liquid intraday FX and index trends in mind, but the timeframe is never hardcoded — it runs on whatever chart you attach it to.

- **Symbols:** liquid majors and indices such as EURUSD or US100.

- **Timeframe:** M15 to H1, where persistent intraday drifts are common.
- **Defaults:** the shipped defaults (LevelAlpha 0.25, TrendBeta 0.10, SlopeGate 0.08, AtrPeriod 14) are a balanced starting point across these markets.

Tuning tips: raise `SlopeGate` to demand stronger, cleaner trends and fewer trades; lower it to participate in gentler drifts. Increase `TrendBeta` for faster-reacting slope detection on shorter timeframes. Widen `MaxStopAtr` only if your market's volatility genuinely warrants it — a tighter cap keeps drawdown lower.

Always validate before going live. Backtest and forward-test on a demo account with your broker's spreads and execution before committing real capital. Optimise parameters on out-of-sample data to avoid curve-fitting.

How to Install on MetaTrader 5

- 1 Copy `TrendStateForecastPullback.ex5` to your MT5 `MT5\Experts\` folder
- 2 Restart MetaTrader 5 and refresh the Navigator panel
- 3 Drag the EA onto a chart matching the recommended symbol and timeframe
- 4 Configure the input parameters and click **OK**
- 5 Enable **Algo Trading** in the MT5 toolbar

Risk Warning

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