Field Size and Per-Race Wagering Determinants

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Global Symposium on Racing & Gaming
December 9, 2014
Average & Median Wager per Field Size

Woodbine 2014
Econometric Analysis

- Woodbine 2012, $454m total wager on 1,515 races

- Multivariate Regression – empirically verify which variables are/not statistically meaningful to per-race wagering and isolate the true magnitude of these relationships.

- Mathematically control for intertwined relationships. Model results are “all else held constant” (aka, ceteris paribus).

- Basic Model:
  \[
  \text{Per-Race Handle} = f(\text{Field Size, Race Quality, Surface, Race Conditions, Raceorder, Special Events, Market Timing, Market Distribution})
  \]

- Data complications include Serial Correlation and “Stacked” Correlation Effects
Handle Increases at a Diminishing Rate as Field Size Increases
Average Wager per Field Size w/ Linear Trendline
Woodbine 2014
Diminishing Marginal Value of the Next Horse

![Bar chart showing increasing handle for next betting interest from 4th to 14th place.](chart.png)
Diminishing Marginal Value of the Next Horse

![Bar chart showing diminishing marginal value of the next horse betting interest.](chart_image.png)
Diminishing Marginal Value of the Next Horse

Adding a 9th horse to a field of 8 yields 8.9% handle win.

Adding a 9th and 10th horse to a field of 8 yields (8.9% + 7.7%) 16.6% gain.
Diminishing Marginal Value of the Next Horse

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Distribution of Races w/r/t Field Size
Woodbine 2014ytd

Average Field = 8.4
Distribution of Races w/r/t Field Size
Woodbine 2014

Below Average Fields
= Handle Forfeit
Distribution of Races w/r/t Field Size
Woodbine 2014

Above Average Fields
Handle Gain

% of All Races

Field Size

0%
5%
10%
15%
20%

4  5  6  7  8  9  10  11  12  13  14
Field Size

Woodbine
Distribution of Races w/r/t Field Size

Woodbine 2014

Diminishing Marginal Returns indicates a value-add opportunity.

If we smooth horse supply across all races so that every race is at the racemeet average (Woodbine = 8.4) then theoretical handle gains for same number of starters.
Race Competitiveness

- Overwhelming favourites drive down total wagering as that runner becomes a “key” in exotics.

- Although, the Show pool can increase – BridgeJumpers

- Various wagering studies have unsuccessfully attempted to model versions of a “Competitiveness Index”

- Overwhelming favourites increase as Field Size decreases. Econometric models consume this effect with the Field Size test.
But Field Size Isn’t Everything…

Our customers reward us for Quality racing

- Purse levels can proxy for Woodbine Overnight race conditions (purses unchanged for full year 2012)

- Each $10k move up the purse scale brings 2.6% handle growth, c.p.

- Combine 2.6% wagering elasticity of race quality with the Diminishing Returns to Field Size…
### Heat Mapping Quality vs Quantity

<table>
<thead>
<tr>
<th>Purse Value</th>
<th>Bet Interests</th>
<th>Avg Field = 8.4</th>
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<tbody>
<tr>
<td></td>
<td>3</td>
<td>4</td>
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<tr>
<td>$20,000</td>
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<td>Claiming $16k $25,000</td>
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<td>Claiming $25k $35,000</td>
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<td>Median Overnight $40,000</td>
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<td>Claiming $50k $45,000</td>
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<tr>
<td>$50,000</td>
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<tr>
<td>Maiden Allowance $55,000</td>
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<td>$60,000</td>
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<td>Open Allowance $75,000</td>
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<td>$80,000</td>
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<td>Overnight Stake $100,000</td>
<td>53</td>
<td>67</td>
</tr>
</tbody>
</table>
Additional Model Insights

- Races taken Off-the-Turf cost 10% in handle after controlling for change in field size.
- Restricted races cost 5.3%, c.p.
- The market rewards coordinated (punishes overlapping) posttimes with major simulcast competitors.
But we’re running low on horses...

- Less Racing? Not a traditional “go-to” solution.
- How to get more starts per horse?
  - Reduce the cost of losing?
- Restricted and Open programs don’t intersect, means fewer horses in more races.
  - Entice/Convert restricted runners into Open events.
  - Woodbine open race bonuses: 40% to Ontario-Sired, 20% to Ontario-Bred
- Can the tracks partner on horse supply?
- Elephants at the watering hole.