Edge Decay Analyzer

User Manual · StrategyQuant X 144+ Plugin

Version:	1.0
Language:	English
Platform:	StrategyQuant X 144 or higher
Type:	Custom Results Plugin (HTML/JavaScript)

This manual describes the Edge Decay Analyzer plugin, a tool to analyze the edge quality of algorithmic strategies in StrategyQuant X and filter candidates based on objective configurable criteria.

1. What is it?

The **Edge Decay Analyzer** is a plugin that installs inside StrategyQuant X (SQX) and appears as another tab in the **Results** section of each strategy.

Its purpose: **to measure the edge quality of a strategy and how much it degrades from In-Sample to Out-of-Sample**, providing a 0-100 score with A-F grade to quickly analyze and filter strategies.

What it is used for

- **Edge analysis**: evaluate the quality and robustness of an individual strategy's edge
- **Strategy analysis**: dive deep into metrics, IS→OOS decay, streaks, and entry quality
- **Strategy filtering**: quickly filter candidates with an objective score configurable per asset
- **Overfit detection**: identify strategies where the IS edge does not persist in OOS
- **Strategy comparison**: use an objective number to decide which one advances to the next step
- **Visualize losing/winning streaks**: understand the real psychological risk of trading the strategy

What it does NOT do

- It does not replace robustness tests like Monkey Test, Walk Forward Matrix, or Monte Carlo
- It does not predict whether a strategy will make money in live trading (only demo + forward test confirms that)
- It does not modify or move strategies between databanks (read-only, SQX sandbox)

2. Installation

Requirements

- StrategyQuant X **144** or higher (requires Custom Results Plugins support)
- Pro license (3 plugins max) or Ultimate (unlimited)

Steps

1. Close SQX completely
2. Copy the entire **Edge Decay Analyzer** folder (with its index.html, locales, and vue.global.prod.js) to:

```
[SQX Installation]/user/extend/ResultsPlugins/Edge Decay Analyzer/
```

3. Open SQX
4. Select a strategy in any databank → **Results** tab → **Edge Decay Analyzer**

Uninstallation

Close SQX, delete the plugin folder, open SQX. Clean uninstall with no residues. The plugin does not modify SQX core or your databanks.

3. Plugin structure

The plugin has **3 tabs**:

Tab	Function
Analysis	Score 0-100, the 4 pillars, IS vs OOS comparison, XS chart by year, concurrency
Streaks	Consecutive losses/wins, worst streak, best streak, distribution, and chart by year
Configuration	Adjust thresholds and weights, asset presets, Edge vs Strategy type, persistence

4. Analysis Tab

Edge Quality Score

A large **0-100** number with **A-F** grade and verdict description. It is the executive summary of the analysis.

Score	Grade	Verdict
85-100	A	Excellent edge. Very likely to persist out of sample
70-84	B	Good edge with manageable decay. Worth advancing to robustness tests
55-69	C	Reasonable edge but with notable degradation. Validate carefully
40-54	D	Weak edge. Significant decay between IS and OOS, probably overfit
<40	F	The edge collapses out of sample. Not recommended for further work

How the Total Score is calculated

The score is the **weighted sum of 4 pillars**:

```
Total Score = Profitability x 25% + Consistency x 30% + Risk Management x 25% + Entry Quality x 20%
```

> *These are the default weights in "Strategy" mode. In "Edge" mode they are redistributed automatically (see Configuration section).*

How each pillar is calculated

Each pillar combines several metrics using a **linear threshold system**:

```
[threshold value 0pts] -> 0 points
[threshold value 50pts] -> 50 points
[threshold value 100pts] -> 100 points
```

Between thresholds, values are linearly interpolated. **Example**: if Profit Factor thresholds are 1.0/1.3/1.8 and your strategy has PF=1.55, interpolating between 1.3 (50 pts) and 1.8 (100 pts) gives **75 points**.

Pillar 1: PROFITABILITY (25% weight)

Measures how profitable the strategy is **in OOS**.

Metric	Weight	0 pts	50 pts	100 pts	Direction
Profit Factor OOS	60%	1.0	1.3	1.8	higher better
Net Profit > 0	20%	<=0	—	>0	binary
Avg Trade OOS	20%	0	5	20	higher better

Pillar 2: CONSISTENCY (30% weight)

Measures how **stable and persistent** the edge is. The highest-weighted pillar because IS->OOS persistence is the most predictive of future success.

Metric	Weight	0 pts	50 pts	100 pts	Direction
Stability OOS	50%	0.30	0.55	0.75	higher better
PF Decay (IS->OOS)	30%	40%	15%	0%	lower better

Metric	Weight	0 pts	50 pts	100 pts	Direction
Win Rate OOS	20%	35%	45%	55%	higher better

PF Decay calculation: `(1 - PF_OOS / PF_IS) x 100`. If PF IS=2.0 and PF OOS=1.5, decay = 25%.

Pillar 3: RISK MANAGEMENT (25% weight)

Measures **risk-adjusted** performance.

Metric	Weight	0 pts	50 pts	100 pts	Direction
Ret/DD OOS	50%	1	3	6	higher better
Max DD % OOS	30%	30	15	5	lower better
Sharpe Ratio OOS	20%	0.5	1.2	2.0	higher better

Pillar 4: ENTRY QUALITY (20% weight)

Measures the quality of **individual entries** via XS (MFE/MAE).

Metric	Weight	0 pts	50 pts	100 pts	Direction
Median XS OOS	100%	0.45	0.55	0.70	higher better

XS calculation: for each individual trade, `XS = MFE / (MFE + MAE)`. Then the median is computed across all OOS trades.

- **XS = 0.5**: neutral trades (same MFE as MAE)
- **XS > 0.6**: good entries (more favorable than adverse movement)
- **XS < 0.5**: poor entries (more adverse than favorable movement)

IS vs OOS comparison table

8 metrics compared with **calculated decay** and **color-coded verdict**: Profit Factor, Net Profit, Ret/DD, Max DD%, Win Rate, N Trades, Sharpe Ratio, Stability.

Verdict thresholds (adjustable)

Decay	Verdict	Color
< 15%	HOLDS	green
15-40%	DEGRADES	yellow
> 40%	COLLAPSES	red

Note: N Trades is not evaluated by decay because IS and OOS have different periods (comparing absolute numbers is meaningless).

XS by Year Chart

Bar chart of entry quality year by year, color-coded by XS value:

Color	XS Range	Meaning
Green	>= 0.60	Excellent entries
Blue	0.50 - 0.60	Neutral-good entries
Yellow	0.45 - 0.50	Entries with room for improvement
Red	< 0.45	Poor entries

OOS years are highlighted in amber color in the year label.

Automatic December 31st filter: the last year is discarded if it has fewer than 5 trades. This prevents a single trade from December 31, mistakenly placed in the following year due to JavaScript's timezone handling, from contaminating the calculations.

Concurrent Trades Analysis

Detects whether the strategy depends on **Allow Duplicate Trades**:

Metric	Explanation
Total days with trades	How many distinct days the strategy traded
Days with multiple trades	How many had 2 or more simultaneous trades
Max trades in a single day	Concurrency peak
Average trades per day	Mean concurrency

Automatic warning: if more than 25% of days have multiple trades, or the peak exceeds 5 trades/day, a warning is shown indicating the edge may depend on concurrency. Real execution may differ if you limit simultaneous positions.

5. Streaks Tab

Analyzes consecutive losing and winning streaks. Answers the question: **is the worst-case scenario a one-time event or does it repeat?**

Summary (4 cards)

The 4 key metrics at a glance:

- Max consecutive losses IS
- Max consecutive losses OOS (with orange OOS badge and OK/WARNING vs IS)
- Max consecutive wins IS
- Max consecutive wins OOS (with orange OOS badge and OK/WARNING vs IS)

OK and WARNING logic

- **For losses:** OK if OOS <= IS (fewer long losing streaks is better)
- **For wins:** OK if OOS >= IS (more long winning streaks is better)

Worst Streak and Best Streak details

For the longest losing streak and longest winning streak in history, shows:

- **Period:** start date -> end date
- **Duration:** in days
- **Consecutive trades:** count
- **Accumulated P&L;:** in $ and as % over capital at start of streak
- **Year / Sample:** with OOS badge if applicable

This tells you whether the bad streak occurred in a recognizable context (e.g., 2022 crash, COVID 2020) or out of nowhere.

Streak distribution

Two histograms side-by-side showing how many times each streak size occurred. Useful to know whether a max streak of 6 losses is an outlier (occurred once) or a pattern (occurred 5 times).

Streaks by Year chart

Mirror bar chart:

- **Above (green):** max consecutive wins per year
- **Center (axis):** year with OOS badge if applicable
- **Below (red):** max consecutive losses per year

Bars are scaled proportionally to the maximum, so they always fit. OOS years are more opaque to stand out.

6. Configuration Tab

Strategy type: Edge vs Strategy

Selector with two modes, each with descriptive tooltip. This is one of the most important options: the plugin automatically adjusts thresholds and weights according to the strategy type.

Edge mode

For strategies with **Exit After Bars only, no Stop Loss or Take Profit, fixed lot size**.

Measures the entry SIGNAL quality without trade management contamination. Automatic adjustments:

- **More permissive Risk Management** (Ret/DD, DD%, Sharpe relaxed, because without SL, DD is always larger)
- **Slightly more demanding PF** (1.1/1.4/2.0 instead of 1.0/1.3/1.8)
- **Redistributed weights:** Profitability 25%, Consistency 35%, Risk 15%, Entry Quality 25%

Strategy mode (default)

For **complete strategies with Stop Loss, Take Profit, Trailing, and/or sizing implemented**.

Ready to validate as a complete trading system. Uses standard configuration with default weights (25/30/25/20).

Asset presets

Quick buttons that adjust thresholds based on asset type. The active preset stays highlighted in blue.

Preset	Main adjustments
Indices (NASDAQ, S&P, DAX)	More demanding PF (up to 2.0), higher Ret/DD
Forex	Lower PF (typical in FX), higher Win Rate
Commodities	Tolerates more DD
Crypto	High PF possible but tolerates large DD
Restore Default	Reverts to base values

Pillar Weights

Adjust the % of each pillar (with warning if they don't sum to 100%).

Per-metric thresholds

For each metric of each pillar you can adjust:

- 0 pts threshold (what value gives 0 points)
- 50 pts threshold
- 100 pts threshold
- Internal weight within the pillar (%)

Verdict Thresholds (Decay)

Customize when a metric "holds", "degrades", or "collapses" in the IS vs OOS table:

- **Holds if decay below:** default 15%
- **Collapses if decay above:** default 40%

Persistence

Configuration is saved in **browser localStorage** when clicking "Save Configuration". It persists between SQX sessions on the same machine. If you reinstall SQX or change machines, you need to reconfigure.

7. Typical use cases

Case 1: Filter 50 candidates

1. Configure the plugin: **Edge** type + corresponding asset preset

2. Select strategy 1 in the databank

3. Check the score and grade: A-B = strong candidate; C = needs more validation; D-F = discard

4. Repeat for each strategy. In ~30 seconds per strategy you have the full filter.

Case 2: Detect overfit in a "suspiciously good" strategy

1. Load the strategy

2. Check the **IS vs OOS** table:

   • If metrics "hold" -> good sign

   • If they "collapse" -> probable overfit

3. Check the **XS by year chart**:

   • If there are years with XS < 0.45 -> poor entries in those regimes

   • If OOS has low XS and IS high -> signal only worked in the past

4. Check the **Streaks** tab:

   • If OOS amplifies the bad streaks from IS -> the strategy is degrading

Case 3: Compare two similar strategies

1. Load strategy A -> note its score, 4 pillars, and worst decay

2. Load strategy B -> same notes

3. Compare: the one with **higher score + lower decay across all pillars** usually wins.

Case 4: Evaluate psychologically tolerable streak

1. Open the **Streaks** tab

2. Check the **worst losing streak**: if your expected equity drawdown would be $5,000 and the worst historical streak was $7,000... could you tolerate it without stopping the system?

3. Check the **distribution**: if it happened once it is manageable; if it happened 5 times, it is normal operation.

8. Troubleshooting

"Edge Decay Analyzer tab does not appear in Results"

- Verify the folder is at `user/extend/ResultsPlugins/`
- Verify it contains `index.html` and `vue.global.prod.js`
- Fully restart SQX
- Verify your license (Starter does not allow custom plugins)

"Blank screen or only the title shows"

Verify that `vue.global.prod.js` is in the plugin folder.

"Entry Quality gives a strange value or shows a warning"

- The warning indicates the plugin could not identify OOS trades by the SampleType field
- If it appears, the pillar uses the median of ALL years, not just OOS
- In SQX 144 this usually works fine; if it persists, verify that trades have the Sample type field populated

"Different score when loading the same strategy multiple times"

- Always wait for loading to finish (the "Loading data..." spinner to disappear) before clicking again
- Rapid clicks between strategies can cause inconsistencies due to delayed responses

"A bar in the chart overflows the box"

Should not happen (bars are scaled to the maximum). If it occurs, report it with a screenshot.

9. Known limitations

About Results plugins in general

- They are **read-only sandbox**: read data via PostMessage but cannot write to databanks
- Available data depends on what SQX exposes via PostMessage API

Specific to Edge Decay Analyzer

- **The last year may be discarded** if it has <5 trades (intentional filter to avoid the timezone bug with December 31st trades)
- **XS depends on having MFE/MAE in trades**. If SQX does not calculate them, this pillar may be inaccurate.
- **IS vs OOS detection** depends on the SampleType field of trades. If SQX changes the format in future versions, it may require a fix.

10. Quick score interpretation

As a general reference (depends on the asset and Edge/Strategy mode):

Score	Recommended action
A (85+)	Advance to robustness tests with high priority
B (70-84)	Advance to robustness tests. Most viable candidates are here
C (55-69)	Analyze case by case. Check weak pillars and consider if they are fixable (e.g., adding SL/TP)
D (40-54)	Discard unless there is a very specific reason
F (<40)	Discard

11. Plugin philosophy

Design principles to keep in mind:

1. **Transparency or nothing:** if data cannot be calculated correctly, the plugin warns explicitly; it never invents values.

2. **Configurability:** thresholds are not absolute truth, they adjust to the asset and strategy type.

3. **Complementary, not substitute:** the plugin is a quick filter and analysis tool; it does not replace Monkey Test, Walk Forward, Monte Carlo, or the demo.

4. **Focus on consistency:** the most predictive metric of future success is the persistence of the edge IS->OOS, which is why Consistency has the highest weight.

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