



SIGMA QUANT RESEARCH

QIN / QPL Research: Confirmation Layer, Residual Formula and Ticket Design

Overlap with Win/Place, residual pair support and a practical role

Study window: 15 Apr 2026 - 13 Jun 2026

180 races · 2,229 runners · 13,086 unique pairs · ~1.67M ticks

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Abstract

Quinella (QIN) and Quartet Place-style QPL markets mostly restate the Win/Place consensus from another angle. Aggregated pair support ranks identify nearly the same core horses as Win/Place favourites. Pair market rank helps narrow tickets. Raw steam looks powerful, yet after rank controls, residualisation and date-blocked validation the independent lift fades. The sober role today is confirmation and ticket construction-not a second horse-level alpha engine.

One line: use Q/QP to confirm and narrow tickets-do not treat steam as a second must-bet system.

13,086 Unique pairs	1.67M Tick rows	~12-16% QIN rank1 exact	Not robust Independent alpha
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1. Four kinds of “useful” are not the same

Layer	Real question	Current answer
Direction	Does steam align with better results?	Yes, especially final 2 minutes
Incremental forecast	Lift after Win/Place controls?	No robust evidence
Pair ranking	Can pair rank narrow tickets?	Yes
Betting edge	Profit after dividends/takeout?	Not shown

Hit rate != edge. A 40% both-top-3 class at average odds of 2.0 still loses if break-even needs 50%. Without dividends, ROI talk is empty.

2. Data reality: 1.67M ticks != 1.67M independent draws

Fourteen runners create 91 unordered pairs. If horse 3 wins, every pair containing 3 “contains the winner” at once. The informative unit is closer to race/horse/pair than to each tick. Early T-30 snapshots are often stale; one-minute gaps can confuse feed delay with market move.

- Official outcomes: QIN exact = unordered first two; QPL exact = both in the first three.
- Cleaning drops non-positive odds so ranks and shares stay valid.
- Validation uses date blocking; within-race dependence needs clustered thinking.

3. Four markets name the same core horses

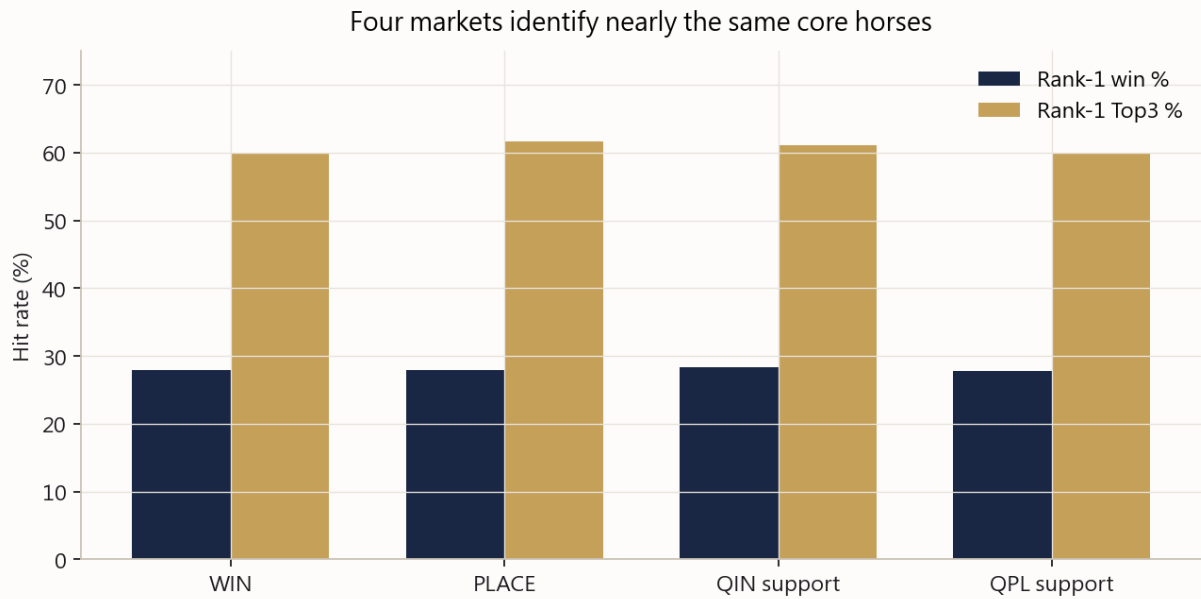


Figure 1 | Rank-1 support performance is nearly identical across Win/Place/QIN/QPL.

QIN/QPL support rank is useful precisely because it overlaps Win/Place. Extra information, if any, is more likely in breadth, persistence, concentration and deviation from Win/Place-implied pair heat.

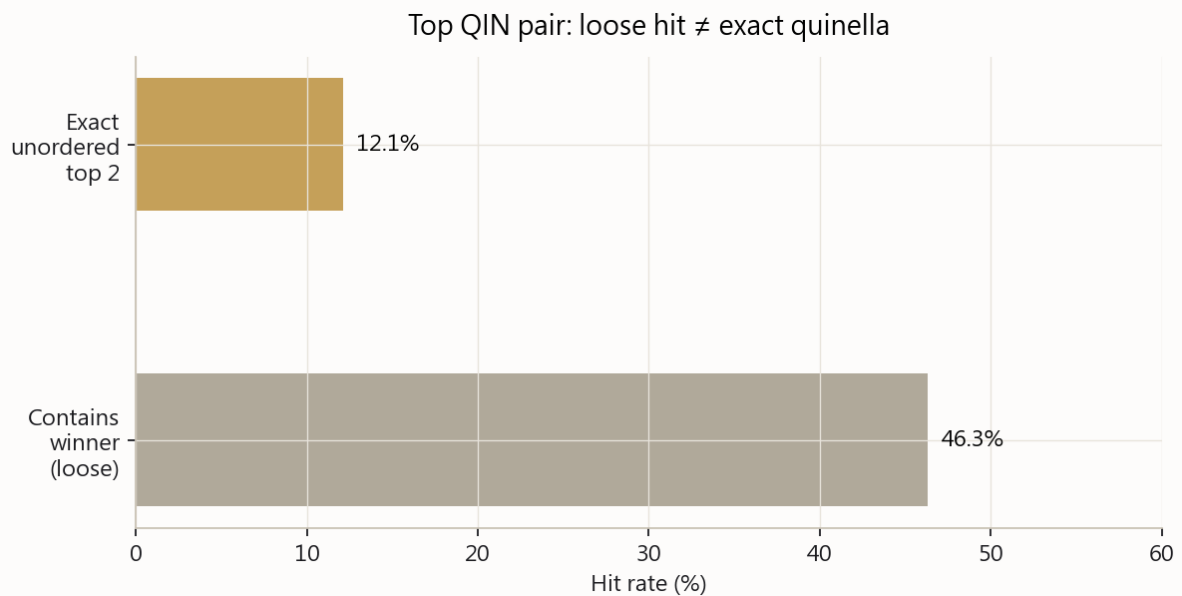


Figure 2 | Top QIN pair “contains winner” ~46.3%, but exact unordered top two is only ~12.1%.



4. Pair rank helps; pair drift adds little

At pair level, market rank already compresses most judgement. Adding pair drift slightly worsens or flatlines average AUC for exact targets. Practically: narrow with pair rank first, then use movement as confirmation-do not scan every steaming pair first.

Gate	Window	Exact hit	Reading
QIN rank 1	T-5→2	15.7%	Ranker, not a lock
QIN rank 1	T-2→Close	13.1%	Still modest
QPL rank 1	T-2→Close	25.4%	Easier, still needs price
QPL rank 3	T-2→Close	21.0%	Falls as the net widens

5. Timing: longer early path + final two minutes

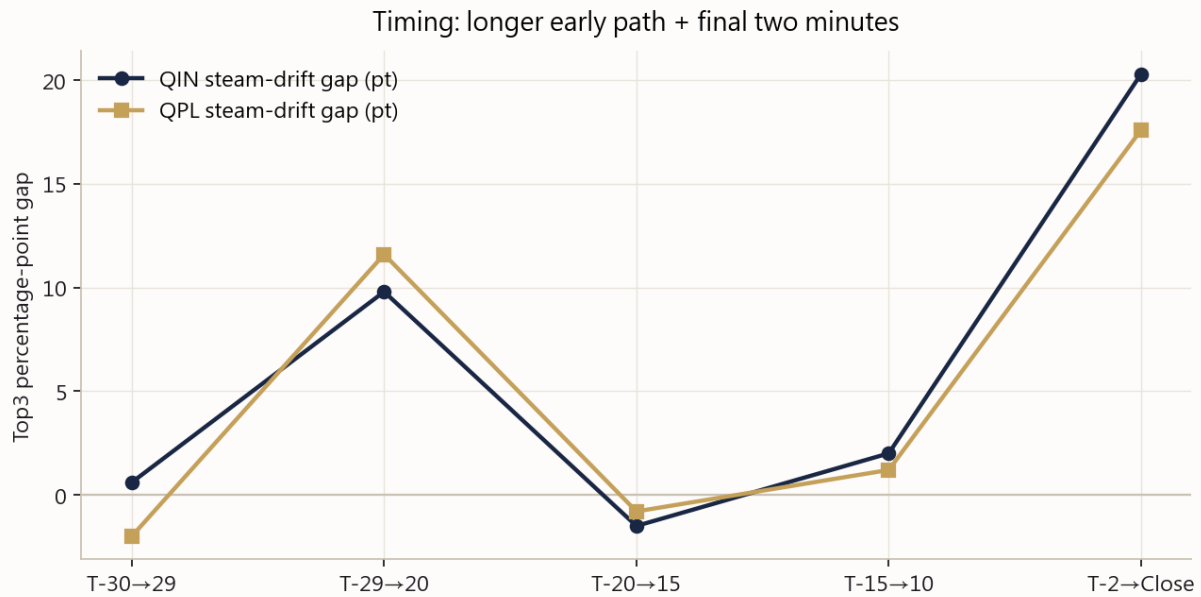


Figure 3 | Steam-versus-drift top-3 gaps: T-2→Close is clearest.

- T-30→T-29: near noise; snapshots may be stale.
- T-29→T-20: usable early confirmation window.
- Mid windows often fade or flip-check reversals.
- T-2→Close: cleanest late confirmation (~+20.3pt QIN, ~+17.6pt QPL).

Raw steam groups crush drift groups on top-3 rate, but they also start with better ranks. Directional truth is not independent information. Cross-market: agreement upgrades confidence; Q/QP-only support is an exotic candidate, not an automatic Win upgrade.

6. Residual formula: pair support beyond horse heat

Residual pair support: beyond raw steam

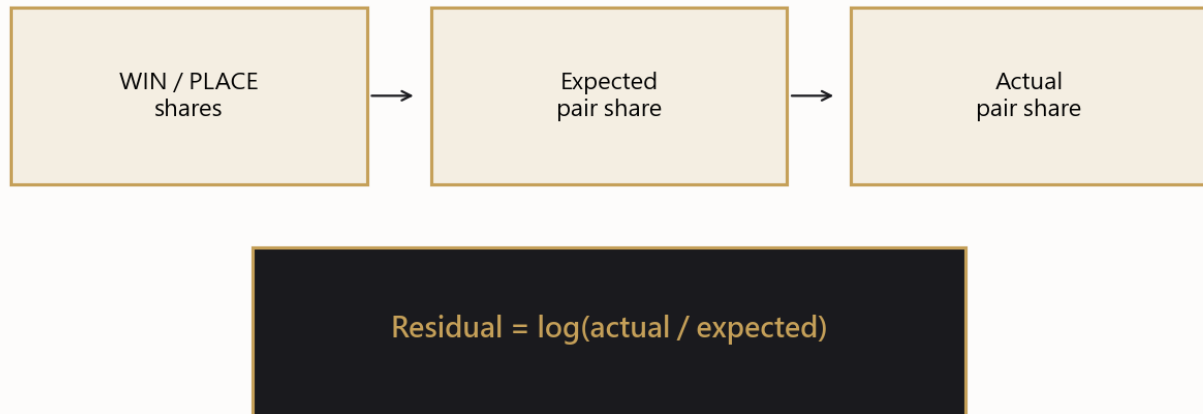


Figure 4 | Residual = $\log(\text{actual pair share} / \text{expected pair share})$.

Computation

- Horse share: $\text{WINShare}_i = (1/\text{odds}_i) / \sum (1/\text{odds}_k)$; QPL uses place odds.
- Actual pair share: normalise inverse pair odds across all pairs in the race.
- Expected raw support: QIN uses $\text{WINShare}_i \times \text{WINShare}_j$; QPL uses place shares; then renormalise.
- Residual = $\log(\text{Actual}/\text{Expected})$. Positive means more support than horse heat implies.

Raw steam asks “did this pair get hotter?” Residual steam asks “after both horses got hotter, did the pair still get extra heat?” They can disagree: pair odds may shorten while residual falls if Win shares rose even faster.

Residuals often cluster in weak, low-expected pairs: large relative surprises with tiny absolute strength. Residual is not a native bullish score-always read it with pair rank, absolute share and partner quality.

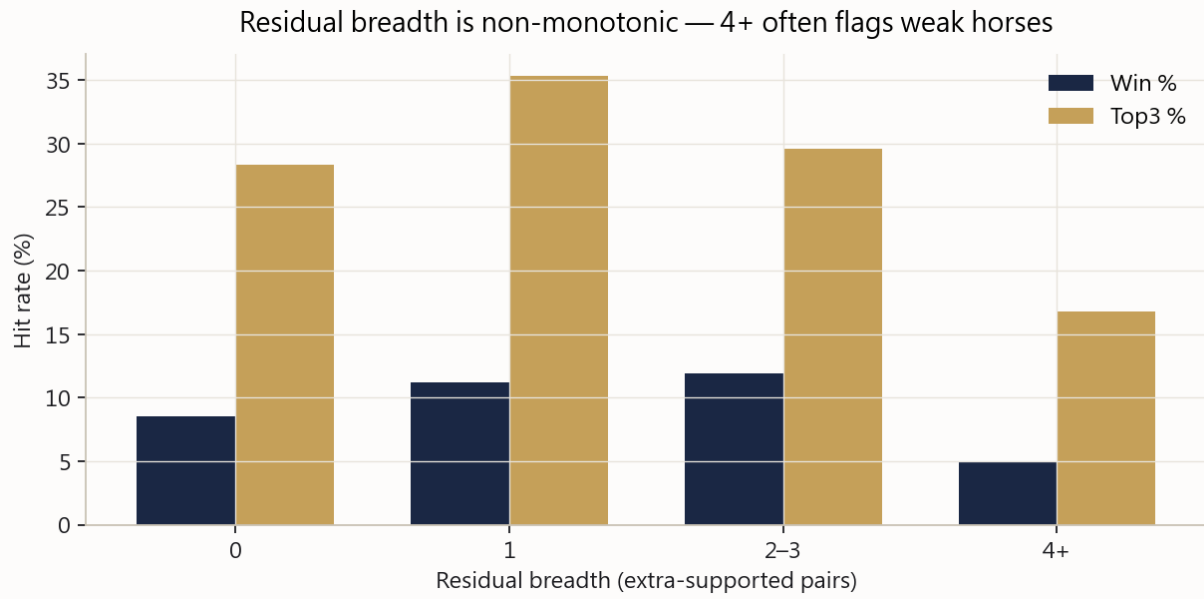


Figure 5 | Residual breadth is non-monotonic: 4+ extra-supported pairs often mark weaker horses.

7. Incremental tests and practical placement

Date-blocked runner-level tests show average top-3/top-4 AUC slightly worse after adding QIN/QPL, with Brier essentially flat. A few matched residual windows look locally positive, but most fade under multiplicity control-keep them as pre-registered next-season hypotheses, not live rules.

Suggested workflow

- Build the horse baseline from Win/Place level and model probability.
- Narrow Q/QP tickets with pair market rank.
- Use late confirmation and cross-market agreement to upgrade confidence; use joint drift as a downgrade.
- Use residual to judge pair-specific support-not as a hard bet switch.
- High breadth, low concentration, strong partners $\approx$ anchor consensus; one extreme pair $\approx$ idiosyncratic flow.

Q/QP is not a mysterious second market. It describes pool structure and pair preference well. Under strict incremental tests it has not reliably rewritten horse ranking. Placing it in confirmation and ticket engineering is the honest-and useful-use.



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