

QF624-2025-W2

Number of participants: 35



1.

Which of the following is least likely to improve the robustness of an algorithmic trading strategy?

18 correct answers

out of 26 respondents

Incorporating a richer feature set that captures multiple market regimes



12%

3 votes

Using rolling-window backtests to validate performance over different periods



4%

1 vote

Calibrating model parameters on the entire historical dataset before any live trading



69%

18 votes

Stress-testing the strategy under simulated market shocks



15%

4 votes



2. Which issue in backtesting most directly arises from insufficient or biased input data?

22 correct answers
out of 30 respondents

Look-ahead bias



5 votes



Survivorship bias



22 votes

Execution
slippage



1 vote

Transaction-cost
underestimation



2 votes



3.

You compute a 50-day exponential moving average and a stochastic oscillator to trigger entries and exits. These are examples of which data type?

26 correct answers

out of 30 respondents

Fundamentals

0%

0 votes

Financial news

0%

0 votes

Market states

13%

4 votes



Technicals

87%

26 votes



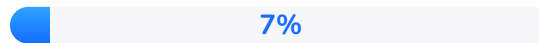
4.

A strategy uses revenue growth, cash-flow ratios, and EPS forecasts released only quarterly. Which trade-off is most relevant when relying on this data type?

20 correct answers

out of 28 respondents

High noise but low latency



2 votes



Low noise but high latency



20 votes

Requires sub-second processing



3 votes

Prone to look-ahead bias



3 votes



5. **For a simple moving average of length n , which of the following is most true about increasing n ?**

28 correct answers
out of 30 respondents

It decreases lag in your entry/exit signals.

0%

0 votes

It amplifies short-term noise in the price.

3%

1 vote

It makes the moving average smoother but slower to react.

93%

28 votes

It converts the SMA into an exponential moving average (EMA).

3%

1 vote



6. In the recursion of EWA, which choice of α makes the EMA more sensitive to the most recent data?

25 correct answers
out of 31 respondents

$\alpha = 0.01$



4 votes

$\alpha = 0.1$



2 votes

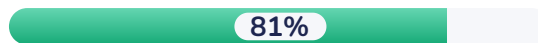
$\alpha = 0.5$



0 votes



$\alpha = 0.99$



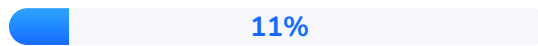
25 votes



A practical issue when initializing $\text{EWMA}_0 = S_0$ is
7. that early EMA values can be biased toward S_0 . Which remedy is least effective?

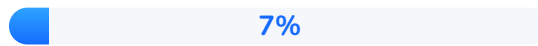
17 correct answers
out of 28 respondents

Start EWMA_0 at the first data point S_1 instead of S_0 .



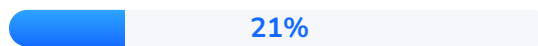
3 votes

Prepend a “burn-in” period and discard the first few EMAs.



2 votes

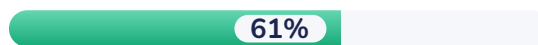
Use the sample mean of the first m observations as EWMA_0 .



6 votes



Always set $\text{EWMA}_0 = 0$ regardless of data.



17 votes



8.

One way to size positions in a crossover-based trend strategy is to scale notional by the inverse of recent volatility. This sizing rule primarily ensures that:

24 correct answers

out of 29 respondents

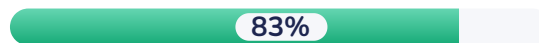
You take larger bets in high-volatility regimes



1 vote



You maintain roughly constant risk (dollar-volatility) per trade



24 votes

Your Sharpe ratio becomes insensitive to MA lengths



1 vote

Your strategy avoids all drawdowns



3 votes



9.

Consider a time series analysis where you are evaluating the stationarity of a financial asset's return series. If you perform a statistical test and find that the series is not stationary, which of the following implications is true?

25 correct answers

out of 27 respondents

The asset's returns are predictable using historical mean and variance.

0%

0 votes

The asset's future returns can be perfectly forecasted using past return data since they follow a set pattern.

0%

0 votes

The asset's returns cannot be assumed to have a constant mean and variance over time.



93%

25 votes

The non-stationarity of the series indicates that the asset's return will always increase over time.

7%

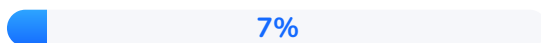
2 votes



10. Why is having a stationary spread crucial for a cointegration-based trading strategy?

24 correct answers
out of 29 respondents

It guarantees that the two assets move perfectly in sync.



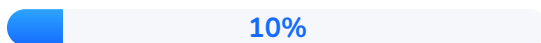
2 votes

It ensures that deviations from the long-term equilibrium will revert, giving predictable entry/exit points.



24 votes

It implies that both series are mean-reverting individually.



3 votes

It makes backtesting unnecessary because the spread never trends.



0 votes



Which statement best describes the economic interpretation of a cointegrating relationship between two asset prices?

25 correct answers
out of 27 respondents

The two assets have identical volatility patterns.



2 votes

There exists a hidden arbitrage mechanism or shared fundamental driving both prices together in the long run.



25 votes

Both assets always yield the same return at each point in time.



0 votes

The assets are uncorrelated at high frequencies.



0 votes



12. Compared to the Engle–Granger two-step test, the Johansen procedure is often preferred when:

24 correct answers
out of 27 respondents

You only have two series and want a simpler test.



2 votes



You suspect multiple cointegrating relationships among several assets.



24 votes

You need a non-parametric approach.



0 votes

You want to avoid estimating any parameters.



1 vote