

Temporal Asymmetry Trend

Expert Advisor Documentation

PLATFORM	TYPE	TIMEFRAME	WEBSITE
MetaTrader 5 (MT5)	Statistical Momentum	Any (H1 recommended)	www.algotbot.live

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Overview

Temporal Asymmetry Trend is an original, first-principles strategy that reads the “*arrow of time*” hidden in a market’s price path. It is not built on any indicator, candlestick pattern, support / resistance level, or published method such as SMC, ICT, or Wyckoff. Instead it borrows a single idea from statistical mechanics: a system sitting in **equilibrium** looks the same whether you play its history forwards or backwards, whereas a system being actively **driven** does not.

Applied to trading, a market whose order flow is roughly balanced produces a return series that is statistically **time-reversible** — forward and reversed trajectories are equally likely. A market being pushed by a persistent order-flow imbalance is **out of equilibrium**, and its price path becomes **time-irreversible**. The *sign* of that irreversibility reveals the direction of the drive, and its *magnitude* measures how far from equilibrium the market has moved.

The EA distills this into a single dimensionless number, the time-asymmetry coefficient **Âhat**. Because it is scaled by the market’s own volatility, the same threshold works across symbols and timeframes — the strategy simply runs on whatever chart symbol and period it is attached to.

In one sentence: the EA measures whether recent price moves are being *driven* harder in one direction than the other — and when that imbalance is strong enough, it trades in the direction of the drive with ATR-scaled risk.

How It Works

The core statistic

Over a rolling window of the last **N** completed bars, the EA forms the close-to-close return series and computes the lowest-order lagged time-asymmetry of those returns. Dividing by the cube of the returns' standard deviation makes the result a pure, unit-free number:

$$r_i = \text{close}_i - \text{close}_{(i-1)} \quad (i = 1 \dots N)$$

$$A = (1 / (N-1)) \cdot \sum r_i \cdot r_{(i-1)} \cdot (r_i - r_{(i-1)})$$

$$\hat{A} = A / \sigma^3 \quad (\sigma = \text{population std-dev of the } N \text{ returns})$$

Under a time reversal (swapping **i** and **i-1**) the two halves of each term exchange places and **A** changes sign. Consequently **A = 0** for *any* reversible (equilibrium) process, and a non-zero **A** **certifies** that the market is being driven.

Why a straight ramp reads as zero: a constant drift (every return equal) is identical when reversed, so it too gives **A = 0**. The coefficient therefore responds to *changes* in the drive — the asymmetry between accelerating and decelerating phases — not to steady, uniform movement.

WHAT THE SIGN MEANS

- **Accelerating up** (moves growing in the up direction) → $\hat{A} > 0$ — bullish drive.
- **Decelerating down** (down-moves shrinking) → $\hat{A} > 0$ — bullish reversal building.
- **Accelerating down** (moves growing in the down direction) → $\hat{A} < 0$ — bearish drive.
- **Decelerating up** (up-moves shrinking) → $\hat{A} < 0$ — bearish reversal building.

Entry logic

The EA acts once per completed bar (new-bar detection). With no position open, it enters only when the drive is both *directed* and *significant*:

- **Go long** when $\hat{A} > +\text{Threshold}$ — a genuine out-of-equilibrium bullish drive.
- **Go short** when $\hat{A} < -\text{Threshold}$ — a genuine out-of-equilibrium bearish drive.

Only one position is held per magic number at a time; the EA never stacks entries. If the window is flat (zero volatility) or the coefficient is otherwise undefined, the bar is skipped.

Exit logic

The exit is concept-consistent with the entry: a trade is closed as soon as the drive that justified it **dissipates or reverses**. Concretely, an open long is closed when $\hat{A}hat$ turns negative, and an open short is closed when $\hat{A}hat$ turns positive. The market has, in effect, returned toward equilibrium or begun driving the other way.

Risk management (ATR-scaled)

Stop-loss and take-profit are placed at multiples of the current Average True Range, so the same rule self-adapts to whatever volatility regime the market is in:

Long : $SL = entry - AtrSlMult \times ATR$ $TP = entry + AtrTpMult \times ATR$
Short: $SL = entry + AtrSlMult \times ATR$ $TP = entry - AtrTpMult \times ATR$

With the defaults ($AtrSlMult = 2.0$, $AtrTpMult = 3.0$) each trade targets a **1.5× reward-to-risk** ratio, while the $\hat{A}hat$ sign-flip provides an earlier, logic-based exit if momentum fades before either level is reached.

Single timeframe by design: every calculation uses the chart's own symbol and period. Attach the EA to the timeframe you want it to trade — there is no multi-timeframe coupling to configure.

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
Window	40	Number of close-to-close returns (N) in the time-asymmetry window. Larger values smooth the coefficient and react more slowly; smaller values are more sensitive. Range 15–120, step 5.
Threshold	0.20	The dimensionless $ \hat{\alpha} $ a signal must clear to count as a genuinely driven regime. Higher values give fewer, stronger signals; lower values trade more often. Range 0.05–1.0, step 0.05.
AtrPeriod	14	ATR length used to size the stop-loss and take-profit distances. Range 7–30, step 1.
AtrSIMult	2.0	Stop-loss distance as a multiple of ATR: $SL = entry -/+ AtrSIMult \times ATR$. Range 1.0–4.0, step 0.5.
AtrTpMult	3.0	Take-profit distance as a multiple of ATR: $TP = entry +/- AtrTpMult \times ATR$. Range 1.0–6.0, step 0.5.
Lots	0.10	Fixed order volume in lots. Range 0.01–1.0, step 0.05.
Magic	5207	Unique identifier that isolates this EA's positions from other trades and other EAs on the same account. Change it only if you run multiple instances.

Recommended Settings

The defaults are a balanced starting point and are timeframe-agnostic thanks to the volatility scaling. As a general guide, run the EA on liquid instruments with reliable ATR behaviour and let the window span a meaningful stretch of recent history.

Balanced (default)

H1, major FX pairs — $Window = 40$, $Threshold = 0.20$, $AtrPeriod = 14$, $AtrSIMult = 2.0$, $AtrTpMult = 3.0$. A good all-round configuration that trades moderately and targets 1.5× reward-to-risk.

Conservative (fewer, stronger signals)

H4 — raise $Threshold$ to $0.35-0.45$ and $Window$ to $60-80$. Only strongly driven, well-established regimes qualify, at the cost of trade frequency.

Aggressive (more responsive)

M15–M30 — lower **Threshold** to **0.10–0.15** and **Window** to **20–30** . Reacts to shorter drives; expect more signals and more noise.

Tip: because **Âhat** is dimensionless, the same **Threshold** transfers across symbols and timeframes — tune **Window** and **Threshold** together, then let ATR handle position risk. Always validate a configuration in the Strategy Tester on out-of-sample data before going live.

How to Install on MetaTrader 5

- 1 Copy **TemporalAsymmetryTrend.ex5** to your MT5 **MQL5\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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