Seven Intraday Trend Strategies for Nasdaq-100 Futures: Rules, Records and Out-of-Sample Evidence

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Abstract

This paper documents seven rule-based intraday strategies for the Nasdaq-100 E-mini future (NQ), each built from a stated market mechanism: the opening range breakout, the Market Profile open drive, initial-balance breakout and one-timeframing, a VWAP and order-flow strategy, a break of the options dealers' gamma wall, and a multi-day value-area breakout. For each I give the exact rules, two real sessions, the full record from January 2018 to 23 October 2026 after slippage and commission, and the evidence from data that played no part in choosing the rules. Together the seven strategies made 2,310 trades and +758.2R (one R is the amount risked on a trade), with a profit factor of 1.84, an annualised Sharpe ratio of 2.49 (95% bootstrap interval 2.06 to 2.94) and a maximum drawdown of −16.7R. Since the rules were frozen on 23 October 2026 the set has taken 33 trades for +14.14R. The evidence is strongest for the opening range breakout, open drive and value-area breakout, and weakest for one-timeframing and the gamma wall break; I report the weak results alongside the strong ones.

1 Introduction

Most published trading results are hard to use because the rules are vague, the costs are left out, or the test data were also the data used to choose the rules. This paper tries to avoid all three. Every strategy below is a short list of rules a reader could code from the text; every result includes one tick of slippage per fill and $4.50 commission per round trip; and every strategy is accompanied by the test that was set aside before it was built, whether that test was passed or not.

The seven strategies share a view of the intraday auction. Price in the first hour of the session absorbs the overnight information and the morning's economic news; after that, the market either accepts a new price level and trends away from it, or rotates within the levels it already accepted. All seven are bets on the first outcome, each with a different test for when it has happened: a break of the opening range (Section 4.1), an open drive (4.2), a break of the first hour's range (4.3), a run of one-sided half hours (4.4), an early move away from VWAP backed by aggressive order flow (4.5), a break of the strike where option dealers' hedging changes sign (4.6), and acceptance outside a multi-day value area (4.7). They hold until the close or a fixed target, so a trend that lasts the afternoon is captured in full.

Section 2 explains the market and the tools (Market Profile, value areas, VWAP, order flow and options gamma) for readers new to them, and Section 3 describes the data and the conventions. Section 4 takes the strategies one at a time. Section 5 explains how the strategies were validated and how overfitting was guarded against, Section 6 combines them, Section 7 reports the trades since the rules were frozen, Section 8 lists what was tested and rejected, and Section 9 sets out the limitations.

Table 1. The seven strategies, January 2018 to 23 October 2026, after costs. Sharpe ratios are of daily R over each strategy's own sample, annualised; intervals are 95% stationary-bootstrap intervals.

Strategy	Trades	Per yr	Win	PF	Total R	Sharpe	95% interval
Opening range breakout	707	79	44%	1.72	+176.3	1.81	1.25–2.35
Open drive	222	25	44%	2.32	+164.2	1.41	0.94–1.82
Initial-balance breakout	388	43	57%	1.61	+82.2	1.26	0.75–1.74
One-timeframing	156	17	38%	2.21	+118.0	0.83	0.40–1.24
VWAP and order flow	82	28	48%	2.33	+53.6	1.58	0.54–2.39
Gamma wall break	112	104	47%	1.56	+33.0	2.09	0.45–3.61
Value-area breakout	643	72	52%	1.66	+130.9	1.79	1.16–2.32
All seven	2,310	256	48%	1.84	+758.2	2.49	2.06–2.94

2 Background: the market and the tools

This section explains the market and the analytical tools the strategies use, for a reader who has not met them before.

The contract. The E-mini Nasdaq-100 future (ticker NQ) is a futures contract on the Nasdaq-100 index, traded on CME Globex almost 24 hours a day, five days a week. Its price moves in ticks of 0.25 index points, and each point is worth $20, so one tick is $5. The Micro E-mini (MNQ) is the same contract at one tenth of the size, which lets a trader risk a fixed dollar amount with fine control. The contract expires quarterly; this paper always uses the most active (front) month and rolls a few days before expiry.

The session, the overnight and the gap. Although NQ trades nearly all day, most volume and most of the strategies' signals fall in the *regular session* that matches the US cash equity market, 8:30 to 15:00 Central time. The hours before it are the overnight session, which this paper splits into the Asian session (19:00 to 02:00) and the London session (02:00 to 05:00). The *gap* is the difference between the regular session's opening price and the previous session's close; a large gap means the overnight hours have already moved price, and several strategies only trade in the direction of the gap. The *opening range* is the high and low of the first minutes of the regular session (here the first fifteen).

R: the unit of risk. Every result in this paper is measured in *R*, a unit of risk rather than of money. Before a trade is entered its stop is fixed, and the amount that would be lost if the stop were hit is one R. A trade that hits its stop therefore loses about 1R, a trade that makes twice its risk earns +2R, and a trade closed halfway to its stop loses 0.5R. Slippage and commission are subtracted before the result is converted, so a trade stopped out typically shows slightly worse than −1R.

A real trade makes this concrete. On 16 October 2026 the opening range breakout went short at 29,837.50 with its stop at 29,994.00, 156.50 points away. On one Micro E-mini contract ($2 a point) that is $313 of risk, so for this trade 1R = $313. The trade reached its target three risk-distances away and closed at +3.00R, about $938 on that contract. A trade on another day might have a stop only 40 points away; one contract would then risk $80, and the same +3R would be worth $240. Measured in R the two trades are the same result, and that is the point of the unit.

R does three jobs. It puts strategies with very different stop sizes on one scale, so an opening range breakout with a 150-point stop and a one-timeframing trade with a 15-point stop can be added together. It describes a strategy independently of account size. And it converts to money by one multiplication: a trader who risks the same dollar amount on every trade earns that amount times the result in R. Risking $200 a trade, the +758.2R of the seven strategies together would be $151,640 before taxes, and their deepest drawdown of −16.7R would be $3,340. The conversion assumes position size can be set exactly; in practice contracts come in whole numbers, so the dollars risked on a trade are rounded down, which is one reason the paper

reports R rather than dollars.

Market Profile. Market Profile, developed by J. Peter Steidlmayer at the Chicago Board of Trade in the 1980s (Steidlmayer and Koy, 1986; Dalton et al., 2013), organises a session by price instead of by time. Each half hour gets a letter, A for 8:30, B for 9:00 and so on to M for 14:30, and the letter is written at every price traded in that half hour. Each letter-at-a-price is a *time price opportunity* (TPO). Stacked up, the letters form a sideways histogram of where the market spent its time (Figure 1a). The vocabulary used in this paper:

Initial balance (IB). The range of the first hour, periods A and B. It is the area where the early, short-term participants trade with each other; a move beyond it usually needs a longer-term participant to enter.

Point of control (POC). The price with the most TPOs, where the session spent the most time: the fairest price of the day.

Value area. The range around the point of control that holds 70% of the TPOs (or, in the volume version below, 70% of the volume). Price inside it was accepted; prices outside it were tested and, usually, rejected.

Open types. Dalton classifies the open by what the first periods do. In an *open drive* the market opens at one extreme of its first period and moves steadily to the other without returning to the open, showing that the participants who set the open are not defending it. Other open types (test drive, rejection-reverse, auction) show more two-sided trade.

One-timeframing. A run of half hours in which each makes a higher high and a higher low than the one before (or lower and lower in a falling market). Only one timeframe is active and it is pushing one way; the run ends when a period trades beyond the previous period's opposite extreme.

Balance and imbalance. A market rotating inside a value area is in balance; one that leaves value and is accepted at new prices is in imbalance, or trending. All seven strategies are attempts to detect imbalance early.

In the session of Figure 1 the initial balance ran from 30,560.75 to 30,856.00 and the value area from about 30,555 to 30,780, with the point of control near 30,600: a balanced day, of the kind the trend strategies are designed to sit out.

Volume profile and value areas. A volume profile is the same idea with contracts traded at each price instead of time (Figure 1b). Its value area holds 70% of the session's volume around the price where the most contracts traded. Value areas of several sessions together (the 2, 3 or 5-day value area) mark the price range the market has accepted over days rather than hours; the value-area breakout strategy trades the moment price is accepted outside it.

VWAP and its bands. The volume-weighted average price since the open,

$$\mathrm{VWAP}_t = \frac{\sum_{\tau \le t} p_\tau v_\tau}{\sum_{\tau \le t} v_\tau}, \tag{1}$$

where p_τ is each minute's typical price (high, low and close averaged) and v_τ its volume, is the average price paid by everyone who traded that day. Institutions use it as the benchmark for their own fills (Berkowitz et al., 1988), so a price well above VWAP means most of the day's buyers are in profit and most sellers are not. The bands are VWAP plus and minus the volume-weighted standard deviation of price; being one standard deviation away measures how far the market has stretched, in units that adapt to the day's volatility.

Order flow and cumulative delta. Every trade on the exchange has a buyer and a seller, but only one of them crossed the spread to trade immediately; that side is the *aggressor*. A trade at the ask is an aggressive buy, a trade at the bid an aggressive sell. *Delta* is aggressive buying volume minus aggressive selling volume, and *cumulative delta* is its running total since 8:30. It measures urgency: price can rise on passive selling

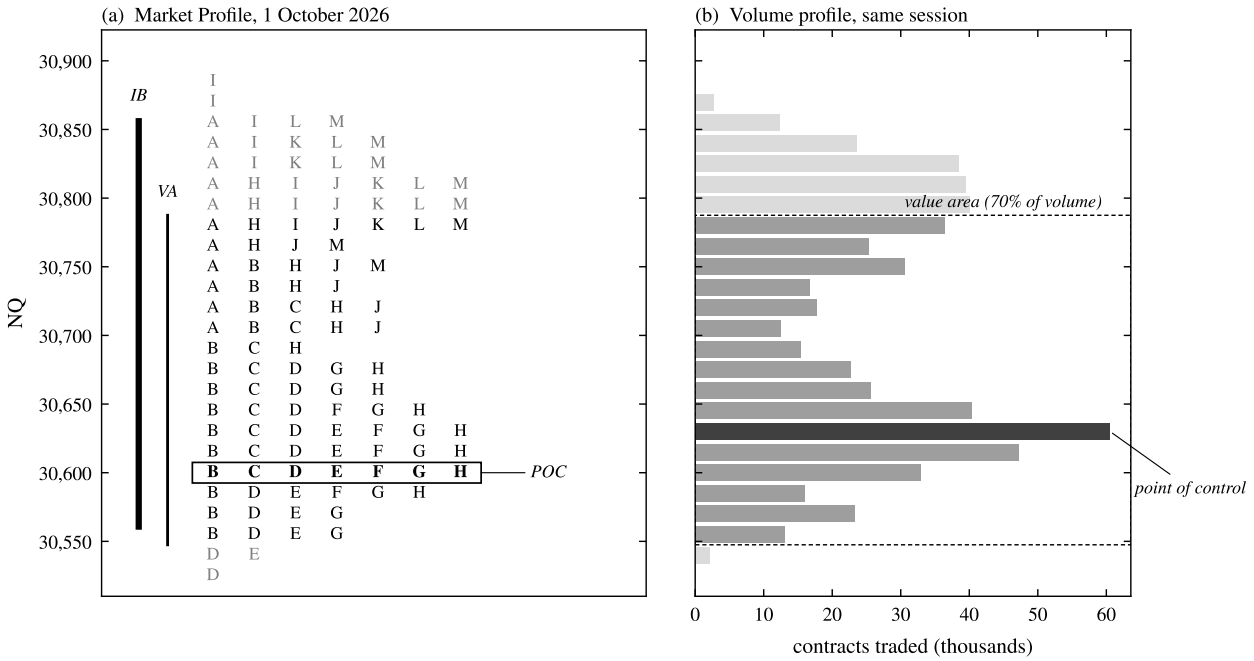


Figure 1. One session drawn two ways. (a) Market Profile: each letter is a half hour (A = 8:30, B = 9:00, …, M = 14:30), written at every price traded in it; the bold row is the point of control, the thin bar marks the value area and the thick bar the initial balance (periods A and B). Letters outside the value area are grey. (b) Volume profile: contracts traded at each price; dark bar the point of control, mid grey the value area.

drying up, or on buyers paying up; delta tells the two apart (Cont et al., 2014). The strategies use it as a filter, skipping trades when the session's aggressors are on the other side.

Options open interest, dealer gamma and walls. *Open interest* is the number of option contracts outstanding at each strike and expiry. Market makers (dealers) who sell those options hedge them in the underlying, and the rate at which their hedge must change as price moves is the option's *gamma*. Summing gamma over all strikes, signed by whether dealers are likely long or short each option, gives the dealers' net gamma. When it is positive, their hedging trades against moves (selling rallies and buying dips), which damps volatility; when negative, their hedging chases moves and amplifies them (Ni et al., 2005; Barbon and Buraschi, 2021; Baltussen et al., 2021). The *call wall* and *put wall* are the strikes above and below price with the most call and put gamma, where those hedging flows are concentrated. The QQQ exchange-traded fund tracks the same index as NQ and has a deep options market, so its open interest is converted to NQ prices by the ratio of the two closes.

3 Data and method

Prices. One-minute OHLCV bars of the front-month NQ contract from CME Globex, January 2018 to 23 October 2026 (2,273 regular sessions), sourced from Databento. The regular session runs 8:30 to 15:00 CT; all times in this paper are Central. Overnight highs and lows (Asian session 19:00 to 02:00, London 02:00 to 05:00) come from the same data.

Order flow. Aggressor-side trade data from 25 October 2023 to 23 October 2026 (744 sessions), used to compute cumulative delta, the volume traded at the ask minus the volume traded at the bid since 8:30.

Options. Daily QQQ option open interest by strike and expiry from 3 October 2025, converted to NQ prices with the ratio of the two closes.

Execution. Signals are computed on completed bars and filled at the next minute's open plus one tick (0.25 points) of slippage against the trade; stops and targets fill at their level with the same slippage. Commission is $4.50 per NQ round trip. Every position is closed by 14:55. No trade uses information from after its entry bar.

The unit of account. As described in Section 2, results are in R, the loss if the stop is hit. Formally, for trade i,

$$R_i = \frac{s_i \left(P_i^{\text{exit}} - P_i^{\text{entry}}\right) - c_i}{\left|P_i^{\text{entry}} - P_i^{\text{stop}}\right|}, \tag{2}$$

where $s_i = \pm 1$ is the side and c_i the slippage and commission in points. A trader who risks the same amount on each trade earns that amount times R_i, so R makes strategies with different stop sizes comparable. The profit factor is the sum of winning R over the sum of losing R. The Sharpe ratio is computed on daily R, including days without a trade, over the strategy's own sample, and annualised with $\sqrt{252}$. Its 95% interval comes from 2,000 draws of a stationary bootstrap with a mean block of 20 sessions (Politis and Romano, 1994), which keeps the clustering of good and bad weeks.

How the strategies were tested. The rules of each strategy were written down before its first backtest. Each was then checked on data that played no part in choosing it, with one or more of the following: a *held-out period* not used while the rules were built; the *S&P 500 future* (ES) as a second market, never used to choose a setting; a *lockbox* of randomly chosen months, opened once; and k-fold *cross-validation* by year. Because many variants were tried across the research, each strategy also reports the *deflated Sharpe ratio* of Bailey and López de Prado (2014), the probability that its Sharpe ratio is above zero after accounting for the number of trials (given at 100 and 3,000 trials), and where it was computed, the *probability of backtest overfitting* (Bailey et al., 2017). These corrections follow the multiple-testing concern of Harvey et al. (2016): with enough trials, a high backtest Sharpe ratio is expected by chance.

4 The strategies

4.1 Opening range breakout

Idea. Trade the first break of the opening 15 minutes, but only when the overnight session and the trend agree. The opening range breakout is the oldest idea in this paper and the one with the most published support. The first minutes of the regular session concentrate the overnight information flow: orders that queued while the cash market was shut, the reaction to 7:30 CT economic releases, and the positioning of participants who only trade the open. When price leaves the range those minutes defined, it signals that one side has more inventory to move than the other can absorb at the opening prices (Crabel, 1990; Zarattini and Aziz, 2023). The version here adds three filters that ask whether the break agrees with information the market already had: the overnight extremes (filter A), the 20-day trend (filter C) and the direction of the opening candle itself (filter D). A break that clears the Asian or London high has already outrun the overnight auction; a break against the 20-day mean is fighting the larger trend.

Rules. All times are Central (CT). The strategy trades the front-month Nasdaq-100 E-mini future (NQ) during the regular session.

(i) Opening range: high and low of 8:30 to 8:45 CT.

(ii) A 15-minute candle closes outside the range; enter at the next minute's open.

(iii) Filter A: the entry is beyond the Asian (19:00 to 02:00 CT) or London (02:00 to 05:00 CT) high for a long, low for a short.

(iv) Filter C: the 8:30 open is on the trade's side of the 20-day average close.

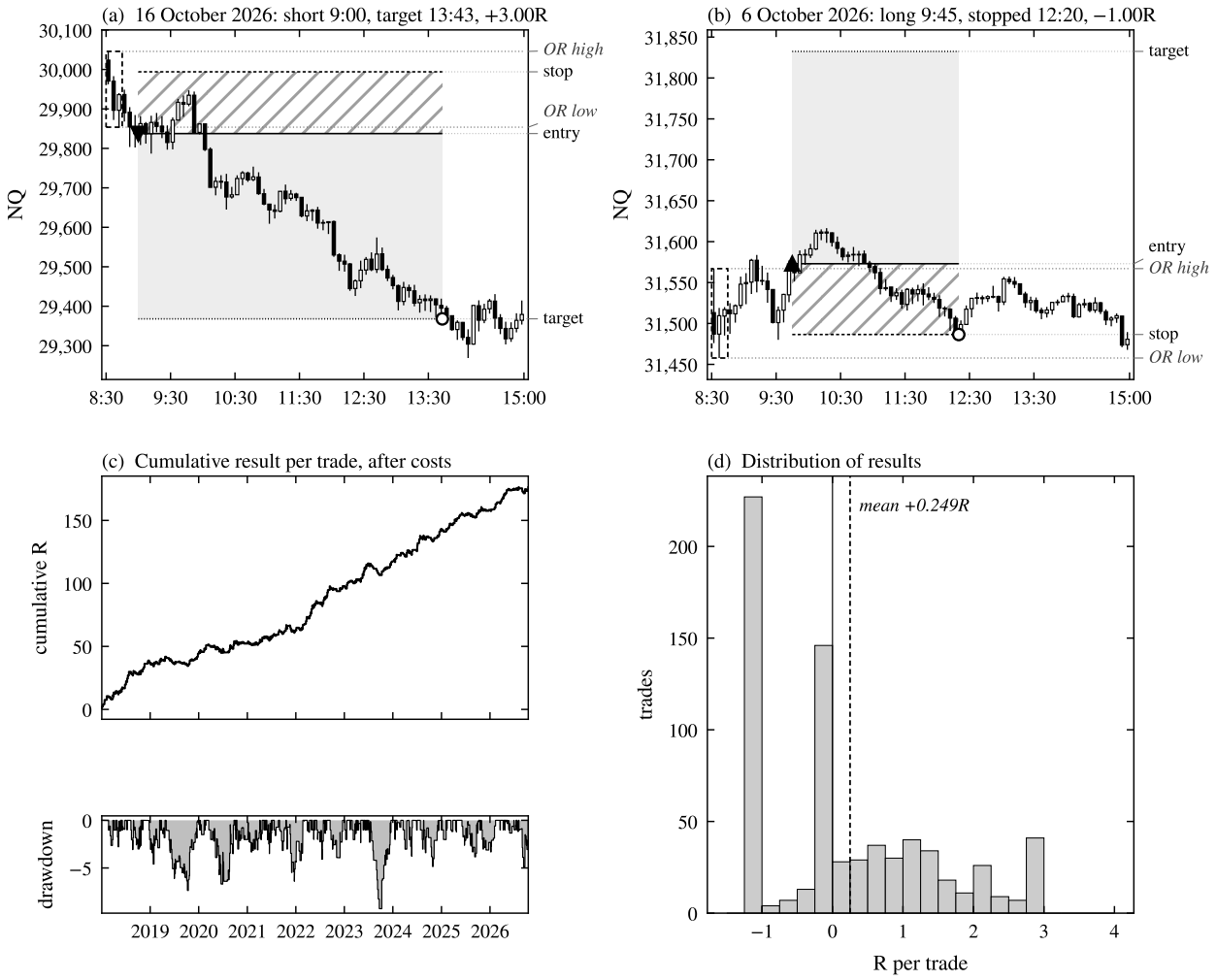


Figure 2. Opening range breakout. (a)–(b) Five-minute candles (hollow up, solid down) with the setup, entry, stop and target. (c) Cumulative result in R per trade, after costs, with drawdown below. (d) Distribution of R per trade; results above the top bin are placed in it.

(v) Filter D: the opening 15-minute candle closed in the trade's direction.

(vi) Second chance (rule G): if the first breakout fails the filters, take the next one that passes, only in the direction of the overnight gap.

(vii) Stop at 75% of the distance to the far side of the range. Target 3R. Stop to breakeven at +0.85R. Flat at 14:55 CT. One trade a day.

A sample setup. Figure 2 shows two real sessions. On 16 October 2026 (panel a) the strategy went short at 9:00 at 29,837.50, with a stop at 29,994.00 (156.5 points of risk) and a target at 29,368.00. The trade reached the 3.0R target at 13:43 for +3.00R. On 6 October 2026 (panel b) the strategy went long at 9:45 at 31,573.00, with a stop at 31,486.50 (86.5 points of risk) and a target at 31,832.50. The trade was stopped out at 12:20 for −1.00R. In both panels the dashed lines mark the setup, named on the right edge; the triangle is the entry and the open circle the exit; the hatched block is the risk to the stop and the grey block the reward to the target or exit.

Statistics. Table 2 reports the record from 2 January 2018 to 16 October 2026. Trades end at the target, the stop, breakeven or the close in these shares: target 6%, stop 32%, breakeven 18%, close 44%. Long trades:

501, +120.7R; short trades: 206, +55.6R. The median trade is held 189 minutes.

Table 2. Opening range breakout: record after costs.

Trades	707
Trades per year	79
Win rate	43.8%
Average win	1.36R
Average loss	−0.62R
Expectancy per trade	0.249R
t-statistic of the mean	5.52
Profit factor	1.72
Total	+176.3R
Sharpe ratio (daily, annualised)	1.81
95% bootstrap interval	1.25 to 2.35
Maximum drawdown	−9.28R
Longest time between highs	176 sessions
Longest losing run	16 trades
Best / worst trade	+3.00R / −1.09R

Year	Trades	Win	Total R	PF
2018	81	47%	+36.8	2.38
2019	87	39%	+7.4	1.25
2020	87	41%	+8.0	1.24
2021	85	47%	+10.5	1.30
2022	80	42%	+35.1	2.43
2023	84	39%	+19.7	1.65
2024	71	42%	+25.5	2.01
2025	77	44%	+15.3	1.63
2026*	55	56%	+17.9	2.08

*To 23 October 2026.

Validation.

Held out while the rules were built. 2018 to 2021: profit factor 1.61; 2022 to 2026: 1.93 (first-signal version, before commission).

Deflated Sharpe ratio. 99.9% after 100 trials, 97% after 3,000.

Post hoc part. The second chance (89 trades, +13.9R) was found after the Oct 30 2026 selloff; it is paper-traded.

Weaknesses. 44% of trades close at 14:55 without reaching either stop or target, so the result depends on the afternoon. The second-chance rule (G) was found after the 30 October 2026 selloff; it is reported here as part of the strategy but is paper-traded until it has its own out-of-sample record.

4.2 Open drive

Idea. When the first half hour opens at one extreme and closes at the other, in the direction of the gap, ride it to the close. An *open drive* in Market Profile terms is a session that opens at one extreme of its first period and auctions steadily to the other, with no return to the opening price (Dalton et al., 2013). It is the clearest early sign of a one-sided auction: the participants who set the open are not defending it. The rule requires the drive to run in the direction of the overnight gap, so the open and the first half hour carry the same information. This links to the market intraday momentum documented by Gao et al. (2018), where the return over the first half hour predicts the return over the last, and to the hedging-demand explanation of Baltussen et al. (2021): when option dealers are short gamma, their hedges push in the direction of the move. The trade is held to the close because the hypothesis is about the whole day.

Rules. All times are Central (CT). The strategy trades the front-month Nasdaq-100 E-mini future (NQ) during the regular session.

(i) Not an FOMC day.

(ii) 8:30 to 9:00 CT: the open sits within 15% of one extreme of the range and the 9:00 close within 30% of the other (a textbook Dalton open drive).

(iii) The session gapped in the drive's direction by at least 10% of the prior session's range.

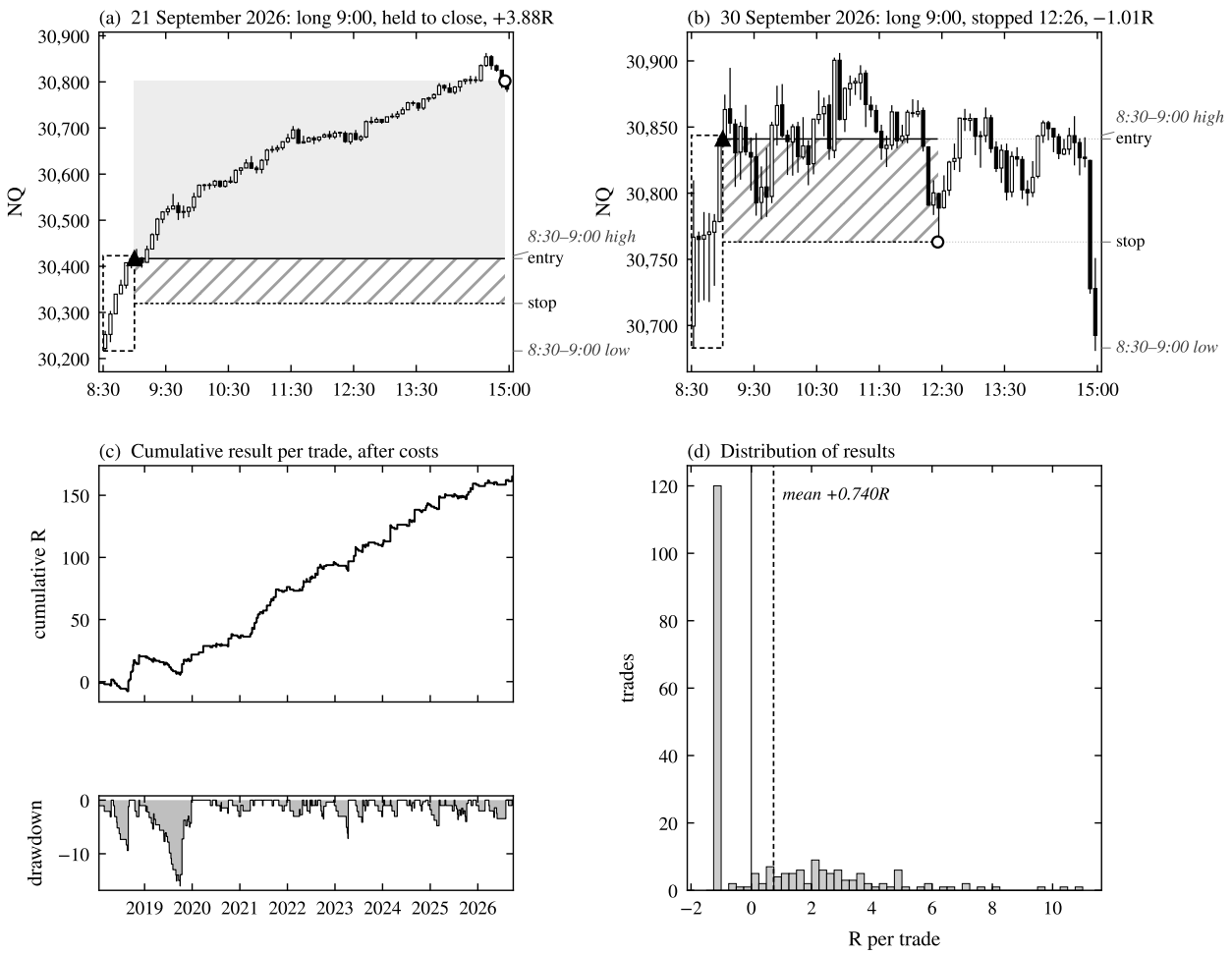


Figure 3. Open drive. (a)–(b) Five-minute candles (hollow up, solid down) with the setup, entry, stop and target. (c) Cumulative result in R per trade, after costs, with drawdown below. (d) Distribution of R per trade; results above the top bin are placed in it.

(iv) Enter at 9:00 CT in the drive's direction. Stop 1 tick past the 8:30 to 9:00 midpoint. Hold to 14:55 CT.

(v) Order-flow filter: skip when cumulative delta since 8:30 is against the trade (sessions with order flow, Oct 2023 on).

A sample setup. Figure 3 shows two real sessions. On 21 September 2026 (panel a) the strategy went long at 9:00 at 30,416.75, with a stop at 30,319.50 (97.2 points of risk). The trade was closed at 14:55 for +3.88R. On 30 September 2026 (panel b) the strategy went long at 9:00 at 30,841.00, with a stop at 30,763.12 (77.9 points of risk). The trade was stopped out at 12:26 for −1.01R. In both panels the dashed lines mark the setup, named on the right edge; the triangle is the entry and the open circle the exit; the hatched block is the risk to the stop and the grey block the reward to the target or exit.

Statistics. Table 3 reports the record from 16 January 2018 to 30 September 2026. Trades end at the target, the stop, breakeven or the close in these shares: stop 54%, close 46%. Long trades: 149, +87.4R; short trades: 73, +76.8R. The median trade is held 198 minutes.

Table 3. Open drive: record after costs.

Trades	222
Trades per year	25
Win rate	44.1%
Average win	2.95R
Average loss	−1.01R
Expectancy per trade	0.740R
t-statistic of the mean	4.39
Profit factor	2.32
Total	+164.2R
Sharpe ratio (daily, annualised)	1.41
95% bootstrap interval	0.94 to 1.82
Maximum drawdown	−16.02R
Longest time between highs	283 sessions
Longest losing run	9 trades
Best / worst trade	+13.09R / −1.10R

Year	Trades	Win	Total R	PF
2018	24	33%	+20.3	2.22
2019	36	33%	+1.4	1.06
2020	17	47%	+13.4	2.46
2021	24	75%	+41.0	7.65
2022	29	45%	+19.1	2.23
2023	22	27%	+13.6	1.83
2024	26	54%	+32.9	3.72
2025	28	43%	+16.6	2.05
2026*	16	44%	+5.8	1.70

*To 23 October 2026.

Validation.

S&P 500 futures, never used to choose rules. 198 trades, +91.6R, profit factor 1.70.

2018 to 2020, not used for any choice. Part of 231 NQ trades, +162.5R, every year up (without the order-flow filter).

Deflated Sharpe ratio. 99% after 100 trials, 78% after 3,000.

Weaknesses. The win rate is low by construction: the stop sits at the midpoint of the first half hour, so ordinary noise stops many trades and the result comes from a minority of large days. The best day returned more than 13R; the strategy should be judged over years rather than months.

4.3 Initial-balance breakout

Idea. After the first hour sets the initial balance, join a breakout that goes the gap's way and is stretched but not exhausted from VWAP. The *initial balance* is the range of the first hour. In auction theory it is the area where the early, short-timeframe participants find two-sided trade; a move beyond it means a longer-timeframe participant has entered (Steidlmayer and Koy, 1986; Dalton et al., 2013). Most initial-balance breaks fail, which is why this version asks for three things together: the break goes the way of the overnight gap, price is one to two standard deviations from the volume-weighted average price, and (since October 2023) the session's order flow agrees. The VWAP condition separates a break with momentum (stretched) from one that has already exhausted itself (beyond two standard deviations).

Rules. All times are Central (CT). The strategy trades the front-month Nasdaq-100 E-mini future (NQ) during the regular session.

(i) Initial balance: high and low of the first hour, 8:30 to 9:30 CT.

(ii) After 9:30, the first 5-minute close beyond the initial balance, in the direction of the overnight gap (gap at least 10% of the prior range).

(iii) Price is 1 to 2 standard deviations past session VWAP.

(iv) Stop at the initial-balance midpoint. Hold to 14:55 CT.

(v) Order-flow filter: skip when cumulative delta since 8:30 is against the trade.

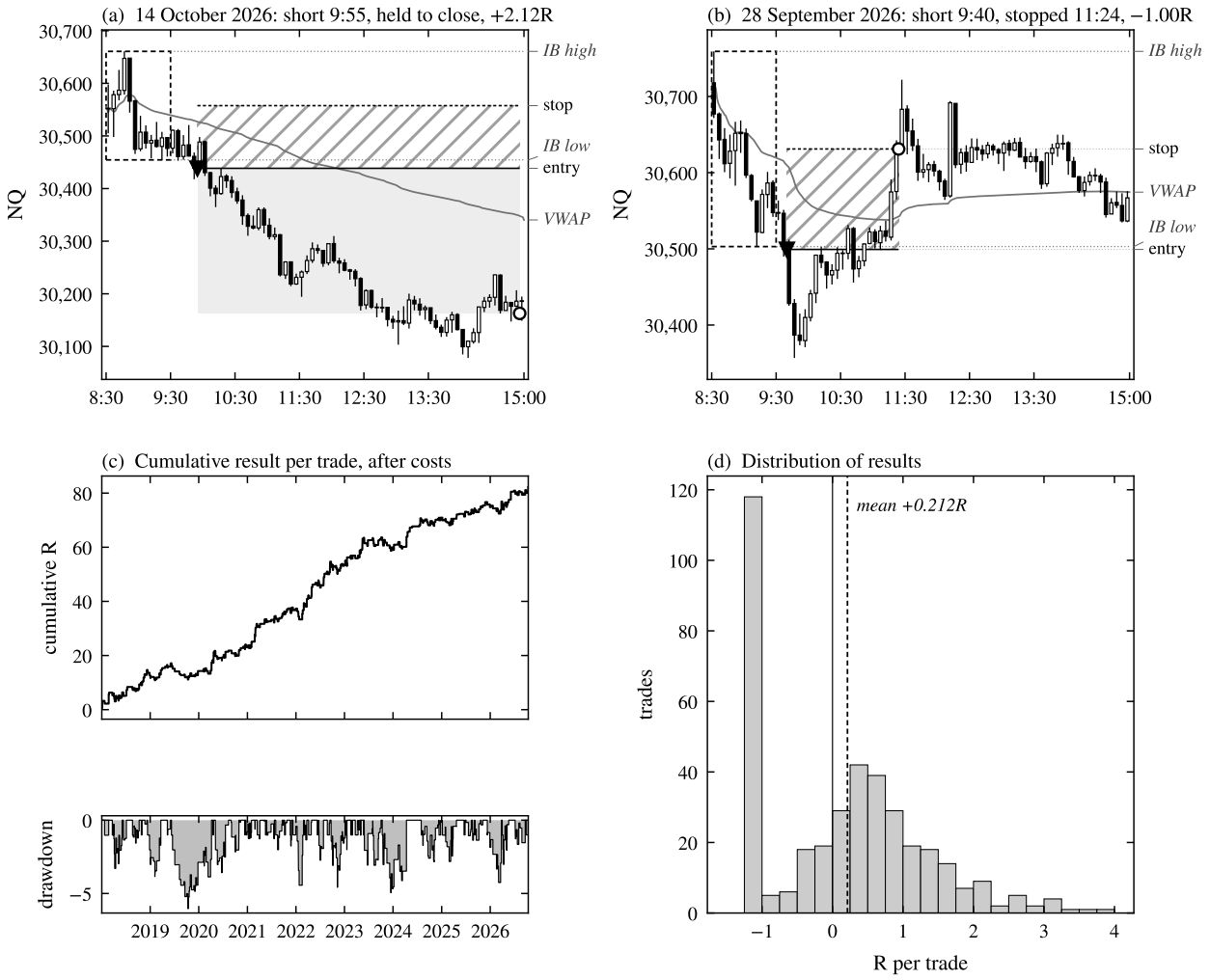


Figure 4. Initial-balance breakout. (a)–(b) Five-minute candles (hollow up, solid down) with the setup, entry, stop and target. (c) Cumulative result in R per trade, after costs, with drawdown below. (d) Distribution of R per trade; results above the top bin are placed in it.

A sample setup. Figure 4 shows two real sessions. On 14 October 2026 (panel a) the strategy went short at 9:55 at 30,438.50, with a stop at 30,557.62 (119.1 points of risk). The trade was closed at 14:55 for +2.12R. On 28 September 2026 (panel b) the strategy went short at 9:40 at 30,499.25, with a stop at 30,631.13 (131.9 points of risk). The trade was stopped out at 11:24 for −1.00R. In both panels the dashed lines mark the setup, named on the right edge; the triangle is the entry and the open circle the exit; the hatched block is the risk to the stop and the grey block the reward to the target or exit.

Statistics. Table 4 reports the record from 2 January 2018 to 14 October 2026. Trades end at the target, the stop, breakeven or the close in these shares: stop 30%, close 70%. Long trades: 238, +57.7R; short trades: 150, +24.6R. The median trade is held 260 minutes.

Table 4. Initial-balance breakout: record after costs.

Trades	388
Trades per year	43
Win rate	57.2%
Average win	0.98R
Average loss	−0.81R
Expectancy per trade	0.212R
t-statistic of the mean	3.85
Profit factor	1.61
Total	+82.2R
Sharpe ratio (daily, annualised)	1.26
95% bootstrap interval	0.75 to 1.74
Maximum drawdown	−6.03R
Longest time between highs	214 sessions
Longest losing run	4 trades
Best / worst trade	+3.75R / −1.05R

Year	Trades	Win	Total R	PF
2018	43	56%	+12.6	1.81
2019	40	60%	+1.6	1.13
2020	42	60%	+9.0	1.62
2021	50	66%	+14.1	2.07
2022	57	54%	+16.1	1.79
2023	46	50%	+5.5	1.25
2024	36	67%	+12.0	2.19
2025	40	55%	+3.9	1.30
2026*	34	47%	+7.4	1.52

*To 23 October 2026.

Validation.

Cross-validation. NQ 2021 to 2026: +61.5R, profit factor 1.63, all 6 folds up.

Older NQ and S&P 500. NQ 2018 to 2020: +24.2R, PF 1.58. ES: +72.0R, PF 1.45, 7 of 9 years up.

Caveat. Found by screening the same samples; deflated Sharpe 92% after 100 trials, 61% after 3,000.

Weaknesses. The rules were found by screening variants on the same data that tested them, which the deflated Sharpe ratio of 92% after 100 trials and 61% after 3,000 reflects. The S&P 500 result is the stronger evidence.

4.4 One-timeframing

Idea. On a drive day, wait for three half-hour brackets that each push to a new extreme, then join the one-sided auction. *One-timeframing* describes a market in which each half-hour period makes a higher high and a higher low (or lower, for a falling market) than the last: only one timeframe is active, and it is pushing in one direction (Dalton et al., 2013). On a day that also opened with a drive, three such periods in a row mean the one-sided auction has lasted through the morning. Joining it late gives up the first part of the move but enters only after the market has shown its character. The stop sits just beyond the last period's extreme, which is where the one-timeframing would end.

Rules. All times are Central (CT). The strategy trades the front-month Nasdaq-100 E-mini future (NQ) during the regular session.

(i) A textbook open-drive day (the open-drive shape in 8:30 to 9:00 CT).

(ii) Three 30-minute periods in a row with higher highs and higher lows (lower for shorts) in the drive's direction.

(iii) Session VWAP moving the same way since 8:35 CT, and the trade agrees with yesterday's close-to-close move.

(iv) Enter at the next period's open. Stop 1 tick past the last period's low (high for shorts). Hold to 14:55 CT.

(v) Order-flow filter: skip when cumulative delta since 8:30 is against the trade.

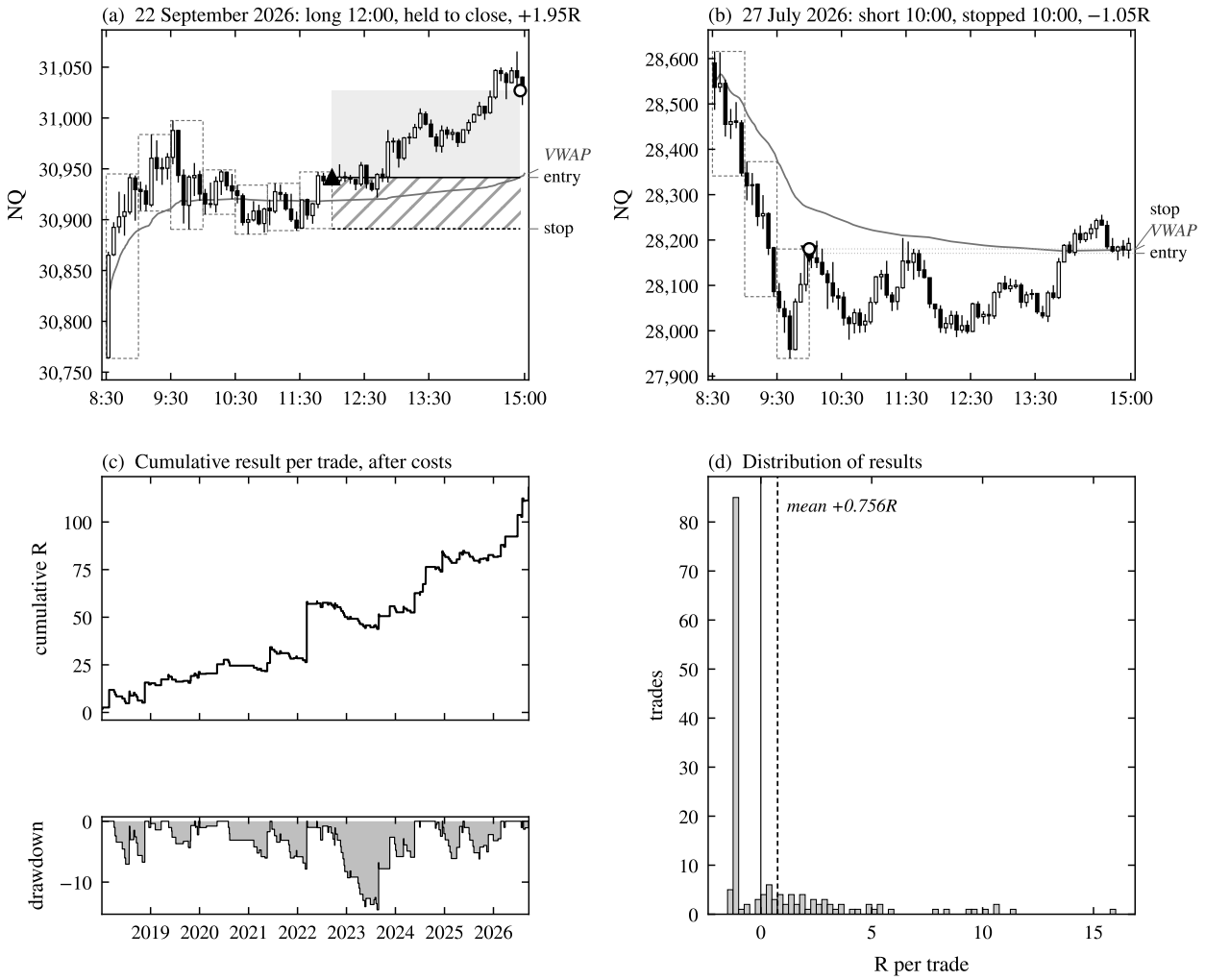


Figure 5. One-timeframing. (a)–(b) Five-minute candles (hollow up, solid down) with the setup, entry, stop and target. (c) Cumulative result in R per trade, after costs, with drawdown below. (d) Distribution of R per trade; results above the top bin are placed in it.

A sample setup. Figure 5 shows two real sessions. On 22 September 2026 (panel a) the strategy went long at 12:00 at 30,941.50, with a stop at 30,891.00 (50.5 points of risk). The trade was closed at 14:55 for +1.95R. On 27 July 2026 (panel b) the strategy went short at 10:00 at 28,170.75, with a stop at 28,180.50 (9.8 points of risk). The trade was stopped out at 10:00 for −1.05R. In both panels the dashed lines mark the setup, named on the right edge; the triangle is the entry and the open circle the exit; the hatched block is the risk to the stop and the grey block the reward to the target or exit.

Statistics. Table 5 reports the record from 3 January 2018 to 22 September 2026. Trades end at the target, the stop, breakeven or the close in these shares: stop 58%, close 42%. Long trades: 105, +85.1R; short trades: 51, +32.9R. The median trade is held 109 minutes.

Table 5. One-timeframing: record after costs.

Trades	156
Trades per year	17
Win rate	38.5%
Average win	3.59R
Average loss	−1.02R
Expectancy per trade	0.756R
t-statistic of the mean	2.55
Profit factor	2.21
Total	+118.0R
Sharpe ratio (daily, annualised)	0.83
95% bootstrap interval	0.40 to 1.24
Maximum drawdown	−14.55R
Longest time between highs	514 sessions
Longest losing run	8 trades
Best / worst trade	+31.64R / −1.48R

Year	Trades	Win	Total R	PF
2018	21	33%	+14.7	1.94
2019	19	53%	+6.6	1.80
2020	8	38%	+3.3	1.79
2021	18	33%	+3.9	1.33
2022	22	23%	+21.7	2.25
2023	18	33%	+4.5	1.38
2024	20	45%	+28.0	3.41
2025	19	32%	−1.0	0.93
2026*	11	73%	+36.3	11.77

*To 23 October 2026.

Validation.

Deflated Sharpe ratio. 18% after 100 trials, 1% after 3,000: the weakest statistical case of the ten.

S&P 500. Positive, but −1.0R without its three best trades.

Post hoc part. The yesterday-direction rule (with: 153 trades +121.1R; against: 156 trades −26.5R) was found by looking at the data.

Weaknesses. This is the weakest statistical case in the set. Its deflated Sharpe ratio is 18% after 100 trials, its S&P 500 result turns negative without its three best trades, and the rule that it trade only in the direction of yesterday's move was found by looking at the data. It stays in the set at small size because its days rarely overlap with the others'.

4.5 VWAP and order flow

Idea. At 9:00 CT, if price has left VWAP and aggressive volume agrees, bet the morning's direction lasts the day. The volume-weighted average price is the benchmark execution price for institutional orders (Berkowitz et al., 1988), so a market trading well away from it by 9:00 CT has already moved the average participant's cost basis. On its own that is a weak signal; this strategy asks whether the *aggressive* side of the order book agrees. Cumulative delta, the volume traded at the ask minus the volume traded at the bid, measures who crossed the spread to trade (Cont et al., 2014). When price is at least one standard deviation from VWAP and delta is at least 2% of volume on the same side, the move is being driven by urgent buyers or sellers rather than by the absence of the other side. Two filters remove the days where this fails most: trades that fade a large overnight gap, and opening ranges far wider than usual.

Rules. All times are Central (CT). The strategy trades the front-month Nasdaq-100 E-mini future (NQ) during the regular session.

(i) At 9:00 CT price is at least 1 standard deviation from session VWAP (anchored at 8:30).

(ii) Cumulative delta since 8:30 is at least 2% of volume on the same side (aggressor buys minus sells).

(iii) Skip if the trade fades the overnight gap by more than 0.25%, or the 8:30 to 9:00 range is over 1.3 times its 20-session median.

(iv) Enter at 9:00 CT. Stop 0.5 standard deviations beyond VWAP on the other side. Hold to 14:55 CT.

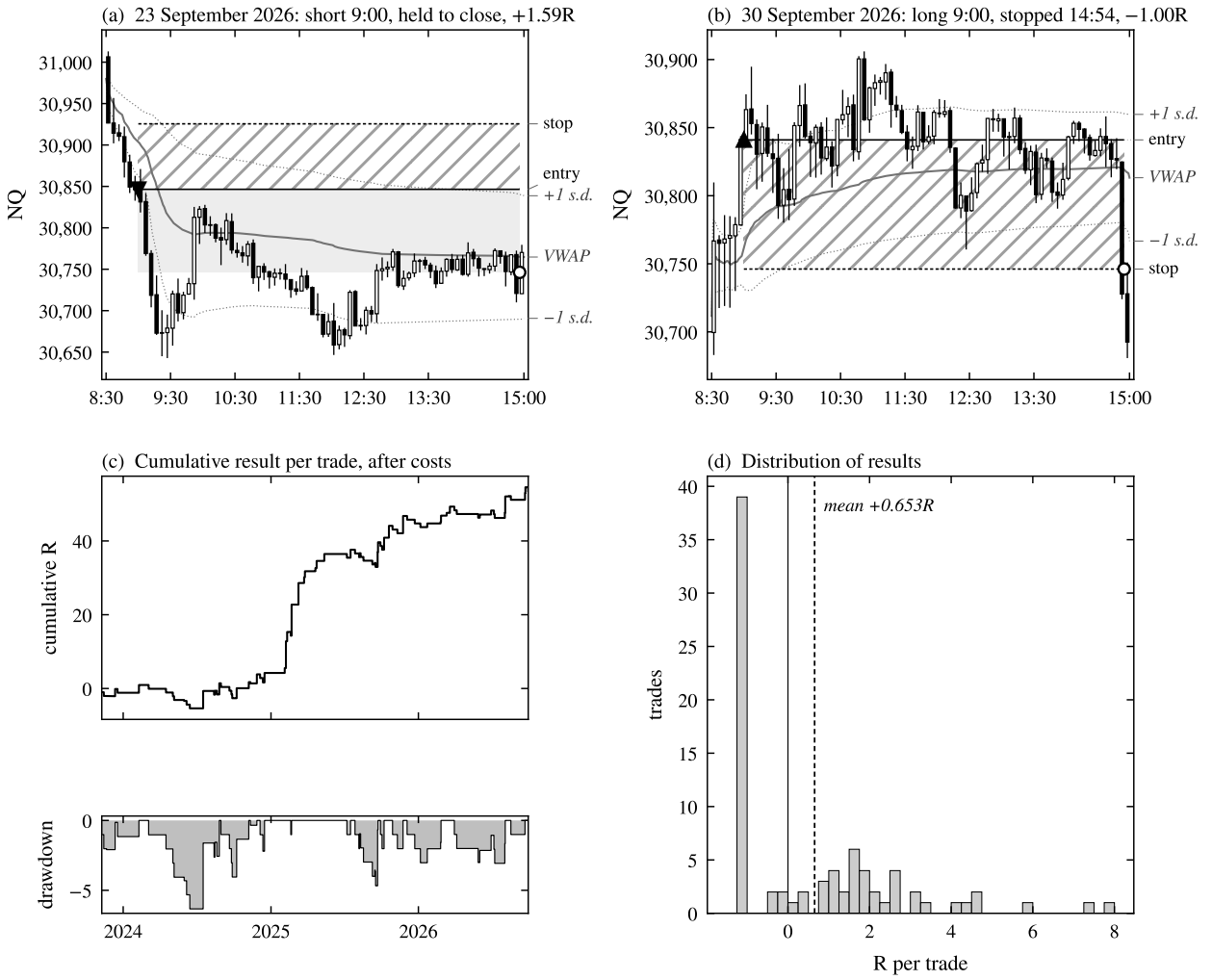


Figure 6. VWAP and order flow. (a)–(b) Five-minute candles (hollow up, solid down) with the setup, entry, stop and target. (c) Cumulative result in R per trade, after costs, with drawdown below. (d) Distribution of R per trade; results above the top bin are placed in it.

A sample setup. Figure 6 shows two real sessions. On 23 September 2026 (panel a) the strategy went short at 9:00 at 30,846.50, with a stop at 30,925.55 (79.0 points of risk). The trade was closed at 14:55 for +1.59R. On 30 September 2026 (panel b) the strategy went long at 9:00 at 30,841.00, with a stop at 30,746.14 (94.9 points of risk). The trade was stopped out at 14:54 for −1.00R. In both panels the dashed lines mark the setup, named on the right edge; the triangle is the entry and the open circle the exit; the hatched block is the risk to the stop and the grey block the reward to the target or exit.

Statistics. Table 6 reports the record from 9 November 2023 to 30 September 2026. Trades end at the target, the stop, breakeven or the close in these shares: stop 48%, close 52%. Long trades: 50, +26.9R; short trades: 32, +26.7R. The median trade is held 355 minutes.

Table 6. VWAP and order flow: record after costs.

Trades	82
Trades per year	28
Win rate	47.6%
Average win	2.41R
Average loss	−0.94R
Expectancy per trade	0.653R
t-statistic of the mean	2.81
Profit factor	2.33
Total	+53.6R
Sharpe ratio (daily, annualised)	1.58
95% bootstrap interval	0.54 to 2.39
Maximum drawdown	−6.33R
Longest time between highs	140 sessions
Longest losing run	7 trades
Best / worst trade	+8.43R / −1.18R

Year	Trades	Win	Total R	PF
2023	5	20%	−1.2	0.63
2024	24	33%	+5.4	1.36
2025	33	55%	+40.5	3.84
2026*	20	60%	+8.8	2.10

*To 23 October 2026.

Validation.

Lockbox (153 hidden sessions, opened once). v2: 17 trades, +4.3R, PF 1.38, max drawdown −5.0R. v1 on the same sessions: +1.0R.

Overfitting checks. Probability of backtest overfitting 55%; deflated Sharpe 57%, 19% and 10% after 100, 1,000 and 3,000 trials.

Planning number. The order-flow filter is real; plan on about half the backtest edge.

Weaknesses. The strategy has only 82 trades, all from the period with order-flow data (October 2023 on). Its probability of backtest overfitting is 55%, and its deflated Sharpe ratio falls to 10% after 3,000 trials. The working assumption is about half of the backtest edge.

4.6 Gamma wall break

Idea. Options dealers' gamma marks the strikes where hedging flows change. Trade the break of the wall the gamma regime leans toward. Option dealers hedge the options they are short. Aggregated by strike, their gamma tells which way that hedging pushes: when dealers are net long gamma, they sell rallies and buy dips, damping moves; when net short, they chase them (Ni et al., 2005; Barbon and Buraschi, 2021; Baltussen et al., 2021). The strikes with the largest open interest above and below price (the *call wall* and *put wall*) are where those flows are concentrated. This strategy reads the regime each morning from QQQ options open interest and trades only the break of the wall the regime leans toward: up through the call wall when gamma is positive, down through the put wall when it is negative.

Rules. All times are Central (CT). The strategy trades the front-month Nasdaq-100 E-mini future (NQ) during the regular session.

(i) Each morning: QQQ options open interest (expiries up to 45 days) into dealer gamma by strike, converted to NQ with the NQ to QQQ ratio.

(ii) Net gamma positive: buy the first 5-minute close above the call wall. Net gamma negative: sell the first 5-minute close below the put wall.

(iii) Signal bars closing 8:45 to 14:00 CT; enter the next minute. One trade a day.

(iv) Stop 0.15% back across the wall (at most 100 points). Target 2R. Otherwise flat at 14:55 CT.

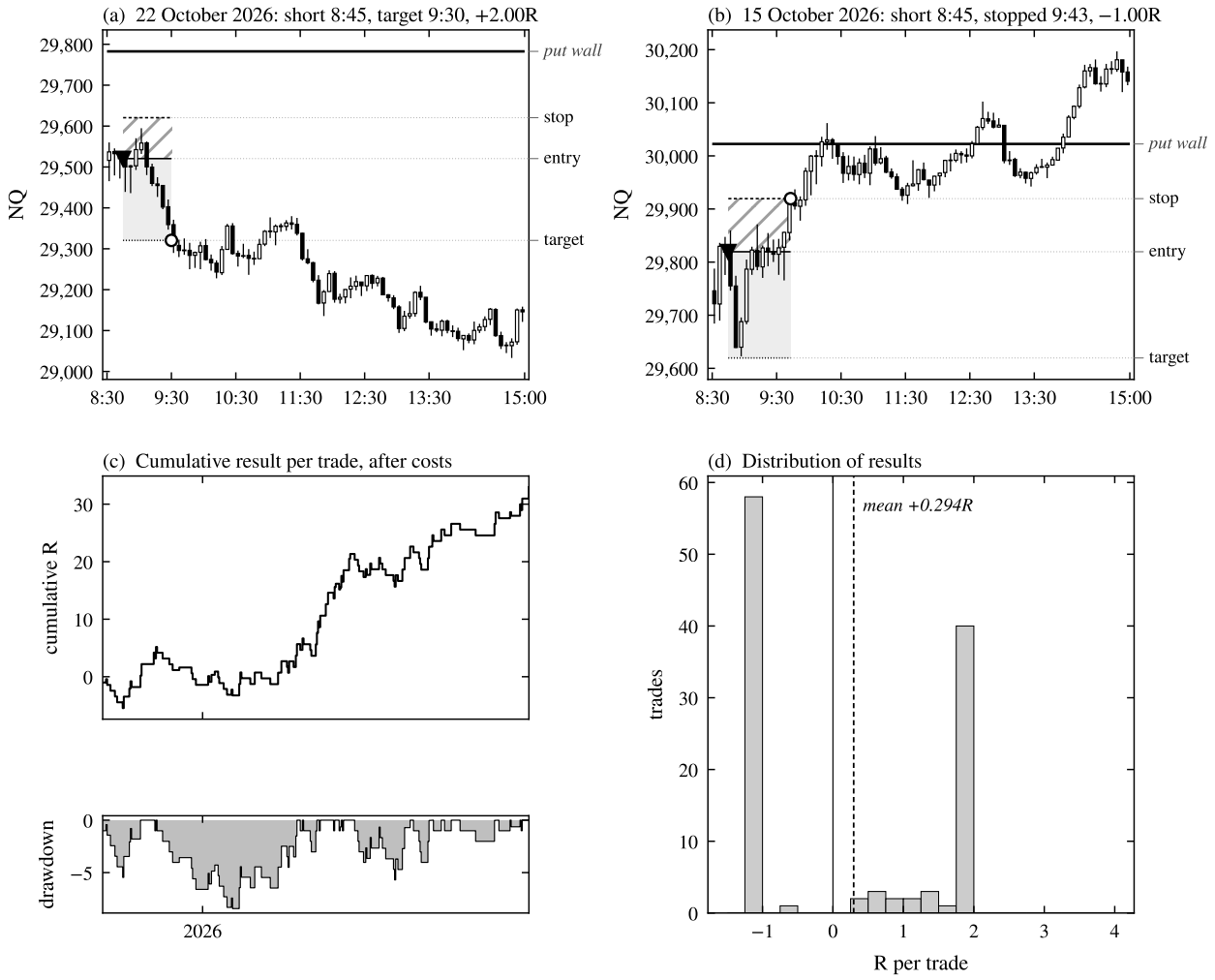


Figure 7. Gamma wall break. (a)–(b) Five-minute candles (hollow up, solid down) with the setup, entry, stop and target. (c) Cumulative result in R per trade, after costs, with drawdown below. (d) Distribution of R per trade; results above the top bin are placed in it.

A sample setup. Figure 7 shows two real sessions. On 22 October 2026 (panel a) the strategy went short at 8:45 at 29,520.50, with a stop at 29,620.50 (100.0 points of risk) and a target at 29,320.50. The trade reached the 2.0R target at 9:30 for +2.00R. On 15 October 2026 (panel b) the strategy went short at 8:45 at 29,819.50, with a stop at 29,919.50 (100.0 points of risk) and a target at 29,619.50. The trade was stopped out at 9:43 for −1.00R. In both panels the dashed lines mark the setup, named on the right edge; the triangle is the entry and the open circle the exit; the hatched block is the risk to the stop and the grey block the reward to the target or exit.

Statistics. Table 7 reports the record from 3 October 2025 to 22 October 2026. Trades end at the target, the stop, breakeven or the close in these shares: target 36%, stop 52%, close 12%. Long trades: 63, +16.2R; short trades: 49, +16.7R. The median trade is held 46 minutes.

Table 7. Gamma wall break: record after costs.

Trades	112
Trades per year	104
Win rate	47.3%
Average win	1.74R
Average loss	−1.00R
Expectancy per trade	0.294R
t-statistic of the mean	2.20
Profit factor	1.56
Total	+33.0R
Sharpe ratio (daily, annualised)	2.09
95% bootstrap interval	0.45 to 3.61
Maximum drawdown	−8.43R
Longest time between highs	89 sessions
Longest losing run	5 trades
Best / worst trade	+2.00R / −1.01R

Year	Trades	Win	Total R	PF
2025	24	38%	−1.4	0.91
2026*	88	50%	+34.4	1.78

*To 23 October 2026.

Validation.

Build period. Dec 26 2025 to Oct 23 2026: 89 trades, +33.0R, PF 1.85.

Unseen months, rules unchanged. Oct 3 to Dec 23 2025: 23 trades, −2.3R, PF 0.83. Not confirmed.

Caveat. About a year of options data is one market period; the 'with the regime' split was found after looking.

Weaknesses. The options data cover roughly one year, which is one market period. On the three months held out from the build (October to December 2025) the rules lost 2.3R over 23 trades. The rule to trade only with the regime was found after looking. It is the least proven strategy and is sized accordingly.

4.7 Value-area breakout

Idea. After the morning rotation, a half-hour close outside a multi-day value area means the market accepted a new price. Go with it. A *value area* is the price range that holds 70% of a period's volume: the range the market accepted as fair (Steidlmayer and Koy, 1986). When a half-hour candle closes outside a multi-day value area after the morning rotation, the market is testing whether a new price will be accepted. Auction theory says acceptance outside value tends to continue toward the next reference (Dalton et al., 2013). The strategy checks the 1, 2, 3 and 5-day value areas, takes the first clean cross of the day after 10:00 CT, and skips scheduled-event days, where acceptance is driven by the release rather than by the auction.

Rules. All times are Central (CT). The strategy trades the front-month Nasdaq-100 E-mini future (NQ) during the regular session.

(i) Value areas (70% of volume) of the prior 1, 2, 3 and 5 sessions.

(ii) A 30-minute candle closing at 10:00 CT or later closes above value (long) or below it (short), with the previous 30-minute close inside. First cross of each area counts; first signal of the day wins.

(iii) The 8:30 open is inside yesterday's high-low range. No trade on FOMC, CPI, PPI or NFP days.

(iv) Enter the next minute. Stop 0.2 ATR back inside the broken edge. Target 1.5R. Stop to breakeven after +1R. Flat at 14:55 CT.

A sample setup. Figure 8 shows two real sessions. On 9 April 2025 (panel a) the strategy went long at 12:30 at 18,399.50, with a stop at 17,827.73 (571.8 points of risk) and a target at 19,257.15. The trade reached the 1.5R target at 14:31 for +1.50R. On 1 October 2026 (panel b) the strategy went short at 11:00 at 30,612.25,

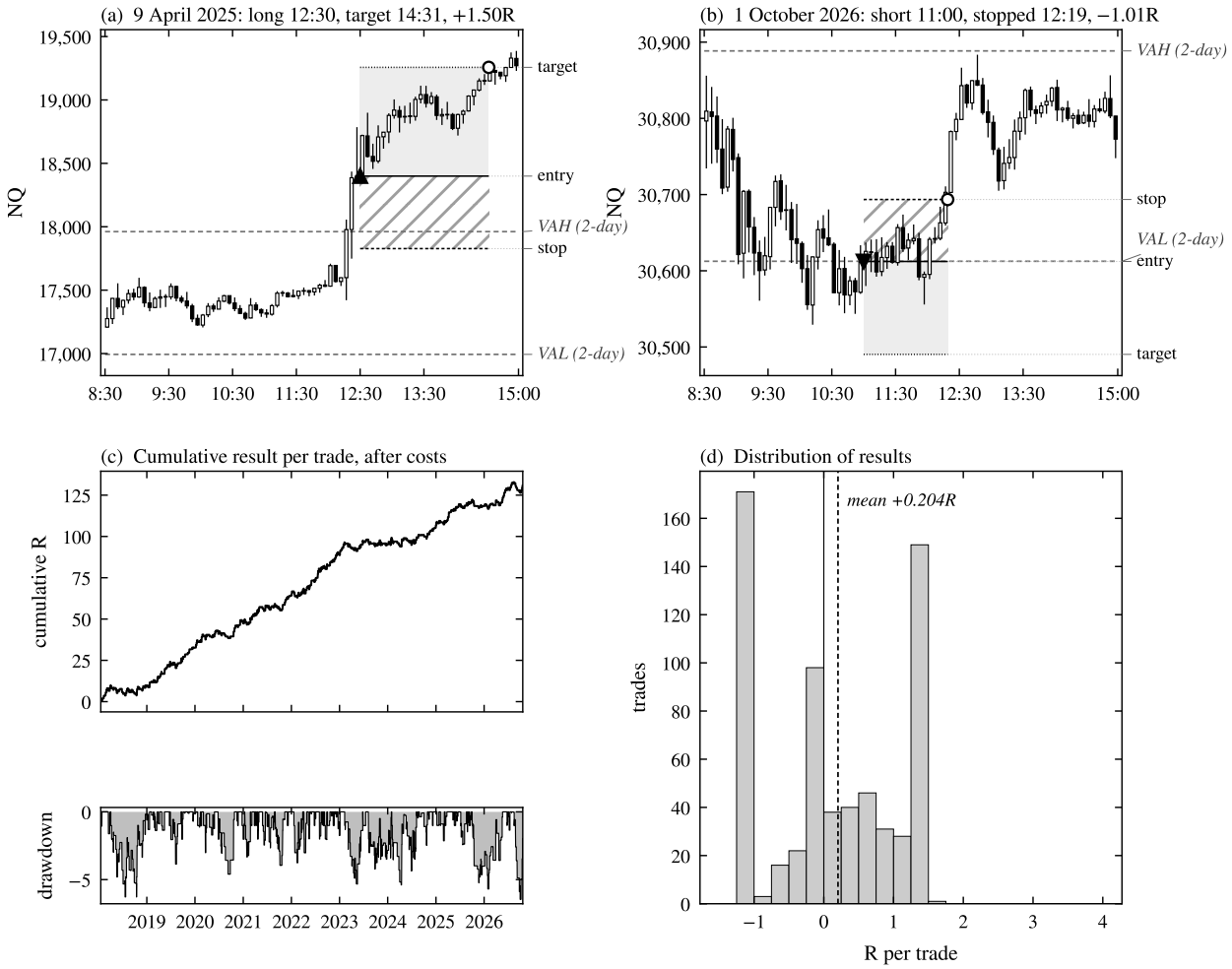


Figure 8. Value-area breakout. (a)–(b) Five-minute candles (hollow up, solid down) with the setup, entry, stop and target. (c) Cumulative result in R per trade, after costs, with drawdown below. (d) Distribution of R per trade; results above the top bin are placed in it.

with a stop at 30,693.54 (81.3 points of risk) and a target at 30,490.31. The trade was stopped out at 12:19 for −1.01R. In both panels the dashed lines mark the setup, named on the right edge; the triangle is the entry and the open circle the exit; the hatched block is the risk to the stop and the grey block the reward to the target or exit.

Statistics. Table 8 reports the record from 17 January 2018 to 21 October 2026. Trades end at the target, the stop, breakeven or the close in these shares: target 23%, stop 27%, breakeven 9%, close 42%. Long trades: 358, +66.5R; short trades: 285, +64.4R. The median trade is held 145 minutes.

Table 8. Value-area breakout: record after costs.

Trades	643
Trades per year	72
Win rate	51.8%
Average win	0.99R
Average loss	−0.64R
Expectancy per trade	0.204R
t-statistic of the mean	5.45
Profit factor	1.66
Total	+130.9R
Sharpe ratio (daily, annualised)	1.79
95% bootstrap interval	1.16 to 2.32
Maximum drawdown	−6.46R
Longest time between highs	208 sessions
Longest losing run	8 trades
Best / worst trade	+1.50R / −1.03R

Year	Trades	Win	Total R	PF
2018	79	44%	+9.4	1.37
2019	62	58%	+23.3	2.43
2020	58	50%	+14.6	1.72
2021	81	56%	+16.9	1.72
2022	83	57%	+24.5	1.98
2023	74	47%	+6.6	1.24
2024	79	46%	+11.5	1.48
2025	73	55%	+11.6	1.57
2026*	54	56%	+12.5	1.75

*To 23 October 2026.

Validation.

Blind test (27 locked months, opened once). NQ locked months: 111 trades, +15.0R, PF 1.37; ES Jan 2022 to Oct 2026: +23.8R, PF 1.23.

S&P 500, never used to choose. 383 trades, +48.9R, PF 1.37, every year 2022 to 2026 up.

Post hoc part. Two later changes (skip event days, drop the move filter) came after the blind test, with approval.

Weaknesses. The two most recent rule changes (skipping event days and removing a move filter) came after the blind test. The results on the locked months were weaker than on the development months: 111 trades and +15.0R, a profit factor of 1.37.

5 Validation and overfitting

Why backtests flatter. A backtest is a measurement taken after the fact, and every choice made while looking at it (which rule, which threshold, which filter) is a chance to fit noise. If a researcher tries N independent strategy variants that all have zero true edge, the best of them will still show a positive Sharpe ratio. Bailey and López de Prado (2014) give its expected size:

$$\mathbb{E}\Big[\max_n \widehat{SR}_n\Big] \approx \sqrt{V}\left[(1-\gamma)\,\Phi^{-1}\Big(1-\tfrac{1}{N}\Big) + \gamma\,\Phi^{-1}\Big(1-\tfrac{1}{Ne}\Big)\right], \tag{3}$$

where V is the variance of the Sharpe ratios across the trials, $\gamma \approx 0.5772$ is the Euler–Mascheroni constant and Φ the normal distribution function. With a hundred trials the best of a set of worthless strategies is expected to sit about 2.5 standard deviations above zero; with a few thousand, more than 3.5. A backtest Sharpe ratio therefore means little until it is compared with that bar, and the bar rises with every idea tried. This is the multiple-testing problem of Harvey et al. (2016) applied to trading rules, and it is why Section 8 lists the ideas that failed: they are part of N.

The deflated Sharpe ratio. The deflated Sharpe ratio is the probability that the true Sharpe ratio exceeds the bar SR_0 above, allowing for the sample length T and the skewness $\hat{\gamma}_3$ and kurtosis $\hat{\gamma}_4$ of the returns:

$$\mathrm{DSR} = \Phi\left(\frac{(\widehat{SR} - SR_0)\sqrt{T-1}}{\sqrt{1 - \hat{\gamma}_3\,\widehat{SR} + \frac{\hat{\gamma}_4 - 1}{4}\,\widehat{SR}^{\,2}}}\right). \tag{4}$$

The true number of ideas tried is uncertain, because many were considered informally before any test was run; each strategy therefore reports the deflated Sharpe ratio at 100 and at 3,000 trials, the second a deliberately generous count.

The probability of backtest overfitting. Bailey et al. (2017) split the sample into S blocks and, for every way of choosing half of them as the training set, ask whether the variant that ranked best in training ranks above the median on the other half. The share of splits where it does not is the probability of backtest overfitting (PBO). A PBO near 50% means that choosing the best variant in-sample tells you nothing about its rank out of sample.

The protocol. The strategies were built under the same set of rules; not every strategy could use every check, and Table 9 shows which ones each received:

1. *Write the rules first.* Each strategy's rules, parameters and the test that would decide it were written down before its first backtest. Changes made after seeing results are labelled as post hoc in the strategy's section.
2. *Hold data back.* Part of the NQ sample (2018 to 2020 or 2018 to 2021, depending on the strategy) was not used while the rules were built.
3. *Use a second market.* The S&P 500 future (ES) trades the same session with a different index; it was never used to choose a setting, so a rule that works on both is less likely to be a fit to NQ's history.
4. *Lock a box.* Where a lockbox was used, randomly chosen sessions or months were sealed before the research and opened once, after the rules were final. A strategy cannot be re-tuned after its lockbox is opened.
5. *Cross-validate by year.* Where the data allow, the rules are re-chosen on all years but one and tested on the year left out, for every year in turn.
6. *Trade it forward.* Since 23 October 2026 the rules have been frozen and every session is recorded as it happens (Section 7).

Table 9 collects the result of each check for each strategy, including the ones it failed.

Checks computed for this paper. Table 10 adds five checks computed directly from the trade records, none of which played a part in building the rules. *Years up* counts calendar years with a positive total. The *halves* compare the profit factor of the first and second half of each strategy's trades; a strategy fitted to one period tends to fade in the other. *Without the best five* removes the five largest winners, to show how much of the total rests on a few days. The *slippage* columns charge one and two more ticks per side than the backtest already does, on every trade, measured in that trade's own R (Figure 9). The last column is the share of 2,000 stationary-bootstrap resamples in which the annualised Sharpe ratio is zero or below.

What the evidence says. Three strategies pass every check they were given: the opening range breakout, the open drive and the value-area breakout. All three stay profitable with two extra ticks of slippage per side and without their five best trades. The initial-balance breakout and the VWAP strategy pass their out-of-sample tests, but each was chosen from many variants on the same data, which the deflated Sharpe ratios show. One-timeframing has the weakest statistics: its deflated Sharpe ratio is 18% at 100 trials, and its total falls to +43.5R without its five best trades. The gamma wall break failed the only unseen period it had. The most cost-sensitive strategy is one-timeframing, whose total falls from +118.0R to +103.5R with two extra ticks, because its stops are the tightest. Two results hold for all seven: every strategy has a profit factor above 1 in both halves of its sample, and every one stays profitable with two extra ticks of slippage per side, losing at most 12% of its total. In short, the evidence supports the first three strongly, the initial-balance breakout and VWAP strategy moderately, and one-timeframing and the gamma wall break only weakly.

Table 9. Out-of-sample checks by strategy. DSR: deflated Sharpe ratio at 100 / 3,000 trials. A dash means the check was not run.

Strategy	Held-out NQ	S&P 500 (ES)	Lockbox	Cross-val.	DSR	Post hoc
Opening range breakout	2018–21 held out: PF 1.61 (2022–26: 1.93)[a]	–	–	–	99.9% / 97%	second-chance rule G
Open drive	2018–20: every year up[b]	198 tr, +91.6R, PF 1.70	–	–	99% / 78%	–
Initial-balance breakout	2018–20: +24.2R, PF 1.58	+72.0R, PF 1.45, 7 of 9 yr up	–	6 of 6 folds up, +61.5R	92% / 61%	found by screening
One-timeframing	–	positive; −1.0R without best 3	–	–	18% / 1%	yesterday-direction rule
VWAP and order flow	–	–	17 tr, +4.3R, PF 1.38	–	57% / 10%[c]	PBO 55%
Gamma wall break	Oct–Dec 2025: 23 tr, −2.3R, PF 0.83	–	–	–	–	regime split
Value-area breakout	–	383 tr, +48.9R, PF 1.37	111 tr, +15.0R, PF 1.37	–	–	event-day skip, move filter

[a] First-signal version, before commission. [b] Part of 231 trades, +162.5R, without the order-flow filter. [c] 57% at 100 trials, 19% at 1,000, 10% at 3,000.

Table 10. Robustness checks computed from the trade records. PF: profit factor. Slippage columns charge extra ticks per side on every trade.

Strategy	Years up	PF by half first	PF by half second	Without best five	Total R, extra slippage +1 tick	Total R, extra slippage +2 ticks	P(Sharpe ≤ 0)
Opening range breakout	9/9	1.53	1.93	+161.3	+168.8	+161.3	0.000
Open drive	9/9	2.30	2.33	+115.4	+159.6	+154.9	0.000
Initial-balance breakout	9/9	1.75	1.49	+65.2	+78.4	+74.5	0.000
One-timeframing	8/9	2.18	2.24	+43.5	+110.7	+103.5	0.001
VWAP and order flow	3/4	2.76	1.89	+22.6	+52.6	+51.7	0.002
Gamma wall break	1/2	1.24	1.95	+23.0	+32.2	+31.3	0.009
Value-area breakout	9/9	1.77	1.55	+123.4	+124.9	+118.9	0.000

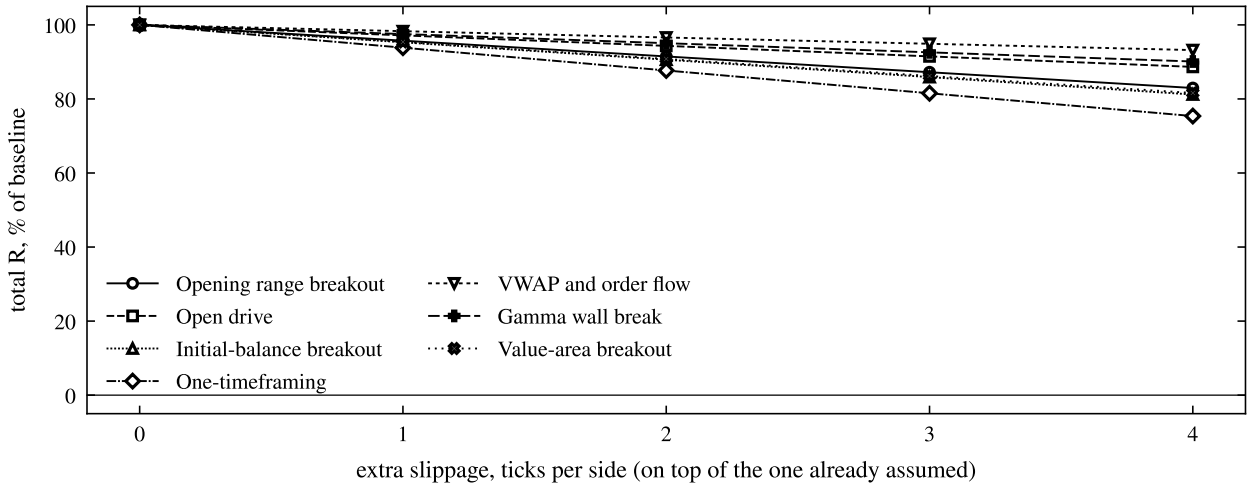


Figure 9. Sensitivity to worse fills: total R as a share of the baseline when every fill costs extra ticks on top of the one already assumed.

6 The seven together

Risking the same amount on every trade of every strategy, the combined record has 2,310 trades, +758.2R, a profit factor of 1.84 and a Sharpe ratio of 2.49 (interval 2.06 to 2.94); the deepest drawdown was −16.7R and 9 of 9 calendar years were positive, as were 81 of 106 months. The worst single day lost −4.02R and the best made +31.6R. The combination is much smoother than any one strategy (Figure 10) because the strategies rarely lose on the same day: the correlations of daily R in Table 12 are between 0.00 and 0.26. The highest are among the three Market Profile strategies, which can trigger on the same drive day.

Table 11. Total R by calendar year and strategy, after costs. A dash means the strategy had no data that year (VWAP needs order flow from October 2023; the wall break needs options data from October 2025).

Year	ORB	Open drive	IB break	One-tf.	VWAP	Wall	Value area	All
2018	+36.8	+20.3	+12.6	+14.7	–	–	+9.4	+93.8
2019	+7.4	+1.4	+1.6	+6.6	–	–	+23.3	+40.4
2020	+8.0	+13.4	+9.0	+3.3	–	–	+14.6	+48.4
2021	+10.5	+41.0	+14.1	+3.9	–	–	+16.9	+86.4
2022	+35.1	+19.1	+16.1	+21.7	–	–	+24.5	+116.5
2023	+19.7	+13.6	+5.5	+4.5	−1.2	–	+6.6	+48.7
2024	+25.5	+33.0	+12.0	+28.0	+5.4	–	+11.5	+115.3
2025	+15.3	+16.6	+3.9	−1.0	+40.5	−1.4	+11.6	+85.5
2026*	+18.0	+5.8	+7.4	+36.3	+8.8	+34.4	+12.5	+123.2

*To 23 October 2026.

Table 12. Correlation of daily R between strategies, all sessions (a strategy that did not trade contributes zero).

	ORB	Open drive	IB break	One-tf.	VWAP	Wall	Value area
ORB	1						
Open drive	.26	1					
IB break	.25	.23	1				
One-tf.	.13	.13	.08	1			
VWAP	.12	.18	.09	.11	1		
Wall	.08	.04	.07	.06	.05	1	
Value area	.11	.01	.09	.02	.00	.01	1

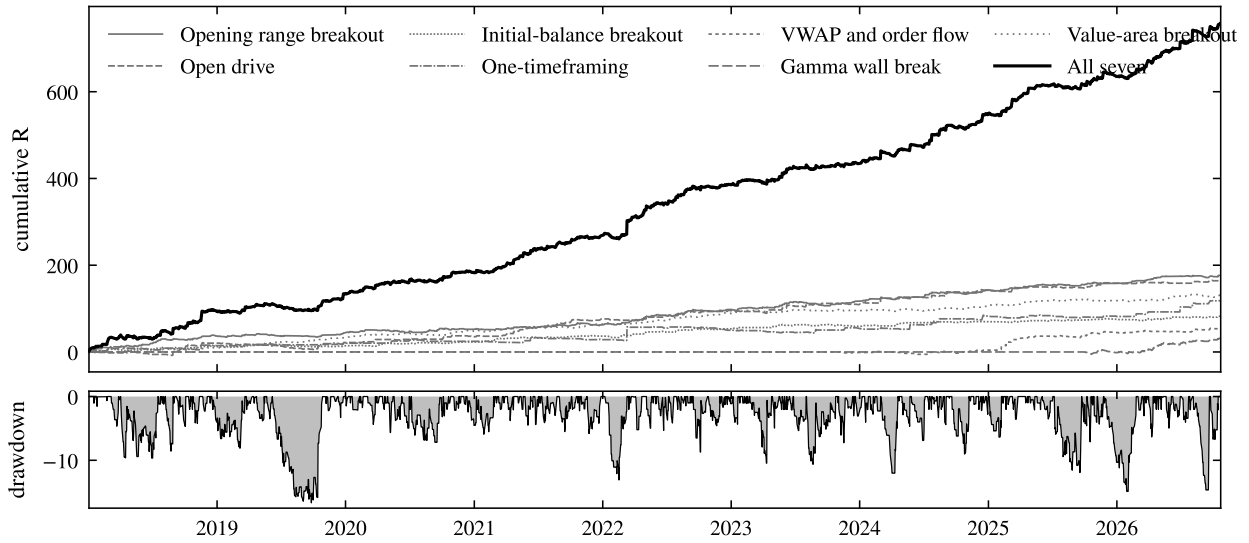


Figure 10. Cumulative R of each strategy (grey) and of all seven together (black), after costs, with the drawdown of the combination below.

7 The forward record

On 23 October 2026 the rules were frozen. Every session since has been checked after the close on Databento one-minute data, with the same code that produced the backtest. Through 20 November 2026 the seven strategies took 33 trades, 19 of them winners, for +14.14R (Figure 11, Table 13). Four weeks are far too few to confirm or reject anything; the record is reported so that it can be extended rather than chosen later.

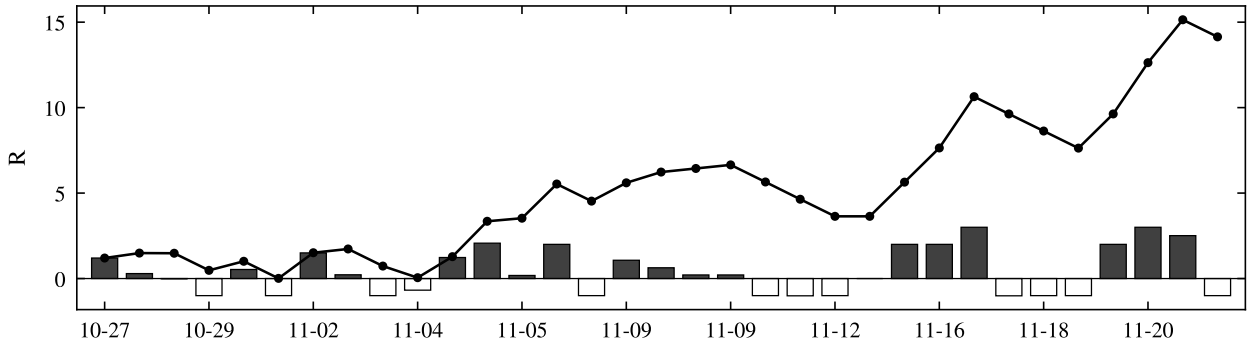


Figure 11. Trades since the rules were frozen: R per trade (bars, solid for winners) and the running total (line).

Table 13. Every trade since the rules were frozen on 23 October 2026, checked after each close on Databento one-minute data.

Date	Strategy	R	Cumulative R
27 October 2026	Initial-balance breakout	+1.20	+1.20
27 October 2026	Value-area breakout	+0.29	+1.49
28 October 2026	Opening range breakout	−0.01	+1.48
29 October 2026	Gamma wall break	−1.00	+0.48
30 October 2026	Opening range breakout	+0.53	+1.01

Date	Strategy	R	Cumulative R
30 October 2026	Gamma wall break	−1.00	+0.01
2 November 2026	Value-area breakout	+1.50	+1.51
3 November 2026	Value-area breakout	+0.22	+1.73
4 November 2026	Open drive	−1.00	+0.73
4 November 2026	Value-area breakout	−0.68	+0.05
5 November 2026	Opening range breakout	+1.23	+1.28
5 November 2026	Open drive	+2.07	+3.35
5 November 2026	Initial-balance breakout	+0.18	+3.53
5 November 2026	Gamma wall break	+2.00	+5.53
6 November 2026	Gamma wall break	−1.00	+4.53
9 November 2026	Open drive	+1.07	+5.60
9 November 2026	Initial-balance breakout	+0.63	+6.23
9 November 2026	One-timeframing	+0.21	+6.44
9 November 2026	Value-area breakout	+0.21	+6.65
10 November 2026	Initial-balance breakout	−1.00	+5.65
10 November 2026	Gamma wall break	−1.01	+4.64
12 November 2026	One-timeframing	−1.00	+3.64
13 November 2026	Opening range breakout	+0.00	+3.64
13 November 2026	Gamma wall break	+2.00	+5.64
16 November 2026	Gamma wall break	+2.00	+7.64
17 November 2026	Opening range breakout	+3.00	+10.64
17 November 2026	Gamma wall break	−1.01	+9.63
18 November 2026	Opening range breakout	−1.00	+8.63
18 November 2026	Value-area breakout	−1.00	+7.63
19 November 2026	Gamma wall break	+2.00	+9.63
20 November 2026	Opening range breakout	+3.00	+12.63
20 November 2026	Initial-balance breakout	+2.51	+15.14
20 November 2026	Gamma wall break	−1.00	+14.14

8 What did not work

The seven strategies are what remained of a larger search. Table 14 lists the ideas that were tested and dropped, with the result that ended each. Most failed in the same way: they looked good on the months used to build them and lost on the months held back. The list is given in full because the number of rejected ideas is part of the evidence: it is the denominator behind the deflated Sharpe ratios above.

Table 14. Ideas that were tested and dropped. Each was set out before its test; none is in the live set.

Area	What was tested	Result
Order flow at levels	Absorption, trapped traders and Trader Dale's absorption and delta setups at volume-profile levels	Chosen on development months, lost out of sample: −8.5R to −16.9R
Order flow on longer bars	Delta divergence, absorption and delta breakouts on 5, 15, 30 and 60-minute bars	Failed out of sample on every timeframe

Area	What was tested	Result
VWAP v3	864 re-tunes of the VWAP algo	Held-out re-tuning +47.0R against v2's +56.7R: the gain was selection
Chop prediction	Eleven ways to spot a choppy day at 9:00 CT	None separated follow-through days in all three blocks
Order-book algo	Hidden-volume, refill and pulled-order rules from the full CME order book	Every September winner lost in October: −19.8R to −37.2R
Smart-money concepts	Fair value gaps, inverse gaps and order blocks, with confirmations	All failed out of sample; fair value gaps −83R
Supertrend	Supertrend as a standalone system	Build +11,520 points, test −1,911 points
Book imbalance	Best bid and ask size balance from 984 sessions of quotes	60-minute version −1,023 points; as a filter it halved R
Futures open interest	Daily NQ open interest as a signal or filter	No edge
Options levels	Fading walls, pins, max pain, OI change, OPEX calendar	Walls hold no better than other strikes; fading them loses
Opening momentum	Pre-registered study: does the first half hour's order flow predict the close?	No first-half-hour momentum in NQ 2017 to 2026 or ES
S&P gamma regime	SPX dealer gamma as a regime switch for NQ and ES strategies	Predicts range, but no strategy improves in its regime
Mechanism-first mean reversion	Eight hypotheses on why intraday reversals should happen	Six rejected, liquidity-provision model rejected
Mean-reversion literature	Drift-burst fade, FOMC fades, failed prior-day extremes, failed IB breaks, closing imbalance	None adopted; failed IB break −89.6R
Two-sided IB day (R2)	Fade the second side of the initial balance	Open months +47.3R; lockbox 91 trades −5.0R. Dropped
Reversal exploration	13 rule and exit pairs from liquidity, levels, indicators and order flow	All 13 failed on 44 unseen months
Volume profile	320 trials across two rounds of volume-profile algos	None passed
Mega-cap earnings	Six specifications around Nasdaq-100 mega-cap earnings	None passed
GEX video ideas	Wall fades, 0DTE walls, approach speed	Rejected
Failed-auction reversal	Fade probes outside value that fail back inside	Locked months −11.1R and −11.8R. Scrapped
Overnight sessions	All live models ported to the Asia and London sessions	Nothing clearly beyond chance: best t about 2 out of 28 rows
5-minute scalps	RSI ensembles and VWAP band fades, 1,440 variants	All lose after costs
Market Profile playbook	Each setup only in the open types where it made money	NQ +646R out of fold, but S&P 500 −52R
NQ and ES spread	Ornstein-Uhlenbeck spread model	A consistent edge of only a few basis points a trade. Parked

9 Limitations

1. *Simulated fills.* Fills are simulated on one-minute bars. One tick of slippage is realistic for NQ in normal conditions but optimistic on fast days, which are the days these strategies make most of their money.
2. *Short samples for two strategies.* The VWAP strategy has three years of order-flow data and the gamma wall break about one year of options data. Neither record is long enough to separate skill from a favourable market.
3. *Researcher degrees of freedom.* Every strategy reports which parts of its rules were chosen after seeing data. The deflated Sharpe ratios correct for the trials that were recorded; they cannot correct for ideas that were considered and never formally tested.
4. *One market.* All seven are tested on NQ, with ES as the only second market. The NQ sample 2018 to 2026 was dominated by a long bull market with three sharp declines; a different regime may treat trend strategies differently.
5. *Execution and capacity.* Results assume a fixed risk per trade and do not model position limits, margin, or the market impact of larger size.

10 Conclusion

Seven intraday trend strategies on the Nasdaq-100 future, each built from a stated mechanism and each tested on data that played no part in choosing its rules, produced +758.2R over nearly nine years after costs, with low correlation between them. The out-of-sample evidence is strongest for the opening range breakout, the open drive and the value-area breakout; it is weak for one-timeframing and the gamma wall break, and short for the VWAP strategy. The forward record since 23 October 2026 is the test that will matter most, and it is reported here from its first trade.

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