

Analytics Brief 2018-03

Modeling the Determinants of Handle: Standardbred Racing at Woodbine and Mohawk

Steven S. Vickner, PhD
Associate Professor

Steve Koch
Executive Director, Safety & Integrity Alliance, NTRA

October 29, 2018

Using data for 2,742 races over 241 race days from the 2009 Standardbred racing season at the Woodbine and Mohawk Racetracks, all sources single-leg handle (win, place, show, exacta, trifecta, superfecta) per race was modeled with explanatory variables controlling for field size, field quality and race conditions, and seasonality. A few robust and actionable insights persisted:

- Field size remains the leading determinant of handle per race. While there were slight diminishing returns per entry, it was not as pronounced as found in Thoroughbred racing.
- Race entries limited to Ontario-Sired eligible runners had a positive yet limited impact on handle. This finding departs from the related Thoroughbred wagering models where restricted race conditions harm handle outside of field size effects. Aside from purse enhancements, the Standardbred restricted races appeared quite similar to races not restricted to Ontario-Sired runners in terms of field size and handle per race.
- Handle had positive and slightly increasing returns to race quality. Control variables were also used in the model to account for major stakes races, which were positive as expected.
- Bettors preferred pacing races over trotting races.
- Not surprisingly, poor weather conditions adversely impacted handle.
- Races restricted to just fillies neither increased nor decreased per race handle.

Various econometric methods were tested and yielded a robust set of results. A multilevel mixed effects modeling approach was chosen to address, among other things, heterogeneity across race days and higher-order autocorrelation across races within each race day. Similar to Thoroughbred racing, this ‘wagering inertia’ indicated handle in nearby races (i.e., race two and race one, or race three and race two) was not surprisingly correlated but handle in more distant races was not. Over 60 percent of the variation in per race handle was explained by the model with highly statistically significant parameter estimates on not only key explanatory variables but also seasonality and other control variables. A hedonic specification is appropriate given only one race season is analyzed.

Research access to customer and track-level wagering data, horse racing performance data, and related sports betting data enables broader and deeper insights for the long-term benefit of the horse industry.

References:

Koch, S. ‘A hedonic model of all-sources, single-leg wagering on the Woodbine 2009 standardbred races’, July 11, 2010.

Koch, S. ‘Econometric models of all sources, HMA and export wagering on the Woodbine 2011 thoroughbred race product’, March 2, 2015.

Koch, S. ‘Declining field size: a global issue’, 2014 Global Symposium on Racing and Gaming, Tucson, Arizona, December, 2014.

Smith, M.D. (2001) ‘Breeding incentive programmes and demand for California thoroughbred racing: is there a quality/quantity tradeoff?’, *Applied Economics*, Vol. 33, pp. 1755-1762.

Vickner, S.S. and Koch, S. ‘Modeling the determinants of handle: an analysis of Woodbine thoroughbred racing data’, *Analytics Brief 2018-02*, September 28, 2018.

Dr. Steven S. Vickner is an economist and associate professor in the Equine Industry Program, College of Business, University of Louisville. He earned both his MS and PhD in agricultural and resource economics from Colorado State University, an MBA in management from the University of Denver and a bachelor's degree in economics from Bowling Green State University. His research focuses on the role of information and technology on economic decision-making, and he has done years of extensive work studying yearling thoroughbred prices. For more information, contact Vickner at (502) 852-4888 or steven.vickner@louisville.edu.

Steve Koch is the Executive Director of the Safety & Integrity Alliance at the National Thoroughbred Racing Association. He previously was the vice president of racing at Woodbine Racetrack in Toronto, Canada. Prior to Woodbine, Koch worked at the Keeneland Association and he was raised as a horseman at Claiborne Farm. He earned a MS in agricultural economics from the University of Kentucky. For more information, contact Koch at skoch@ntra.com or www.linkedin.com/in/kochstephen.

The Equine Industry Program at UofL is the only accredited undergraduate business degree in the world with an equine focus. Graduates can be found in all aspects of the industry, from training to broadcasting to financial analysis.

The *Analytics Brief* series is published by the Equine Industry Program, College of Business, University of Louisville as a part of its ongoing research program and is intended to address contemporary economic, business, and legal/regulatory topics in the broadly defined equine industry, including but not limited to, pari-mutuel horse racing, wagering, gaming, auctions, breeding, other equestrian sports, equine-related tourism, and all relevant supply chains.