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Understanding key drivers of the Thoroughbred foal supply is fundamental to long run industry sustainability. A short supply of foals poses significant future challenges for racing executives offering a full season of healthy racecards. In many regions the foal supply has steadily declined and/or plateaued. The following represent the top factors explaining those trends:

- Inflation-adjusted average yearling prices from two years ago are directly related to the current year's supply of foals. These real prices have trended downward over the study period ending 2016, hence leading to a decrease in the number of registered foals.

- Inflation-adjusted average livestock farm production expenses from two years ago are inversely related to the current year's supply of foals. Real expenses have trended upward, hence leading to a decrease in the number of registered foals.

- As is the case with many commodities, the supply of foals from one year ago is directly related to the current year's supply of foals. This inertia is common in economic data and perpetuates a trend until either a structural shift or move-the-needle event creates a turning point.

- The Mare Reproductive Loss Syndrome (MRLS)-induced decrease in the supply of foals in 2002 was nearly 5.5 times larger than the decrease in the supply of foals in 2001. This underscores the need to control for animal health disruptions to the supply chain.

While no crystal ball exists to peer into the future with certainty, a significant increase in real average yearling prices in 2017 and 2018 - due in part to growing real GDP in 2017 and 2018, as well as a slight uptick in real total North American purses in 2018 - bodes well for the future supply of registered Thoroughbred foals.

The present study builds upon the research of the academic thought leaders of the past, but with more recent data available from the online Jockey Club Fact Book and other sources of annual economic data. A dynamic panel data methodology was used in this study with 36 regions covering the U.S., Canada, and Puerto Rico. A model excluding Puerto Rico and another model focused just on the U.S. were also estimated with nearly identical results to the full 36-region model. Accounting for the lag structure of the model, there were 19 years of data per region ending in 2016. Recall, there is a two-year grace period to register a foal hence 2016 was the last full year of actual data. All of the drivers of foal supply were highly statistically significant and maintained the expected directionality that the laws of economics would dictate. The model also corrects for heteroskedasticity which is important given foal production varies geographically. Future research efforts in this vein of analytics will also consider the impact of owner/breeder incentive programs pending data availability. Additionally, related studies will address the key drivers of the real price of yearlings over time, such as the health of the business cycle as measured by changes in real GDP, exchange rates, real purses, and the number of races to mention just a few.

References

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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. He teaches Equine Economics, Equine Marketing, and the senior capstone project course in the EIP, as well as Data Analytics II in the new MS in Business Analytics Program. For more information, contact Vickner at (502) 852-4888 or steven.vickner@louisville.edu.

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