STATE BRED EVENT DAYS EFFECT ON ATTENDANCE AND ON-TRACK WAGERING IN
COMPARISON TO OPEN RACE DAY COUNTERPARTS

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ABSTRACT

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Since 1978 casino and gaming facilities in the United States have grown substantially. Drawing outside customers has helped to improve the local communities surrounding the gaming facilities. In a similar fashion, United States horse racing aims at increasing traffic and wagering at race tracks throughout the United States (but unlike casinos little expansion). Along with the fiscal impact to the United States, the horse racing industry has created thousands of jobs, and the industry is experiencing continual growth in nominal gross wagering. Many state's have breeder programs that enhance purses and horses bred and raced in- state. The goal of this research was to assess whether these state bred event days (SBED) attendance and/or wagering were comparable to controls, the proximal weeks. Data was collected over a three year period and included sixteen states with such programs. The data was analyzed using ordinary least squares regression methods. Two models were run, an on-track wagering model, and an attendance model on a set of structural variables. In the on-track wagering model positive variables, including purse levels, change in track venue, and SBED concurrent with a major national race day (Triple Crown or Breeders' Cup days), were associated with an increase in on-track wagering. California and New York SBED experienced significant increases in on-

track wagering over open race days. The attendance model had similar results. While SBED programs are not used in every state, their overall contribution to horse racing is apparent and substantial. The enhancement and introduction of new well planned SBED programs in United States racing jurisdictions might increase attendance and wagering.

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CHAPTER I

INTRODUCTION

Sporting and entertainment events help define countries and attract tourists. Sports tourism has been prevalent for centuries and has seen exponential growth in the last ten years (Gibson, 1998). Whether soccer in Spain, baseball in the United States, or horse racing in England patrons are seeking the event day atmosphere of games and the overall fan experience. For instance, in England, bands and foods that appeal to the local culture aim to entertain and entice patrons to attend these events (Deloitte, Touche & Tohmatsu Ltd, 2009). In the same fashion, the United States is starting to see increasing number of patrons participate in sports tourism. Sports tourism is defined as tourism to a city that is based around a particular sport (Hudson, 2003). In the particular cities visited, patrons expect to be able to tour sports facilities, buy sport related clothing and equipment, and other things related to the sport. A study of New York sports tourism found that over 50,000 New York City visitors attended Madison Square Garden, and likewise in Washington DC the MCI center is strategically placed next to shopping malls and museums to complement sports tourism (Hudson, 2003).

Attracting consumers for a “game day” atmosphere is key in the development of sports tourism. With development of communication technologies such as television, radio, and internet, sporting events are accessible for most viewers. In such a world, there is less need for consumers to actually attend live events. Aspray and Hayes (2011) mentioned that eight and one- half million Americans watch an NFL game during a season on Monday night television (TV). While TV remains one of the most

prevalent ways Americans watch football, fans are beginning to engage in other forms of entertainment that give them a feeling of closeness with their teams such as fantasy football leagues. Aspray and Hayes (2011) realized that one of the most important factors motivating sports fans is geography, where fans show allegiance to a particular locality or geography. The theory of geography as a motivating factor is crucial not only in major league sports, but can be carried over to horseracing.

This geographical allegiance is realized in horse racing through interest in state run programs or regional/state championship events. As racing is regulated at the state level in the United States, several states have state bred programs to encourage horse breeding and production. In part to attract horse owners to these races, states offer larger purses¹, purse enhancements. Organizations also aid in ensuring patrons have fair wagering on race day. One of these associations, the Association Racing Commissioners International (ARCI), conducts background investigations of potential licensees to protect the public and ensure fair game on all race days (ARCI, 2013).

The “Cal Bred Program,” one of the many state programs across the country offering a number of incentives for state bred horses. The California Thoroughbred Breeders Association (CTBA) is the official supervising and record- keeping agency that seeks to ensure quality Thoroughbred horses within California. California’s state breeder incentives to mare and stallion owners restricted race programs, enhanced open race purses, and owner awards. A CTBA (2007) slogan is, “It pays to be a Cal-Bred”. Owners and breeders of California bred horses are able to participate in a number of restricted races as well as enhanced purses to ultimately increase earnings.

¹ Purses are the amount of prize money allocated to the top three horses in race, according to a horse’s finishing place.

By California law, each racing association is required to offer at least one Cal -Bred race per day and must allocate at least ten percent of their stakes² dollars to Cal-Bred restricted races. With the Cal-Bred only restricted races being a part of the Cal- Bred program, increased quality in breeders, owners, and horses have been realized (CTBA, 2007). Purses enhanced for Cal-Bred horses encourage open (non- restricted³ overnight races⁴) as well.

Table 1 presents the major programs offered by racing states in the United States. Seventeen of the twenty-one racing states have state bred restricted races, or state bred event days (SBED). Column three reflects the states that have restricted stakes races for horses bred within their states.

“Open races” are open to horses from anywhere (domestically or internationally) as long as they are a registered Thoroughbred with the American Jockey Club recognized registration papers. They may have negotiated standard purse distributions, which are usually or often lower than the state specific race day events and a wider variety of horse origins. In addition, open race days appear to have lower attendance than state bred event days.

Table 2 provides the example of the 2009 state bred race day from Hobbs, New Mexico at Zia Park, a strong example of SBED market draw, when contrasted all other race days in the meet for the same day of the week. Attendance on this SBED was about 40% higher and double the wagering was seen compared to the average Sunday in this race meet. Is this typical of state bred event days in the United States?

² The highest class of a race; A race in which an entry fee is paid by the owners of the horses starting and those entry fees are added to the purse; thus; a stakes is often referred to as an added-money race. Also, invitational races (no entry fee required) with a large purse (usually \$50,000 or more) are regarded as stakes races (Blood-Horse Staff, 2005).

³ A race open to horses from any state versus the state bred races that are specifically for horses bred within the state

⁴ A race in which entries close a specific number of hours before running as opposed to a stakes race for which nominations close weeks or months in advance (Blood-Horse Staff, 2005)

Table 1. United States State Bred Racing Programs 2012.

State	Restricted Races	State Bred Event Day	Breeders Awards ⁵	State Awards
Arkansas ⁶	Yes	Yes	X	X
California	Yes, min.1 race per day	Yes, Cal Cup, Gold Rush, Cal Million	75%	X
Delaware	No	Yes		
Florida	Yes	Yes, Florida Sunshine Million	35.7%	X
Iowa	Yes	Yes	12%	X
Illinois	Yes, min.two/day	Yes	11.5%	X
Indiana	Yes	Yes	20%	X
Kentucky	N/A	N/A		
Louisiana	Yes, min. three/day	Yes, Louisiana Classics(3)	20%	X
Massachusetts	N/A	Yes		
Maryland	N/A	Yes, Maryland Million	X	X
Michigan	Yes	Yes	X	X
New Jersey	Yes	Yes	35%	X
New Mexico	Mixed meets 2 per day	Yes	10% increase of orig. purse	X
New York	Yes	Yes	30%	X
Ohio	Yes	Yes-33 Stake Races— Best of Ohio Series	X	X
Pennsylvania	Yes	Yes	X	X
Texas	Yes, two per day	Yes	X	X
Virginia	Yes	Yes	X	X
Washington	Yes, about one per day	Yes, Washington Cup Day	X	X
West Virginia	Yes	Yes	X	X

Source: CTBA, and other state bred associations

Table 2. State Bred Wagering and Attendance Versus Meet Average (2009)

Race (Date)	Attendance	Wagering
11/8/2009 New Mexico Classic (State Bred Day)	2,985	\$548,754
2009 Meet ⁷ Average (same day of week)	2,100	\$279,069

Source: Equibase Company, "Race Charts, Zia Park" 2009.

⁵ Percentage of total purse taken when available

⁶ Arkansas has some restricted races in other neighboring states (held at Louisiana Downs)

⁷ A race meet is a regular occasion on which a number of horse races are held on the same track, comparable to a "season" in sports (Collins English Dictionary, 2003). In the US it refers to the continuous weeks or racing at the same location.

Problem Statement

Do state bred horse racing event days have a wagering or attendance enhancing effect over comparable open race days?

Hypotheses

H₁- State bred event day on-track wagering is greater than or equal to proximal weeks (before and after)for the same day of the week at the same track.

H₂- State bred event day attendance is greater than or equal to proximal weeks the same day of the week at the same track.

Objectives

- 1) To determine whether state programs broadly contribute to the overall racing industry through analysis of attendance and wagering.
- 2) To assess the size and direction of impact of selected aspects of state bred event days.

Justification

Since its introduction, gambling has been a topic of concern for many American's. Steady growth in the casino gambling industry in the United States has been realized in the last two decades. The number of states permitting some form of gambling has gone from one in 1978 to about thirty by the end of the 1990's (Eadington, 1999). As seen in Table 3, the gambling industry in the United States has experienced growth and the casino gambling industry has nearly doubled in the last ten years.

Table 3. Gambling and Casino Industry Growth 1997-2007.

Gambling	1997	2002	2007
Establishments	2,060	2,075	2,327
Receipts (\$1,000)	13,672,720	18,902,413	25,134,654
Paid Employees	145,816	157,641	169,640
Payroll (\$1,000)	2,727,781	3,599,135	4,566,176
Casino Hotels	1997	2002	2007
Establishments	354	356	300
Receipts (\$1,000)	8,348,406	12,386,830	16,556,884
Paid Employees	93,494	105,792	111,240
Payroll (\$1,000)	1,841,961	2,531,905	3,153,996
Racing	2001	2002	2007
Race Courses	170	174	180
Total Wagering (\$1,000)	19,708,249	17,041,876	9,998,058
Returned to racing (\$1,000)	1,675,201	1,348,873	801,619
Government	366,573	315,274	184,964
Prize money	1,438,947	1,216,712	955,860
Breeders premium(\$1,000)	1,795	1,560	1,665
Owners' premium (\$1,000)	153,400	130,599	133,078
Number of Stallions	4,250	5,046	4,253

*Notes:

-(NAICS) 7132 (Gambling)- industry group comprises establishments (except casino hotels) primarily engaged in operating gambling facilities, such as casinos, bingo halls, and video gaming terminals, or in the provision of gambling services, such as lotteries and off-track betting. Casino hotels are classified in Industry 72112.

- 2001 Horse racing data was used because prior to this date data was recorded in French

Source: Industry Statistics Sampler, United States Census Bureau, (1997-2007); International Horse Racing Federation, Wagering, (2001-2007)

In an effort to increase revenues, casinos attempted to pull consumers from outside areas where gambling was often prohibited. Eadington (1999), believed that as long as casinos could bring people who spent from outside of the area that job creation, stimulation of local investment, and enhancement of local government revenues could be expected. In a similar fashion to the gambling system in the United States, the race horse industry has come to expect the same results in their gambling system. The racing horse industry throughout the United States has created thousands of jobs and will continue to do so as long as horses are racing. In New York, the race horse industry had a \$4.2 billion effect on the state's economy and generated 33,000 full time jobs in 2011 alone (Lagonia, 2012).

As depicted by Table 4, the racing horse industry in the United States employs over 14,000 people. This is an increase from 2002 where the racing sector employed just under 11,000 people (CHRB, 2012). The industry is experiencing continual growth. In addition to the jobs and revenue created by the horse racing industry in the United States, the horse industry as a whole⁸ bring generous revenues into the country.

Table 4. California 2010 and 2011 Racing License Statistics Implicit Employment.

Occupational License Type	Fee	Total Licenses
Apprentice Jockey	\$150.00	35
Assistant Trainer	\$150.00	335
Assoc. Employee, Assit. Office	\$75.00	630
Authorized Agent	\$25.00	2484
Bloodstock	\$150.00	38
Driver	\$150.00	118
Exercise Rider	\$75.00	935
Groom, Stable Employee	\$35.00	3804
Jockey	\$150.00	332
Jockey Agent	\$150.00	94
Official	\$150.00	367
Others	\$75.00	951
Parimutuel Employee, Auditor	\$75.00	2120
Plater	\$75.00	130
Pony Rider	\$75.00	178
Security Guard	\$75.00	563
Stable Foreman	\$75.00	229
Trainer	\$150.00	899
Valet	\$75.00	29
Veterinarian	\$150.00	137
Total		14,408

Source: CHRB, 2012, "41st Annual Report of the California Horse Racing Board. A Summary of Fiscal Year 2010-11 Revenue and Calendar Year 2011 racing in California"

The 2005 US horse racing industry, brought revenues of around \$4,000 per horse (see Table 5). This is the greatest of any horse sport (Deloitte, Touche, & Tohmatsu, 2005). The information in this chapter has suggested that the industry is growing and has positive economic benefits seen by the

⁸ Horse industry in the United States includes all show horses, racing horses, and recreational horses

United States with the racing industry generating the greatest amount per horse. Thus it is of interest to determine what programs help keep the industry successful, one such program being SBED. Upon the determination of successfulness of SBED, current racing systems could be modified to generate potentially greater revenues for the United States.

Table 5. Annual Revenue per Horse Activity 2005

Activity	Racing	Showing	Recreation	Other	Weighted Average (per horse)
Purses and Fees	\$1,297	\$205	\$44	\$118	\$221
Stud Fees	\$114	\$52	\$22	\$47	\$44
Horse Sales	\$1,403	\$519	\$232	\$378	\$452
Boarding/ Training	\$960	\$365	\$145	\$277	\$309
Veterinary Services	\$9	\$12	\$7	\$15	\$10
All other Revenues	\$208	\$137	\$87	\$215	\$136
Total Revenue	\$3,991	\$1,289	\$536	\$1,050	\$1,172

Source: Deloitte Touche & Tohmatsu Ltd, 2005.

CHAPTER II

REVIEW OF THE LITERATURE

Race Day Atmosphere

The literature review will start with a look into the race day atmosphere and what consumers expect from their experiences. It will then move to talking about expenditures and wagering in a general sense and how things have changed. Next, the racing horse industry and unique wagering systems will be explored. Then, studies which aim to increase attendance at these prominent race days will be explored. In conclusion, the economic impact sporting events have on society and the downfalls of certain methodology tactics will be explored to ultimately lead to the methodology.

Remaining on the cutting edge of the sports industry is something that many sports teams strive to do. With the introduction of new consumer choices, attention to certain details is key in remaining the popular choice. The racing horse industry has aimed at retaining a competitive edge in the entertainment/sports industry through the development of new concessions offered to consumers. Ahern, Patrela, and March (2009) found that state bred attendance increased when an “event day” type atmosphere, similar to that of a big sporting event, is created. This “event day” atmosphere, as well as pride for ones state, attracts wagering consumers. This type of atmosphere is being created by many race tracks throughout the world. The British Horse Racing Authority (Deloitte Touche, & Tohmatsu, 2009) study sought ways to improve the atmosphere created for consumers at race days. The British Racing Authority found that some components to the consumers overall experience were more

important than others. The most important of these being: appealing to the local history of the city and building tracks that had history and dual use purposes (off season event facility). With horse racing being the second most popular sport in England, right under English football, the British have a rich history in preserving and accelerating the attendance at their race tracks. The British use broadcasting, catering, local customs, and enhancement of their tracks to ensure the attendance numbers continue to climb. Deloitte Touche & Tohmatsu Ltd mentioned that the British develop tracks that can be used for other uses besides the racing events which helps augment the upkeep of the facilities while attracting people to the track. Local bands and other entertainment from the cities where the races are being held in England are also brought in on big race days to improve the overall experience of those in attendance (Deloitte, Touche, & Tohmatsu Ltd, 2009).

The horseracing industry is dependent on consumers to attend races and wager on horses yet consumers have a plethora of choices related to sporting events. In order to better understand the choices that consumers make regarding sporting events they attend, Mongeon (2010) researched economic competition between different sporting avenues. More specifically, he studied the consumers choice to attend or not-attend and what went behind this thought process. Mongeon (2010) profiled people that attend sporting events versus people that watch the sports from home. In his profiling, Mongeon found that less affluent people tend to watch the game from home and have a greater vested interest in the results of the game than those that attend live. Other sporting events offered to consumers plays a key role in the decision making process of how consumers will spend their money. In addition, other ways to invest consumer money is a critical attribute to understand when making a decision. Mukhtar and Thalheimer (1995) found that lottery within states, the quality of the races, and the amount of race days offered within a state also had an impact. They found the state lottery in Ohio was associated with a 17.2% decrease in race day attendance. This relationship between state lottery

and attendance at race days is useful as we continue to profile the consumer attending races and the decisions the consumer made to get there. It could potentially lead us to improvements upon the types of wagers allowed and the amounts people can win at races to outweigh the option of state lottery.

Expenditures

Wagering and betting on sports events and in casinos has been a topic of controversy for years in the United States. We have seen a development from the illegal times, where bookkeepers were used, to now when there are legalized forms of betting/wagering. There have been many attempts to profile the kinds of people that are wagering and betting in casinos or at sporting events. Ignatin (1984) profiled people who wager on sports events and concluded that there are two types of people betting on sporting events. These two types of consumers are consumption consumers and investment consumers. Consumption consumers bet to increase their overall utility while investment consumers place bets to increase their wealth. When the differences in these consumers are examined, one can use those differences to appeal to the different kinds of people wagering on events to increase economic performance of the event.

Economic benefits of these events are of the utmost importance to investors and stakeholders when exploring any new event. If economic benefits are not seen when historical data is examined, stakeholders will be less likely to invest their money. The economic importance of the event is important at both a national and local level. Gambling has played a role in the development of the United States economy and the effects ripple throughout other industries. Gambling impacts the economy through job creation and through increased technological advancements (American Gaming Association, 1999). Technological advancements have allowed betting and wagering to move internationally bringing in more revenue for the economy as a whole (Christiansen, 1998). Betting has

also allowed over one million Americans to gain jobs that would otherwise not exist, which increases productivity of our country (American Gaming Association, 1999).

Effects are seen at a local level as well as a national level when sporting events are held. The events that have a greater effect on the economy, and that we are exploring in more depth with the state bred race days, are mega events. Mega events are events such as the World Series, Pan Am Games, Super bowl, and others of the same caliber. While mega events affect the local economies no relationships were found between new sports venues and economic growth (Matheson, 2006). People in host cities are happier and more productive in the labor force and that contributes to the overall economy. Matheson also mentions that caution should be taken when reviewing studies on economic effect due to these mega events because of: the substitution effect, crowding out, and leakages. The substitution effect occurs when people spend money at the mega event rather than supporting local entities in the community surrounding the event or their own communities. Crowding out occurs when congestion from the mega event causes to other cities versus the one where the event is being held. Leakages occur when money spent in the local economies during mega events does not end up in the pockets of the local residents even though their tax dollars are paying for the event to occur (Matheson, 2006). Like sporting events, state bred race days stimulate the economy in neighboring communities.

Racing Horse Industry

In the history of horse racing, many different types of wagers have been introduced and outlawed as well. Exotic wagers are one of the ways to wager on horses. Exotic betting includes the daily-double, where two winners in consecutive races are picked, and the exacta where someone must pick the top two horses in a race in the correct order. In both of these wagering systems people have the ability to hide the fact that they have insight and can try and make better predictions of the odds of

specific horses. While betting for these wagers end at the beginning of the race, after the first race the “expected payout” for daily-double is posted for everyone on the track to see. With that being said, secrets about the horses and their expected performance are revealed and people will then place bets on the top horses which will in turn reduce the amount of money one would win on the horse (Asch and Quandt, 1987). Asch and Quandt found both of these exotic wagering forms were actually inefficient economically compared to wagering on individual horses. This information helps race track officials make better decisions as to what types of wagers bring economic profit and more consumers to the track.

Race horse wagering should have similar economic effects on the economy as sporting events. Snyder (1978) sought to determine whether betting on race horses was a profitable venture. He used a series of three thresholds when setting up his testing: weak form, semi-strong form, and the strong form. The weak form is used to determine whether past prices alone can predict current prices. The semi- strong form was used to determine whether other publicly available information was used in predicting prices. The final threshold, the strong form, is concerned with demonstrating whether any special group is able to achieve a higher than average rate of return. It is concluded that there is no way to gain positive profits after take outs are taken from the total wagering amounts.

Even though this news is somewhat disappointing in examining the effect state bred race days have in comparison to open bred days there are programs that are in existence or being revived to help ensure a thriving industry for years to come. California offers numerous incentive programs to breeders, owners, and trainers to encourage quality horses within the state. The California incentive programs do support the quality of horses racing in the state races and race enthusiasts want to see the California horses running in bigger races. These race enthusiasts will wager more if more California bred horses were racing (Ahern and Noel, 2000).

While many states, and the race horse industry as a whole, prosper from the individualized state bred programs, some states do not feel the need. Kentucky has been known as the “horse capital of the United States” for many years and is the epicenter of American horse racing. In order to determine ways for Kentucky to maintain this competitive position within the industry, the governor assigned a task force to analyze the future of horse racing. The Report of the Governor’s Task Force on the Future of Horse Racing in 2008 (GTF) determined that Kentucky was losing racing patrons to nearby states with big state bred racing programs such as: West Virginia, Pennsylvania, Indiana, Louisiana, Illinois, Michigan, and Ohio. Kentucky is experiencing declining numbers in not only live attendance but horse participation as well. GFT also found that alternative gaming revenue is fueling substantial increases in breed and money incentive programs in other states, which increased competition between horses among racing jurisdictions.

Increasing Attendance

In an effort to increase attendance mega event and sports events characteristics alike are being explored. One of the biggest issues is the perception that consumers have of the attributes they expect a sporting event to have. Some of these attributes being: price, seat location, parking, restrooms, comfort, quality, outcome, security, and concessions available. Kelly and Turley’s (1999) survey research of consumer attributes at a basketball game concluded that females had more interest in price than males, males cared more about the concessions available than women, and older people valued comfort over other attributes. This information can be transferred into the race horse industry as we try and understand what kind of consumers attend race days and what kind of consumers watch race days from remote locations. As mentioned earlier in the British Deloitte study, the overall experience one gets at the race track directly effects whether consumers will continue to come to the track.

A key factor in making decisions today is the money it costs to attend these events. In sporting, ticket prices directly affect the attendance at a game or race. People will often pay more for a ticket if they know that the event will be of high quality or concessions will be available. Marburger (1997) found the demand for tickets was related to price of the ticket, quality of the event, and the characteristics of the local market. Ticket prices are inelastic and this is mainly due to the concessions available at these events. These concessions are often catered to the prospective audience that is predicted to enjoy the event.

Along with catering the concessions to ensure that consumers are happy with the experience they have at the event, other things must be taken into consideration. Stakeholders are one of the largest parts of sporting events or businesses and ensure, usually financially, that the business continues to grow and thrive. Power, legitimacy, and urgency are among the three most important characteristics that a planning committee for mega event days said were important to stakeholders (Deephouse and Parent 2007).

With keeping these characteristics on the forefront of one's mind, increasing attendance at an event will be an easier task. Generally, along with increased attendance, come increased expenditures which ultimately lead to an economic impact of some sort.

Economics of Sporting Events

On examination of different sports, at the collegiate and professional levels, results showed little to no overall economic effect from these sports. Baade, Baumann, and Matheson (2008) assessed the economic impact of college football games on the local economy. College football was chosen for this study because in 2006 college football game attendance was twice that of NFL games. The study analyzed data from 1970- 2004 of sixty three cities that play host to big-time college football programs

and found that neither the number of home games played, the winning percentage of the local team, nor winning a national championship had a distinguishable impact on either employment or personal income in these cities. The conclusions drawn by Baade, Baumann, and Matheson are consistent with those reached by Sigfried and Zimbalist (2006). The later concluded that while there may be beneficial effects to the local community from the building and development of new sports infrastructure, ultimately there is no economic effect. However, when the stadiums are built, a false sense of reality is conveyed through people who are contracted to conduct economic studies for sports teams. Some perceived benefits found through research Sigfried and Zimbalist (2006) are: a surplus for fans who attend the matches, external benefits for residents who watch the team on TV or through other broadcasting, and a sense of pride among local community. Like Sigfried and Zimbalist (2006), another prominent study looked at the portrayal of how people use and misuse the real effects of economic analysis. Hudson (2001) sought to clarify the issue of community sports team subsidies. He concluded that there was no distinguishable effect on the surrounding community from these sporting events as Baade, Baumann, and Matheson (2008) also found.

In a similar study, Gibson, Willming, and Holdnak (2002) studied small- scale sporting events and the tourism attracted by these events. Specifically looking at “mega” events and in particular Florida Gator college football games, the authors found that there are two types of sporting patrons; excursionists and tourists (who spend the night). It was determined that on average the fans studied an average of 143 miles to games and that the tourists spend more money on the local economy than the excursionists did (hotel, food, shopping, *etc.*), while both groups main motivation was the enjoyment of the football game. The spending by Gator fans contributed significantly to the economy of Gainesville Florida.

CHAPTER III

METHODOLOGY

This project expands previous single state analysis' for the state bred programs and the race horse industry as a whole, to a national sample. The information gathered will allow additional insight as to the usefulness of these state bred incentive programs to the promotion of horse racing as well as the degree to which the model's arguments impact wagering on these event days.

Ordinary least squares models are specified and are of interest to the racing sector, the first defines the day's wagering or handle, the second the day's wagering or handle normalized for population, and the third defines an attendance live on track as a measure of event day quality. Models were determined through examination of previous research, which indicated that the industries objective function appears to be one of maximizing total revenues while managing costs in response to accommodating net revenue generating spending by using patrons. Revenue is generated from a share of wagering take from the wager pools and from sales of admissions and concessions (Ahern and Noel, 2000).

Procedures for Data Collection

Racing quantity taken or consumed (wagering or handle and or attendance) on state bred event days will be measured as total wagered in all race day pools, or total wagering (On TrackM) as well as a normalized version (NormHanM (OnTrackM/ Population), which normalizing wagering based on

population, from January 2009 through November 2011 for sixteen states, with identified state bred event days, including: California, Florida, Illinois, Iowa, Louisiana, Maryland, Michigan, Minnesota, New Mexico, New York, Ohio, Oklahoma, Pennsylvania, Texas, Washington, and West Virginia. Thus, the subset of states with attendance information will be included in model three in order to determine if wagers and or attendance was correlated with the racing caliber, measured by: amount of wagering, runners per race, races per day, race day purses, population, whether the event was a state bred day or other racing day and what other prominent races occurred on the same day as the race in question. These state bred event days (SBED) provide the test values or observations and the non-event days pre and post the event day for the same day of the week at the same track provide the control observations. Control observations are the same race days of the week, both the week before and the week after the event day.

Race day statistics are collected from a race card or daily race chart. Multiple races statistics are recorded on these cards and they are then made available to the public. The race wagering is aggregated across all race pools and multiple races wagering pools and thus total is a day unit in dollars.

The race chart, included below in Figure 1, is a visualization of what the data collected encompasses. The race charts were collected for individual event days as well as the controls. Information such as: horse's name, the last race run, post number⁹, horses running, stats, and additional comments are gathered from these race charts. The third star indicates where the wagering data comes from. This includes the different types of wagering pools and allocation of moneys as well as the payoffs for each type of wager.

⁹ The post number refers to where in the lineup the horse will be located at the start of the race.

The number of runners per race (runners), races per day (RN), and race day purses (Total PurseM) were chosen on the basis that these three variables ultimately depict whether the race was a high caliber race through the entries and amount each entry is able to win. In certain models, Purse was further divided into open race day purses (Open PurM) and state bred event day purses (SBED PurM) in order to make distinctions between states with different levels of programs. The track condition on the day of the race (DTrack) will also be included in the models to see if the condition of the track has any relation to the amount wagered or the attendance on race days. The condition of the track is included on the race chart. The distinction of whether or not the race is a SBED (SBED) and other prominent races occurring on the same day (DMajor) will help to draw a correlation as to what type of days attract the most wagering or attendance at these tracks. The major races used for the purpose of this research are the Breeders Cup and the three legs of the Triple Crown which are: Belmont Stakes, Kentucky Derby, and the Preakness Stakes.

Dummy variables have been added for each state included in the data set (Dstate) (1 if state, 0 else). These variables will ultimately allow for relationships between states to be realized. These dummy variables will also tease out differences between states to get a full picture of the data. Individualized regional data will be made available to states in the data set.

The quality of a race is often determined by the horses running in that race (runners). This idea holds true across multiple sports. Expert opinions from Katie Flanigan state that higher quality horses will attend and spend more money on shows with money prizes or shows that will give them a sense of entitlement for winning. Flanigan (2013) suggests that while “nice horses” attend schooling shows in their younger days, the rated shows seem to bring “higher caliber horses” to compete for larger prizes and titles. In the same way, higher purses (prize money) in horse racing attract higher caliber horses to

compete. Along with higher caliber horses, the argument could be made that more fans would attend the races because of their allegiance or familiarity with the local state bred athletes.

Figure 1. Santa Anita Park 2008 Race Chart

SANTA ANITA PARK - October 26, 2012 - Race 2

CLAIMING - For Thoroughbred Three Year Old and Upward Fillies and Mares **Claiming Price:** \$16,000 - \$14,000

Six And One Half Furlongs On The Dirt **Track Record:** (Square Eddie - 1:13.11 - January 14, 2011)

Purse: \$22,000

Plus: \$350 Other Sources

Available Money: \$22,350

Value of Race: \$22,350 1st \$13,200, 2nd \$4,400, 3rd \$2,640, 4th \$1,320, 5th \$440, 6th \$350

Weather: Clear **Track:** Fast

Off at: 1:32 **Start:** Good for all

EQUIBASE
COMPANY

[Video Race Replay](#)

Last Raced	Pgm	Horse Name (Jockey)	Wgt	M/E	PP	Start	1/4	1/2	Str	Fin	Odds	Comments
7Oct12 ⁴ SA ²	2	Roman Charity (Baze, Tyler)	122	L	2	3	5 ¹	2 ^{1/2}	1 ²	1 ^{4 3/4}	2.40*	bid 1/4, led, clear
14Sep12 ⁸ FPX ⁴	3	Rossi Reserve (Gryder, Aaron)	122	L b	3	6	1 ¹	1 ¹	2 ³	2 ^{2 1/4}	6.30	angled in, 2nd best
7Oct12 ⁴ SA ³	5	Real Housewife (Smith, Mike)	122	L b	5	4	4 ^{Head}	4 ^{Head}	3 ²	3 ^{3 1/4}	3.00	4wd to turn, best rest
12Oct12 ⁸ FNO ¹	1	Filly Power (Talamo, Joseph)	122	L	1	1	2 ^{1/2}	3 ¹	4 ²	4 ^{1/2}	2.90	inside trip, weakened
16Sep12 ¹¹ FPX ⁵	4	Dance Little Angel (Sanchez, Juan)	115	L b	4	2	3 ^{Head}	6	6	5 ^{2 3/4}	56.40	btwn to turn, weakened
3Sep12 ⁸ EMD ³	6	Single N Lovin It (Espinoza, Victor)	122	L	6	5	6	5 ²	5 ^{1 1/2}	6	3.20	5wd, 4wd, weakened

Fractional Times: 22.53 45.97 1:11.12

Final Time: 1:17.98

Split Times: (23:44) (25:15) (6:86)

Run-Up: 78 feet

Source: Equibase Company, 2012

In addition to the purses offered at these state bred races, a number of the races on open race days (such as the control days) will include incentive funds for horses bred within a state. These purses are often substantial and enhance the chances that quality, in-state horses run within the state. This ultimately keeps more wagering and other track revenue within the state. In California's program in particular, the incentive funds are separate and in addition to the race day purses versus other state programs in which the incentive funds are included in the purse.

As seen in Table 6, races that have higher purses are usually stakes races, which often have higher quality participants, reflected in the amounts people wagered on these races. In the table above, races six through ten are stakes races and ultimately have higher wagering numbers than the allowance or claiming races seen earlier on the race card for this particular event day.

Table 6. OakTree at Santa Anita, Cal Cup Day, Oct 2009 Horses, Purses, and Wagering.

Races	Horses Started	Purses (Race \$)	Wagering
1	6	\$16,000	\$302,139
2	5	\$100,000	\$357,433
3	5	\$75,000	\$288,075
4	9	\$100,000	\$780,675
5	5	\$50,000	\$375,238
6	6 (Cal Cup Classic)	\$196,000	\$666,649
7	10 (John Deere Cal Cup)	\$100,000	\$1,177,033
8	7 (Donald Valpredo Cal Cup)	\$100,000	\$1,127,699
9	7 (John C Mabee Cal Cup)	\$125,000	\$1,007,482
10	9 (Bob Benoit Cal Cup)	\$100,000	\$1,108,840
	69	\$962,000	\$7,191,263

Source: Equibase Company, Santa Anita Cal Cup Day, 2009

Procedures for Data Analysis

The data will be analyzed using Minitab 16 statistical package (State College, PA). Ordinary least squares method regressions will be used to estimate effects. The complete data set is included in Appendix A, B, and C.

Model 1: 2009-2011

On TrackM = f (Runners, Rnrs/Race, PurseM, SBED, DMajor, Dstate, DCond, DTrack)

where:

On TrackM- Amount of On-Track wagering (in thousands)

Runners- Total runners on the day's card

Rnrs/Race- Average number of runners per race

PurseM- Open Race purses (in thousands)

SBEDPurM- Purses for SBED races (in thousands)

SBED- a state bred event, (1 if SBED, 0 else)

DMajor- Other prominent races occurring the same day (Breeders' Cup, Belmont Stakes, Preakness Stakes, and Kentucky Derby)

Dstate. To account for differences between states a dummy variable for each state included in the data set has been made

DCond- Track conditions on race day (0 if fast or firm and 1 if other)

DTrack- Changes in track occur (0 if no track change, 1 if change)

PopM- Population of track and surrounding area (SMSA, or up to 250 miles away)

Model 2:

On TrackM/ Pop= f (Runners, Rnrs/Race, PurseM, SBED, DMajor, Dstate, DCond, DTrack)

where:

On TrackM- Amount of On-Track wagering (in thousands)

Runners- Total runners on the day's card
 Rnrs/Race- Average number of runners per race
 PurseM- Open race purses (in thousands)
 SBEDPurM- SBED race purses (in thousands)
 SBED- a state bred event, (1 if SBED, 0 else)
 DMajor- Other prominent races occurring the same day (Breeders' Cup, Belmont Stakes, Preakness Stakes, and Kentucky Derby)
 Dstate. To account for differences between states a dummy variable for each state included in the data set has been made
 DCond- Track conditions on race day (0 if fast or firm and 1 if other)
 DTrack- Changes in track occur (0 if no track change, 1 if change)

Model 3: 2009-2011

$Att = f(\text{Runners, Rnrs/ Race, PurseM, SBED, DMajor, Dstate, DCond, DTrack})$

where:

Att= Attendance on race day
 Rnrs/Race- Average number of runners per race
 Runners= Total runners on the days card
 PurseM= Open race purses (in thousands)
 SBEDPurM= SBED race purses (in thousands)
 SBED- a state bred event, (1 if SBED, 0 else)
 DMajor- Other prominent races occurring the same day (Breeders' Cup, Belmont Stakes, Preakness Stakes, and Kentucky Derby)
 Dstate. To account for differences between states a dummy variable for each state included in the data set has been made
 DCond- Track conditions on race day (0 if fast or firm and 1 if other)
 DTrack- Changes in track occur (0 if no track change, 1 if change)

Parameter size and parameter direction (+/-) of D_{SBED} on wagering while controlling for other variable factors will be determined. Control observations included in the model will include the same variables of On TrackM, runners, PurM, SBEDPurM, DSBED, DMajor, DCond, DTrack, and Att as shown in models at the beginning of this chapter.

Parameter is the size of dependent variable response per unit of independent variable. In the case of dummy variables, the parameters indicate the size of dependent response if the condition is met (*i.e.*, $DV_x=1$). The traditional normal test statistics, F^2 , R^2 , and Durban Watson statistic for equation evaluation were used in analyzing the data.

Assumptions

A key assumption is that the best control values for contrast or comparison are the proximal weeks' same day of the week (before and after) the SBED observation.

Data Problems

To ensure a complete data set, many resources were utilized and some problems were still discovered. A reoccurring problem was that in the cases of some of the SBED there was not a race the previous or following week due the beginning or ending of the race meet at that track. Another problem with the data was that one of the race tracks, Pinnacle in Michigan, gave up their racing license the third year in the data set (2011).

Table 7. Data Problems with State Bred Event Day Data 2009-2011.

2009	Cal Cup (wb) beginning of meet so used Fairplex was used as wb	Used a change in track in NY Showcase (wa) to Aqueduct Racetrack
2010	Cal Cup at Hollywood Park 10/30/2010	Construction at Santa Anita
2011	No Michigan event day, Pinnacle race course surrendered it's license	New York Showcase (wa) had weather problems so a change in track to Aqueduct was used
All years	CA Gold Rush first Saturday of the meet at Hollywood, SA previous Saturday (wb)	

As seen in table 7, there were some problems discovered with the data in each year. Upon further examination of one of the variables, the amount wagered at the races, the discovery was made that a better variable to use would be only the On-Track wagering. In separating on from off track wagering a new variable was made, On TrackM. Unfortunately some states did not present their data in such a way that the on and off track wagering could be separated. These states were excluded from the data set and included: Ohio, Illinois, and Florida.

CHAPTER IV

RESULTS

The correlation matrix (Table 8) illustrates one on one simple variable correlations. Of note are number of relationships. Total PurseM, DCA and DMD were positively correlated to attendance, while Total PurseM, Open PurseM, SBED PurseM, and SBED are correlated to Rnrs/Race. Open PurseM, SBED Purse M, SBED, and DCA are positively correlated with Total PurseM; however, if looking at SBED purses DCA and DMD are significant and positively correlated. This displays that while Total Purse was not a significant factor in Maryland, when dividing purses between the SBED and open days, SBED purses became significant. It is important to note the significant positive relationships for as one variable increases so does the other and vice versa. As indicated above generally SBED purses appear to be larger than controls, meaning a determination to whether a SBED is occurring by looking at the purses for the day. Therefore when models were run, SBED and PurseM measure the same effect or have potential multicollinearity. California, Florida, Maryland and New York were included in the correlation matrix because after examining the averages of variables above, they had the highest on- track wagering amounts out of the states in the data set.

Table 8. State Bred Event Day Model Variables Correlation Matrix.

	On TrackM		Wagering/Pop		Attendance		Rnrs/Race		Total PurM		Open PurM		SBED PurM		Dcond		SBED	
Wag/Pop	0.860	0.000																
Att	0.707	0.000	0.726	0.000														
Rnr/Rs	0.003	0.978	0.057	0.648	-0.161	0.196												
Total Pur	0.181	0.147	0.367	0.002	0.283	0.21	0.421	0.000										
Open PM	0.339	0.005	0.357	0.003	0.155	0.215	0.130	0.300	0.290	0.018								
SBEDPurM	-0.017	0.890	0.158	0.205	0.193	0.121	0.345	0.005	0.829	0.000	-0.294	0.017						
Dcond	-0.141	0.258	-0.179	0.149	-0.179	0.151	0.012	0.924	-0.018	0.886	-0.050	0.691	0.011	0.929				
SBED	-0.025	0.842	0.111	0.377	0.231	0.062	0.256	0.038	0.685	0.000	-0.327	0.007	0.875	0.000	0.035	0.778		
Dmajor	0.493	0.000	0.462	0.000	0.161	0.195	0.171	0.170	-0.143	0.251	0.053	0.672	-0.174	0.162	-0.087	0.485	-0.198	0.110
Dtrack	0.156	0.211	-0.007	0.956	0.184	0.140	-0.062	0.624	-0.138	0.268	0.135	0.281	-0.217	0.080	0.062	0.620	-0.138	0.268
DCA	0.342	0.005	0.270	0.028	0.340	0.005	-0.083	0.506	0.323	0.008	-0.257	0.037	0.473	0.000	-0.137	0.273	0.509	0.000
DFL	0.005	0.967	0.187	0.132	0.016	0.900	0.118	0.347	0.147	0.240	-0.018	0.884	0.157	0.207	-0.043	0.733	0.159	0.203
DNY	0.045	0.719	-0.117	0.351	-0.082	0.511	0.293	0.017	0.132	0.291	-0.126	0.312	0.206	0.098	0.161	0.196	0.279	0.023
DMD	-0.105	0.401	-0.028	0.826	0.385	0.001	-0.003	0.983	0.159	0.202	-0.165	0.185	0.255	0.039	-0.061	0.627	0.226	0.068

	Dmajor		DTrack		DCA		DFL		DNY	
Wag/Pop										
Att										
Rnr/Rs										
Total Pur										
Open PM										
SBEDPurM										
Dcond										
SBED										
Dmajor										
Dtrack	-0.080	0.521								
DCA	-0.101	0.420	-0.126	0.315						
DFL	-0.032	0.802	-0.039	0.755	-0.049	0.694				
DNY	-0.055	0.658	-0.069	0.582	-0.087	0.489	-0.027	0.829		
DMD	-0.045	0.720	-0.056	0.656	-0.070	0.575	-0.022	0.861	-0.039	0.758

Note: Cell contents Pearson correlation values followed by P-Values.

The primary purpose of the study was to assess whether SBED had higher “on- track” wagering than same track proximal week controls. In a similar fashion, a second hypothesis was whether SBED on- track attendance was greater than or equal to attendance the week before or after at the same tracks. It is hypothesized that wagering and attendance will be greater, or no worse, on these SBED than on same track open race control days. Initially ANOVA tests of OnTrackM, Att, and HandleM were conducted to determine whether means of the control subgroup and test subgroup (SBED) statistically different.

From these One- Way ANOVA tests, at the 5% significance level, there was not statistical a difference in the means of on-track wagering, while attendance on SBED versus “open race” control days was significant (see Table 11), at $\alpha = 0.05$ level . Over the three year data period, in sixteen different states, SBED did not have a negative effect on wagering (On TrackM which was numerically \$712,800 for SBED versus \$670,600 for controls), but had a positive significant effect on on-track attendance (Att. 10,484 on SBED versus 6,929 for controls, see Table 11). Thus, there were no mean differences between open and SBED in this national sample. However, the normalized OTW as a left hand side variable, there was a statistically significant difference in means seen in the means of wagering on state bred days and open race days (see Table 10).

Table 9. On- Track Wagering vs. State Bred Event Day 2009-2011 One- Way ANOVA.

Source	DF	SS	MS	F	P
SBED	1	50326	50326	0.06	0.815
Error	125	114167590	913341		
Total	126	114217916			

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev	
0	82	670.6	1002.1	(-----*-----)
1 SBED	45	712.2	863.7	(-----*-----)

450 600 750 900

Table 10. On Track Wagering/ Population (OnTrackM/Pop) State Bred Event Day Versus Open Race Controls, 2009-2011 One-Way ANOVA.

Source	DF	SS	MS	F	P
SBED	1	0.02177	0.02177	5.26*	0.023
Error	125	0.51727	0.00414		
Total	126	0.53904			

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev	--+-----+-----+-----+-----
0	82	0.07789	0.06577	(-----*-----)
1 SBED	45	0.10526	0.06159	(-----*-----) +-----+-----+-----+----- 0.064 0.080 0.096 0.112

Table 11. Attendance vs. State Bred Event Day 2009-2011 One-Way ANOVA.

Source	DF	SS	MS	F	P
SBED	1	201,076,318	201,076,318	4.61*	0.036
Error	65	2,836,147,010	43,633,031		
Total	66	3,037,223,329			

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev	--+-----+-----+-----+-----
0	41	6929	5,834	(-----*-----)
1 SBED	26	10,484	7,680	(-----*-----) +-----+-----+-----+----- 5000 7500 10000 12500

Table 12. All Source Wagering (HandleM) State Bred Event Day Versus Controls, 2009-2011 One-Way ANOVA.

Source	DF	SS	MS	F	P
SBED	1	4,247,936	4,247,936	0.17	0.685
Error	158	4,063,002,945	25,715,209		
Total	159	4,067,250,881			

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev	--+-----+-----+-----+-----
0	107	4046	5186	(-----*-----)
1 SBED	56	4286	4768	(-----*-----) -----+-----+-----+----- 3500 4200 4900 5600

Descriptive statistics (Table 13) were run to try and pinpoint possible discrepancies and consistencies in the full data set. The results show that the runners per race (Rnrs/Race) is pretty

consistent throughout the data set because the mean and median are very close numerically. However, Total PurseM, Open PurM, SBED PurM, Pop, Attendance, and On TrackM differ substantially between states as seen by the differing mean and median and the large standard deviations. The greatest difference in mean and median is evident in the population numbers, followed by attendance which is directly related to population surrounding the track. While the amounts differ by state, the same overall trend was realized. SBED across the country saw apparent higher average wagering, attendance, and purses than control days the week before and week after at the same race track.

Table 13. Descriptive Statistics for SBED Data Set 2009-2011.

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Rnrs/Race	163	0	8.4552	0.0907	1.1575	5.7800	7.57	8.580	9.300	10.9
Total PurseM	163	0	526.0	37.3	475.8	38.2	169.0	356.0	820	2232.0
Open PurM	163	0	245.8	21.8	278.8	0.0	72.7	169.0	289	1735
SBED PurM	163	0	280.3	35.6	455.1	0.0	0.0	0.0	530	2050
Attendance	68	95	8506	840	6926	532	3130	6116	11211	26694
Pop	163	0	642413	642413	1626856	426	1855	5920	19567	5663676
On TrackM	130	24	673	82.8	944.5	26.5	81.5	162.0	1076.3	3954.9

SBED average wagering is greater by simple average than on the control days in every state in the data set, but California (Table 14). California and New York experience the largest on average wagering amounts, followed by Florida. In terms of attendance in all reported instances, attendance on the SBED was greater than the control days. California and Minnesota have the two highest attendance numbers. Numerical average purses on SBED are larger than on the control days and this is apparent in the table with the largest purses being recorded in: New Mexico, West Virginia, Florida, and California. In the models described in the previous chapter, California and Florida have many event days, thus more data points for these states are included in the data set. It is also important to note that 1% of the total

average wagering is contributed by New Mexico while 26% is contributed by California and 24% from New York.

Table 14. State Average Values for Selected Variables in State Bred Event Day Sample for Selected Days.

Location	All Source Wagers (1,000)		Attendance		Purse (1,000)		Race Days		Runners/Race		Runners	
	SBED	Cont	SBED	Cont	SBED	Cont	SBED	Cont	SBED	Cont	SBED	Cont
CA (SA, Hol)	\$11,161	\$12,200	13,772	11,894	\$1,103	\$543	9	18	8.3	8.4	85	83
FL (CRC, GP)	\$8,256	\$7,149	8,960	6,580	\$1,331	\$502	6	12	9.0	8.9	101	95
IL (AP)	\$4,420	\$3,286	NR	NR	\$688	\$240	3	6	8.8	8.1	97	85
IA (PrM)	\$1,855	\$323	NR	NR	\$685	\$189	3	6	8.3	9.6	89	95
LA (EvD)	\$1,424	\$967	NR	NR	\$1,000	\$151	3	6	9.2	8.9	105	93
MD(LRL) ¹	\$2,267	\$1,015	21,989	2,889	\$1,110	\$193	3	6	8.8	8.1	100	80
MI(PNL)	\$93	\$62	NR	NR	\$281	\$80	2	4	7.9	6.7	72	60
MN (Cby)	\$701	\$380	10,267	5,978	\$417	\$122	3	3	7.3	6.5	79	53
NM (ZP)	\$654	\$246	2,542	1,096	\$1,910	\$236	3	6	10.1	8.2	112	93
NY (Aqu, Bel)	\$11,646	\$9,821	5,627	5,140	\$989	\$458	3	6	10.0	8.6	101	83
OH (Tdn)	\$690	\$393	n/a	NR	\$443	\$49	3	6	8.5	7.4	71	58
OK (RP)	\$165	\$77	NR	NR	\$847	\$173	3	6	9.1	9.8	92	94
PA (Prx)	\$1,449	\$1,592	NR	NR	\$1,012	\$688	3	6	8.8	7.5	123	81
TX (Hou) ¹	\$1,257	\$918	5,706	2,613	\$525	\$104	1	2	10.1	9.1	101	91

Notes: SBED= State Bred Event Day, Cont= Control raceday observations week before and after at the same track, same day of the week. ¹ Percentage of total purses taken when available.

On-Track Wagering Models

For the “On-Track Wagering Model”, four variations of the basic hypothesis were run to examine explanatory value of alternative specifications likely for SBED causative factors.

Table 15. Hypothesis Model SBED On-Track Wagering.

On TrackM = 668 - 108 Rnrs/Race + 0.650 Total Purse - 406 Dcond. + 1622 Dmajor + 101 dTrack + 0.100 PopM - 270 StBrD

Predictor	Coef	SE Coef	T	P	VIF
Constant	668.10	338.1	1.98*	0.05	
Rnrs/Race	-108.12	41.28	-2.62*	0.01	1.17
Total PurseM	0.6505	0.134	4.85*	0.00	1.94
Dcond.	-406.60	147.9	-2.75*	0.00	1.04
Dmajor	1622.3	248.6	6.53*	0.00	1.13
dTrack	101.00	236.4	0.43	0.67	1.22
PopM	0.1005	0.01	11.33*	0.00	1.39
SBED	-270.00	122.5	-2.20*	0.03	1.66

S = 512.362 R-Sq = 72.7% R-Sq(adj) = 71.1% D-W statistic = 1.43

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	7	83,297,565	11,899,652	45.33*	0.000
Residual Error	119	31,239,232	262,515		
Total	126	114,536,798			

Table 15 depicts the original hypothesized model including all variables and on track wagering as a left hand side variable. As seen in the table, all variables with the exception of dTrack were significant and showed no signs of multicollinearity, apparent in the low VIF numbers. However, in order to capture more of the variation in the model a second model was run with the separation of total purses into open purses and SBED purses (see Table 16). While the division of the purses did not hinder the model, the action did not improve the variation being explained. As depicted in Table 15, once again all variables with the exception of dTrack are significant; however, the percentage of variation explained by the models (R^2) has decreased by 1%. The model with normalized left hand side variable (On Track M/ PopM) (Table 17), aimed to do a better job at normalizing wagering by the population surrounding the

track in question. Surprisingly, this model did not perform as well as the original LHS variable used in the first on track wagering model. While variables such as purses, Dmajor, and population were significant as they have been throughout the modeling process, only 36% of the variation in the model is being explained.

Table 16. Modified Hypothesis Model SBED On-Track Wagering with modified purses.

On TrackM = 599 - 103 Rnrs/Race + 0.589 OpenPurM - 413 Dcond. + 1596 Dmajor + 90 dTrack + 0.10 PopM + 0.43 SBEDPurM

Predictor	Coef	SE Coef	T	P	VIF
Constant	599.90	348.6	1.72	0.08	
Rnrs/Race	-103.24	42.36	-2.44*	0.02	1.20
Open PurM	0.5898	0.18	3.34*	0.00	1.20
Dcond.	-413.60	150.7	-2.74*	0.01	1.04
Dmajor	1,596.3	253.9	6.29*	0.00	1.14
dTrack	90.600	241.8	0.37	0.71	1.23
PopM	0.1013	0.01	11.19*	0.00	1.41
SBEDPurM	0.4334	0.12	3.64*	0.00	1.28

S = 521.180 R-Sq = 71.8% R-Sq(adj) = 70.1% D-W statistic = 1.37

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	7	82,213,045	11,744,721	43.24*	0.000
Residual Error	119	32,323,753	271,628		
Total	126	114,536,798			

Best Fit Model

In the case of the wagering model, it was expected that there would be positive relationships between the purses offered and On-TrackM. It was also expected that more money wagered would be driven up on major national races days (*i.e.*, KY Derby, or Breeders Cup) occurred with interstate simulcasting event day location. When a change in track occurred (DTrack),¹⁰ it was expected that there will be a negative change in wagering because the audience at the new track will be different than the

¹⁰ DTrack recognizes a shifting race track venue, where either the week before or week after SBED the track operating in the city/local had changed. Racing shifts to a new location. This occurs with CA's Gold Rush (Hollywood Park) where wb is at Santa Anita (DTrack=1) and with the NY Showcase where depending on the dates racing wa shifted to Aqueduct (DTrack=1). One incident of shifting from Santa Anita to Hollywood Park occurred with respect to the Cal Cup (SBED in CA) when the wa racing shifted Hollywood Park (DTrack=1). The dates and tracks operating all are set well in advance and approved by state regulatory bodies.

previous track data. In the best fit model (Table 16) dTrack was positive but not significant meaning that changing to a another track had no substantial effect.

On- Track Wagering= $f(Rnrs/Race, OpenPurM, Dcond, Dmajor, dTrack, PopM, SBEDPurM)$ See also table 16

Table 17. Modified Hypothesis Model SBED On- Track Wagering/ Population with modified purses.

Wagering/Pop = 0.14 - 0.01 Rnrs/Race - 0.03 Dcond. + 0.13 Dmajor+ 0.03 dTrack + 0.00 OpenPurM + 0.00 SBEDPurM

Predictor	Coef	SE Coef	T	P	VIF
Constant	0.13901	0.03572	3.89*	0.00	
Rnrs/Race	-0.01108	0.00435	-2.55*	0.01	1.20
Dcond.	-0.02925	0.01530	-1.91*	0.05	1.02
Dmajor	0.13426	0.02535	5.30*	0.00	1.01
dTrack	0.03369	0.02290	1.47	0.14	1.05
OpenPurM	0.00007259	0.00001722	4.22*	0.00	1.08
SBEDPurM	0.00006880	0.00001204	5.72*	0.00	1.24

S = 0.0535246 R-Sq = 36.5% R-Sq(adj) = 33.3% D-W statistic = 1.33

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	6	0.1974	0.0329	11.48*	0.000
Residual Error	120	0.3438	0.0029		
Total	126	0.5411			

An increase in \$1,000 in open purses is associated with an increase in on-track wagering of \$589.80 while the same \$1,000 increase in SBED purses is associated with an increase in on-track wagering of \$433.40. The change in track (DTrack) when a SBED occurred at the beginning or the end of a meet, was associated with a non-significant increase in on-track wagering of \$90,600. A major race day (DMajor) was associated with an on-track wagering increase of nearly \$1.6 million. Perhaps one of the most crucial pieces of information gleamed from this model is that an increase in 1,000 people living in the surrounding area of a track is associated with an increase in on-track wagering of \$101.34. All variables in the full model experienced signs similar to the predicted outcomes.

An important finding to note that was discovered through the analysis process is that total purses per day (PurseM) and SBED were correlated but the VIF's¹¹ were low.

Table 18. On-Track Wagering Model Summary: Parameters (t Statistics) SBED 2009-2011.

Variable	A OTW	B OTW	C OTW/Pop	D OTW/Pop
Constant	668.10 (1.98*)	599.90 (1.72)	0.13901 (3.89*)	0.13823 (3.85*)
Rnrs/Race	-108.12 (-2.62*)	-103.24 (-2.44*)	-0.01108 (-2.55*)	-0.10831(-2.48*)
Total Purse	0.6505 (4.85*)			
Dcond	-406.60 (-2.75*)	-413.60 (-2.74*)	-0.02925 (-1.91)	-0.02820 (-1.84)
Dmajor	1,622.3 (6.53*)	1,596.3 (6.29*)	0.13426 (5.30*)	0.13152 (5.18*)
dTrack	101.00 (0.43)	90.600 (0.37)	0.03369 (1.47)	
PopM	0.1006 (11.33*)	0.1013 (11.19*)		
SBED	-270.00 (-2.20*)			
OpenPurM		0.5898 (3.34*)	0.00007 (4.22*)	0.00007 (4.43*)
SBEDPurM		0.4334 (3.64*)	0.00007 (5.72*)	0.00007 (5.55*)
Summary Statistics				
F	45.33*	43.24*	11.48*	13.22*
DW	1.43	1.37	1.32	1.29
R-sq	72.7%	71.8%	36.5%	35.3%
R-sq adj	71.1%	70.1%	33.3%	32.7%
K	7	7	6	5
df	119	119	120	121

Table 18 presents a summary of OnTrackM models . The models have R-sq ranging from 32% to 72%.

The best fit model appears to be Model B, a variation of the original hypothesis. Model B has one of the largest R² and shows and all variables with the exception of dTrack are significant. The low R-sq in the models C and D indicate that all the variability is not being accounted for. For this reason, regional models were designed later in the study to account for some of the variability not being captured in this on-track wagering model.

¹¹ Variance Inflation Factor (VIF) refers to the multicollinearity or relationship between like right hand side variables; however, none of the models displayed any substantial colinearity by VIF values.

Attendance Models

An attendance model reflects patrons attracted to the race cards. From prior research, it is assumed that the number of runners in a race would have an impact on the number of people in attendance. Conceptually, full fields make for improved wagering contests and create more “betting fan” interest. A basic model was run in which Rnrs/Race, Dmajor, dTrack, and Open PurM were significant, however, Rnrs/Race was negative, not the expected sign.

Purses were thought to be influential on attendance at the live racing site because with higher purses reflect or attract higher caliber horses racing and ultimately more people in attendance to see these better or “star” horses compete. The condition of the track is thought to have a negative¹² (1 if off track, 0 if else) (fast (dirt) and firm (turf)) association with good weather and the number of people in attendance at a race. Other major race days (DMajor) in the United States was a key player in the wagering model and it’s anticipated to be a strong influence in the attendance model as well. The change in track, DTrack (0 if track hosting the SBED, 1 if else), as discussed earlier is thought to be significant, but the sign is hard to determine because of factors such as local area population density and favorable locations, which could positively or negatively affect this variable.

In the final specification of the attendance model, Table 20, all variables besides Dcond and DNY were significant. The negative coefficient for Rnrs/ Race was not expected however, could be due to “star” horses discouraging lesser horses from competing. The model has improved from the initial model run (basic) because the R^2 has improved by about 21%. The Durbin-Watson statistic, used to detect autocorrelation, has also improved from the basic model to the final model.

¹² Fast and Firm racing surfaces have “good” footing resulting in better more consistent performances for most horses

Table 19. Hypothesis Model SBED Attendance.

Attendance = 24075 – 2477 Rnrs/Race – 3513 Dcond. +8776 Dmajor +6202 dTrack + 6.53 OpenPurM + 7.41 SBEDPurM

Predictor	Coef	SE Coef	T	P	VIF
Constant	24,075	5925	4.06*	0.00	
Rnrs/Race	-2,476.6	735.2	-3.37*	0.01	1.31
Dcond.	-3,513.0	2328	-1.51	0.14	1.02
Dmajor	8,776.0	3174	2.77*	0.01	1.13
dTrack	6,202.0	2569	2.41*	0.02	1.08
OpenPurM	6.5280	2.591	2.52*	0.01	1.19
SBEDPurM	7.4060	1.671	4.43*	0.00	1.48

S =5784.44 R-Sq = 33.9% R-Sq(adj) = 27.3% D-W statistic =1.83

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	6	1,029,637,759	171,606,293	5.13*	0.00
Residual Error	60	2,007,585,569	33,459,759		
Total	66	3,037,223,329			

Best Fit Attendance Model

A variation of the attendance model was run to determine whether SBED had higher attendance than their open race day counterparts. A subset of the original states was used because of the proprietary nature attendance data was not always reported. The states with in the sample with attendance reported were: California, Florida, Maryland, Minnesota, New Mexico, New York, and West Virginia.

Attendance= f (Rnrs/Race, Dcond, Dmajor, dTrack, DCA, DMD, DNY)
(see also Table 20)

The effect of DMajor was anticipated to be positive, thus such days would attract more people to a track as they had the opportunity to “play” the “major” races simulcast, and the regression indicated that when a local racing day coinciding with major national racing event (DMajor) that coincided with an on-track attendance of 9,290 patrons, a change which was well above those mean attendance of 8,506 patrons (see Table20).

Table 20. Modified Hypothesis Model SBED Attendance.

Attendance = 20319 – 2047 Rnrs/Race + 4.58 Total PurseM – 2291 Dcond. + 9290 Dmajor + 7050 dTrack + 5530 DCA + 14483 MD + 2148 DNY

Predictor	Coef	SE Coef	T	P	VIF
Constant	20,319	5,301	3.83*	0.00	
Rnrs/Race	-2,047.0	661.8	-3.09*	0.00	1.50
Total PurseM	4.5790	1.483	3.09*	0.00	1.62
Dcond.	-2,291.0	2,004	-1.14	0.26	1.06
Dmajor	9,290.0	2,666	3.48*	0.00	1.13
dTrack	7,050.0	2,135	3.30*	0.00	1.05
DCA	5,530.0	1,964	2.82*	0.01	1.27
DMD	14,483	3,005	4.82*	0.00	1.09
DNY	2148.0	3,081	0.70	0.49	1.15

S = 4865.47 R-Sq = 54.8% R-Sq(adj) = 48.6% D-W statistic = 1.66

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	8	1,664,200,908	208,025,114	8.79*	0.00
Residual Error	58	1,373,022,421	23,672,800		
Total	66	3,037,223,329			

While an expected coefficient or parameter sign for DTrack, was not found as the outcome was positive. An increase in attendance of 7,050 people was realized when racing moved from the SBED track to another the week before or week after. A state bred race day in California was associated with an increase of 5,530 people, similar to New York where the increase on SBED is 2,148 patrons. Maryland experienced an increase of 14,483 patrons on SBED as compared to open race day controls. Interestingly, Rnrs/Race has a negative coefficient, which is not what was anticipated, and indicates that when Rnrs/Race increases by one horse per race the attendance at tracks decreases by 2,047 people. While New York is not significant in the best fit model it was included because the R-sq is higher than in Model D meaning that New York is helping to explain some of the variability in the model.

Table 21 presents the various model specifications run when dealing with attendance. Variations of PurseM to open race purses (Open PurM) and state bred purses (SB PurM) were found to be better predictors than the SBED dummy variable across all models. This could be due to SBED's higher purses than other race days, and that influence is captured then in the PurseM variable.

All Handle Sources Model

The original data set included states that had to be eliminated when the decision was made to use On-Track wagering versus all sources. States were excluded from the model if isolated On-Track wagering was not reported. The states that were dropped from the On-Track wagering model included two years of Ohio data, and all Florida and Illinois data points. These states have prominent racing programs that could potentially affect results of the project significantly had they reported. Displayed in Table 22, a model was run with full wagering amounts to determine if the addition of these states changed the outcome of the previous models.

Table 21. Summary of Attendance Model Parameters (t Statistics) SBED 2009-2011.

Variables	A	B	C	D
Constant	24,075 (4.06*)	24,003 (4.01*)	20,319 (3.83*)	17,142 (2.99*)
Rnrs/Race	-2,476.6 (-3.37*)	-2,523.5 (-3.40*)	-2,047.0 (-3.09*)	-1,427.9 (-2.02*)
Total PurM			4.5790 (3.09*)	3.086 (1.88)
DCond.	-3,513.0 (-1.51)		-2,291.0 (-1.14)	
DMajor	8,776.0 (2.77*)	9,194.0 (2.88*)	9,290.0 (3.48*)	
DTrack	6,202.0 (2.41*)	5,973.0 (2.30*)	7,050.0 (3.30*)	
Open PurM	6.5280 (2.52*)	6.7650 (2.59*)		
SBED PurM	7.4060 (4.43*)	7.4810 (4.43*)		
DCA			5,530.0 (2.82*)	5,173.0 (2.35*)
DMD			14,483 (4.82*)	13,902 (4.10*)
DNY			2,148.0 (0.70)	
Summary Statistics				
F	5.13*	5.58*	8.79*	9.24*
DW	1.83	1.68	1.66	1.98
R-sq	33.9%	31.4%	54.8%	37.3%
R-sq adj	27.3%	25.8%	48.6%	33.3%
K	6	5	8	5
df	60	61	58	62

A base model was run with all states included in the data all sources full wagering amount (HandleM). As seen in Table 22, Open PurM, SBED PurM, Dmajor, and dTrack were significant variables while Rnrs/ Race was not. This model is not a perfect picture because the wagering is a culmination of

on- track, off- track, and satellite wagering. However, there are similarities to the on- track wagering model, except for the fact that a change in track positively affected wagering and was significant where as in the on-track wagering models dTrack did not have as prominent as a relationship with wagering.

Similar results were achieved when Rnrs/Race was taken out of the model as seen below.

Table 22. Hypothesis Model SBED All Sources Wagering.

HandleM = - 149 + 25 Rnrs/Race + 11 Open PurM + 3.48 SBED P M + 6914 Dmajor + 4983 dTrack

Predictor	Coef	SE Coef	T	P	VIF
Constant	-149.00	2,302	-0.06	0.95	
Rnrs/Race	25.100	284.5	0.09	0.93	1.20
Open PurM	10.980	1.27	8.68*	0.00	1.15
SBED PurM	3.4774	0.74	4.69*	0.00	1.25
Dmajor	6,914.0	1407	4.91*	0.00	1.05
DTrack	4,983.0	1605	3.10*	0.00	1.04

S = 3777.12 R-Sq =46.0 % R-Sq(adj) =44.2% D-W statistic = 1.51

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	5	1,870,185,872	374,037,174	26.22*	0.00
Residual Error	154	2,197,065,010	14,266,656		
Total	159	4,067,250,881			

Table 23. Modified Hypothesis Model SBED All Sources Wagering.

HandleM = 429 + 8.94 Open PurM + 3.37 SBED P M + 7170 Dmajor + 5543 dTrack

Predictor	Coef	SE Coef	T	P	VIF
Constant	49.100	490.20	0.10	0.92	
Open PurM	11.009	1.2180	9.04*	0.00	1.07
SBED PurM	3.5014	0.68820	5.09*	0.00	1.08
Dmajor	6,934.0	1,383.00	5.01*	0.00	1.03
Dtrack	4,981.0	1,600.00	3.11*	0.02	1.04

S =3765.01 R-Sq =46.0 % R-Sq(adj) =44.6 % D-W statistic = 1.50

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	4	1,870,075,044	467,518,761	32.98*	0.00
Residual Error	155	2,197,175,837	14,175,328		
Total	159	4,067,250,881			

All Handle Sources Model

The original data set included states that had to be eliminated when the decision was made to use On-Track wagering versus all sources. States were excluded from the model if isolated On-Track wagering was not reported. The states that were dropped from the On-Track wagering model included two years of Ohio data, and all Florida and Illinois data points. These states have prominent racing programs that could potentially affect results of the project significantly had they reported on track

wagering. Displayed in Table 22, a model was run with full wagering amounts to determine if the addition of these states changed the outcome of the previous models.

Table 24. All Wagering Sources All States Model 2009- 2011.

HandleM = - 4116 + 873 Rnrs/race + 116 Dcond. + 6478 Dmajor + 6844 dTrack+ 7985 DCA + 4465 DFL + 775 DIL - 1280 DIA - 2285 DLA - 2726 DMI - 1640 DMinn - 4117 DNM + 6932 DNY - 2655 DOH - 2802 DOK - 3448 DTX - 604 DWA - 3048 DWV - 1451 DMD - 2182 DPA

Predictor	Coef	SE Coef	T	VIF
Constant	-4,116.0	2,651.0	-1.55	
Rnrs/Race	873.40	315.80	2.77*	1.313
DCond	116.00	1,127.0	0.10	1.112
DMajor	6,478.0	1,520.0	4.26*	1.066
DTrack	6,844.0	1,712.0	4.00*	1.027
DCA	7,985.0	1,422.0	5.61*	1.043
DFL	4,465.0	1,732.0	2.58*	1.051
DIL	775.00	2,405.0	0.32	1.033
DIA	-1,280.0	2,385.0	-0.54	1.015
DLA	-2,285.0	2,395.0	-0.95	1.024
DMI	-2,726.0	2,907.0	-0.94	1.012
DMN	-1,640.0	2,401.0	-0.68	1.029
DNM	-4,117.0	2,459.0	-1.67	1.080
DNY	6,932.0	2,470.0	2.81*	1.089
DOH	-2,655.0	2,386.0	-1.11	1.017
DOK	-2,802.0	2,416.0	-1.16	1.042
DTX	-3,448.0	4,125.0	-0.84	1.025
DWA	-604.0	2,438.0	-0.25	1.061
DMD	-1,451.0	2,082.0	-0.70	1.025
DPA	-2,182.0	2,392.0	-0.91	1.022

S = 4061.44 R-Sq = 42.8% R-Sq(adj) = 34.8% D-W statistic = 1.650

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	20	1,755,859,003	87,792,950	5.32*	0.000
Residual Error	142	2,342,335,644	16,495,321		
Total	162	4,098,194,647			

All Wagering Sources All States Model

An all wagering sources all states model was run (Table 24) to determine the relationships between each state included in the all wagering model which differs from the on-track wagering model because the additional states such as Ohio, Florida, and Illinois were included. Interesting differences

between the on-track wagering model and the all sources wagering model should be noted. Rnrs/Race is now a significant variable where in the on-track wagering model it was not. DCond, which was expected to be negative (“fast tracks” attract more wagers than “off tracks”) is now positive, not significant. This change is probably due to other wagering sources beyond “on-track” captured in this model. As expected, DMajor, and DTrack are still positively related to wagering. SBED in California, Florida, Illinois, and New York (*i.e.*, D_{CA}, D_{NY}, and D_{FL}) were significant and positively related to wagering with California having the greatest increase in wagering due to SBED.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

State Bred Event Days (SBED) play a role in the interest of racing horse programs throughout the United States. These programs seek to enhance racing, breeding, and revenues in the individual states. The programs contribute economically to the overall racing industry, while the degree of contribution varies between states, overall SBED enhancing horse racing.

In California and New York, two states with prominent SBED programs, major increases in on-track wagering are seen as compared to the control race days. In California and New York, being a SBED is associated with an increase in on-track and all sources reported wagering, and attendance, as compared to “open race days”. In addition to the increases in wagering, SBED differentiate themselves from “open race days” with increased on track attendance, where reported.

Initially, it was believed that Rnrs/Race, PurseM, and SBED would all have a positive relationship on attendance, on-track wagering, and all sources wagering. However, differing coefficients were observed. Rnrs/Race had a negative coefficient in the on- track wagering model and a positive coefficient in the all sources handle model. When running the regional models, in some cases, PurseM and SBED had negative coefficients. When looking at the variance inflation factors of these variables, a correlation was drawn between the two. Purses are a proxy for SBED and this caused a discrepancy in

the sign. When PurseM was excluded from the regional models, the SBED variable had a positive coefficient once again.

Conclusions

While this study estimates the effects for various racing states depending on location and size of the program, the overall increase in attendance and wagering on SBED is apparent. In the overall On-Track wagering models run, California and New York were significant states, apparent by their high wagering amounts. These states displayed increases in On-Track wagering amounts when considered against the control observations (race days) the same day of the week before and week after the SBED.

The attendance responses show that overall increased attendance was seen on SBED and specifically in the states of California and New York. Runners per race, purse amount, condition of the track, and other major races occurring on the day have an effect on the number of patrons that come to the races.

States with prominent racing programs experienced increases in attendance and wagering from these SBED. Improvement in the state bred race programs in other states through: larger purses, greater state bred incentives, track conditions, and strategic timing of the races will ultimately help increase the wagering and attendance in other states included in the data set. The regional model results infer that each region is unique in what attracts people to wager and attend race days. Further recommendations are made to enhance the results of these regional models.

Recommendations

The results of this study should be viewed as an estimation of effects of state bred race days on the racing economy in the United States. The results from this modeling process are taken off of 2009-2011 numbers, a time when the United States economy was in an economic recession. Thus, results are highly dependent on the state of the general economy. With the upturn the economy is taking and notice of the economic benefit of race horses, if the study were to be re-conducted, impact would most likely increase and states other than those noted as significant could become key players in industry.

The methodology used in this study could be extended to more states and countries. To strengthen the validity of this study, more analysis could be done on the regional model. Research that would conclude what, within each region, causes the differentiation between SBED.

In conducting research and creating models for this study, there were a number of limitations. The data set was inclusive of a representative SBED for each state with a program. However, some states have multiple race days that were not all included in the model because data on these races was not available. Additionally, on-track wagering amounts were not available for all states within the data set, causing these states to be dropped out of the on-track wagering model. The data was taken over a three year time period; however, if this study was conducted again, the scope of the project could be expanded including more years of data.

Perhaps the most influential limitation in this study is that data was collected by the race track, and then reported to the government. This method of reporting data leaves room for error and states individual data is not collected in a uniform fashion. Thus, attendance and On-Track wagering were not available for some of the prominent states in this data set and had to be excluded from the models.

The data from this study can be used to further study individual states and key factors in the success or decline of their programs. The data was collected and aggregated but other variables can easily be added and tested in the same manner in which these models were conducted. Additional variables will help to explain the differentiation between states and ultimately could lead to the improvement of many programs throughout the United States.

In conclusion, regional models in this study aimed at exploring differences between the different geographical regions of the United States racing system. However, upon running these models conclusive results were not always reached. To improve the study, proximal locations should be used versus regions. For instance instead of using the whole Southwest Region, TX and OK could be used because of their proximal location to each other. A greater number of years of data might be collected and analyzed. If this method does not provide conclusive results, perhaps each state should be run as its own model to determine what the differences are in attracting patrons to come to the track and wager.

Data can be reanalyzed and the number of state bred horses and out of state horses running in each race could be recorded at high cost. This would help determine why the runners per race coefficient sign was negative and will also help determine the relationship between proximal states and these SBED programs.

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Appendix A. Sample Data Set State Bred Event Days and Control Observations, 2009-2011.

Date	Race	Rnrs/race	PurseM	OpenPurseM	SBEDPurM	HandleM	PopM (mill)	NormHanM	Attendance	On TrackM	NormOTM	Dcond.	SBED	Dmajor	dTrack
1/17/2009	CA Sunshine Million (wb)	8.6	\$618.00	\$618.00	\$0.00	\$11,828.69	12.83	\$0.922	10487	\$2,331.87	\$0.182	0	0	0	0
1/17/2009	FL Sunshine Million (wb)	10	\$423.50	\$423.50	\$0.00	\$9,019.43	5.56	\$1.621	N/R	N/A	N/A	0	0	0	0
1/24/2009	CA Sunshine Million	9.45	\$1,807.50	\$0.00	\$1,807.50	\$14,347.97	12.83	\$1.118	22155	\$2,987.43	\$0.233	0	1	0	0
1/24/2009	FL Sunshine Million	10.9	\$2,232.00	\$182.00	\$2,050.00	\$13,602.68	5.56	\$2.444	N/R	N/A	N/A	0	1	0	0
1/31/2009	CA Sunshine Million (wa)	8.4	\$587.00	\$587.00	\$0.00	\$12,187.68	12.83	\$0.950	8718	\$2,446.19	\$0.191	0	0	0	0
1/31/2009	FL Sunshine Million (wa)	10.6	\$930.00	\$930.00	\$0.00	\$13,816.48	5.56	\$2.483	N/R	N/A	N/A	0	0	0	0
4/18/2009	Gold Rush (wb) (santa anita)	7.4	\$524.00	\$524.00	\$0.00	\$12,309.34	12.83	\$0.960	22545	\$3,020.94	\$0.235	0	0	0	1
4/25/2009	Gold Rush	9.1	\$1,310.00	\$190.00	\$1,120.00	\$14,418.89	12.83	\$1.124	7693	\$2,075.06	\$0.162	0	1	0	0
5/2/2009	Gold Rush (wa)	9	\$447.00	\$447.00	\$0.00	\$22,539.27	12.83	\$1.757	13127	\$3,954.88	\$0.308	0	0	1	0
6/13/2009	IL Bred Day (wb)	7	\$290.50	\$290.50	\$0.00	\$3,454.30	9.46	\$0.365	N/R	N/A	N/A	0	0	0	0
6/20/2009	IL Bred Day	7.54	\$699.34	\$121.34	\$578.00	\$4,524.35	9.46	\$0.478	N/R	N/A	N/A	0	1	0	0
6/27/2009	Evd La Showcase Day (wb)	10	\$160.20	\$43.50	\$116.70	\$1,411.44	1.19	\$1.186	N/R	\$66.73	\$0.056	0	0	0	0
6/27/2009	IL Bred Day (wa)	9	\$261.00	\$222.00	\$39.00	\$4,783.66	9.46	\$0.506	N/R	N/A	N/A	0	0	0	0
7/4/2009	Evd La Showcase Day	8.8	\$969.53	\$0.00	\$969.53	\$2,128.01	1.19	\$1.788	N/R	\$149.60	\$0.126	0	1	0	0
7/11/2009	Evd La Showcase Day (wa)	10.1	\$159.50	\$96.10	\$63.40	\$1,314.23	1.19	\$1.105	N/R	\$77.24	\$0.065	0	0	0	0
8/22/2009	IA Classics (wb)	8.8	\$165.49	\$165.49	\$0.00	\$267.87	0.57	\$0.470	N/R	\$51.76	\$0.091	0	0	0	0
8/23/2009	Minn Championships (wb)	6.87	\$150.66	\$108.50	\$42.16	\$381.37	3.35	\$0.114	7563	\$238.85	\$0.071	0	0	0	0
8/29/2009	IA Classics	8.58	\$776.83	\$266.83	\$510.00	\$4,236.54	0.57	\$7.437	N/R	\$124.17	\$0.218	0	1	0	0
8/30/2009	Minn Championships	7.81	\$439.64	\$84.64	\$355.00	\$690.74	3.35	\$0.206	10351	\$427.78	\$0.128	0	1	0	0
9/5/2009	IA Classics (wa)	8.21	\$155.92	\$155.92	\$0.00	\$256.61	0.57	\$0.450	N/R	\$53.63	\$0.094	0	0	0	0
9/5/2009	Mich Event Day (wb)	6.12	\$138.40	\$138.40	\$0.00	\$74.49	0.43	\$0.175	N/R	\$33.97	\$0.080	0	0	0	0
9/6/2009	WA Cup Day (wb)	7.55	\$75.25	\$75.25	\$0.00	\$892.71	3.44	\$0.260	N/R	\$176.75	\$0.051	1	0	0	0
9/12/2009	Mich Event Day	7.77	\$237.30	\$37.30	\$200.00	\$114.76	0.43	\$0.270	N/R	\$37.89	\$0.089	0	1	0	0
9/12/2009	PHBA Day (wb-PPk)	5.78	\$271.37	\$271.37	\$0.00	\$610.95	5.97	\$0.102	N/R	\$62.56	\$0.010	1	0	0	0

Date	Race	Rnrs/race	PurseM	OpenPurseM	SBEDPurM	HandleM	PopM (mill)	NormHanM	Attendance	On TrackM	NormOTM	Dcond.	SBED	Dmajor	dTrack
9/13/2009	WA Cup Day	7.2	\$376.40	\$26.40	\$350.00	\$1,545.74	3.44	\$0.449	N/R	\$290.17	\$0.084	0	1	0	0
9/19/2009	MD Million (wb)	8.5	\$179.00	\$179.00	\$0.00	\$1,049.92	5.64	\$0.186	N/R	\$158.40	\$0.028	0	0	0	0
9/19/2009	Mich Event Day (wa)	6.2	\$61.70	\$61.70	\$0.00	\$79.94	0.43	\$0.188	N/R	\$38.77	\$0.091	0	0	0	0
9/19/2009	OK Classics Day (wb)	8.5	\$161.90	\$161.90	\$0.00	\$117.12	3.75	\$0.031	N/R	\$58.28	\$0.016	1	0	0	0
9/19/2009	PHBA Day (PPk)	9.75	\$1,131.00	\$356.00	\$775.00	\$1,668.07	5.97	\$0.280	N/R	\$173.34	\$0.029	0	1	0	0
9/20/2009	WA Cup Day (wa)	6.3	\$72.70	\$72.70	\$0.00	\$786.86	3.44	\$0.229	N/R	\$163.83	\$0.048	0	0	0	0
9/26/2009	MD Million	8.41	\$1,230.00	\$0.00	\$1,230.00	\$1,417.56	5.64	\$0.252	21625	\$592.46	\$0.105	0	1	0	0
9/26/2009	OK Classics Day	8.8	\$533.30	\$54.58	\$478.72	\$851.24	3.75	\$0.227	N/R	\$178.97	\$0.048	0	1	0	0
9/26/2009	PHBA Day (wa- PPk)	8.1	\$490.00	\$490.00	\$0.00	\$1,152.64	5.97	\$0.193	N/R	\$127.94	\$0.021	0	0	0	0
9/26/2009	Cal Cup Day (wb-fairplex)	10.1	\$292.00	\$292.00	\$0.00	\$7,813.38	12.83	\$0.609	5708	\$618.26	\$0.048	0	0	0	1
9/26/2009	Best of Ohio (wb)	8.37	\$53.40	\$53.40	\$0.00	\$461.31	2.08	\$0.222	N/R	N/A	N/A	0	0	0	0
10/3/2009	Cal Cup Day	6.9	\$962.00	\$12.00	\$950.00	\$9,938.86	12.83	\$0.775	17576	\$2,313.13	\$0.180	0	1	0	0
10/3/2009	MD Million (wa)	9.6	\$153.00	\$153.00	\$0.00	\$1,310.08	5.64	\$0.232		\$183.84	\$0.033	0	0	0	0
10/3/2009	OK Classics Day (wa)	10	\$134.08	\$134.08	\$0.00	\$765.13	3.75	\$0.204	N/R	\$58.68	\$0.016	0	0	0	0
10/3/2009	Best of Ohio	8.89	\$593.40	\$18.40	\$575.00	\$1,043.52	2.08	\$0.502	N/R	N/A	N/A	0	1	0	0
10/10/2009	Cal Cup Day (wa)	9	\$1,443.00	\$1,443.00	\$0.00	\$15,420.79	12.83	\$1.202	20329	\$2,740.23	\$0.214	0	0	0	0
10/10/2009	WV Breeders Classics (wb)	8.6	\$135.00	\$135.00	\$0.00	\$732.18	1.85	\$0.395	905	\$74.36	\$0.040	0	0	0	0
10/10/2009	Best of Ohio (wa)	7.75	\$50.60	\$50.60	\$0.00	\$534.91	2.08	\$0.258	N/R	N/A	N/A	1	0	0	0
10/17/2009	NY Showcase (wb)	7.4	\$336.20	\$336.20	\$0.00	\$7,627.38	19.57	\$0.390	3682	\$599.32	\$0.031	1	0	0	0
10/17/2009	WV Breeders Classic	9.44	\$1,874.00	\$0.00	\$1,874.00	\$1,166.14	1.85	\$0.629	3087	\$211.50	\$0.114	1	1	0	0
10/24/2009	NY Showcase	9.6	\$905.20	\$205.20	\$700.00	\$10,818.02	19.57	\$0.553	4180	\$916.57	\$0.047	1	1	0	0
10/24/2009	WV Breeders Classic (wa)	8.4	\$154.00	\$154.00	\$0.00	\$717.32	1.85	\$0.387	987	\$76.96	\$0.042	1	0	0	0
10/31/2009	NY Showcase (wa) (aqueduct)	8.8	\$544.00	\$544.00	\$0.00	\$10,303.62	19.57	\$0.527	3664	\$815.32	\$0.042	0	0	0	1
11/1/2009	NM Classics (wb)	8.18	\$198.09	\$198.09	\$0.00	\$264.66	1.52	\$0.174	1375	\$40.42	\$0.027	0	0	0	0
11/7/2009	FL Million (wb)	9.25	\$176.50	\$176.50	\$0.00	\$3,577.19	5.56	\$0.643	N/R	N/A	N/A	0	0	1	0

Date	Race	Rnrs/race	PurseM	OpenPurseM	SBEDPurM	HandleM	PopM (mill)	NormHanM	Attendance	On TrackM	NormOTM	Dcond.	SBED	Dmajor	dTrack
11/8/2009	NM Classic	9.63	\$1,935.00	\$855.00	\$1,080.00	\$548.70	1.52	\$0.361	2985	\$108.04	\$0.071	0	1	0	0
11/14/2009	FL Million	8.83	\$1,248.90	\$48.90	\$1,200.00	\$4,927.90	5.56	\$0.886	N/R	N/A	N/A	0	1	0	0
11/15/2009	NM Classic (wa)	9	\$207.09	\$207.09	\$0.00	\$250.07	1.52	\$0.165	1123	\$38.69	\$0.025	0	0	0	0
11/21/2009	FL Million (wa)	7.4	\$167.65	\$167.65	\$0.00	\$2,911.49	5.56	\$0.523	N/R	N/A	N/A	0	0	0	0
11/28/2009	TX Bred Day (wb)	10.2	\$75.00	\$75.00	\$0.00	\$930.57	5.92	\$0.157	N/R	\$98.24	\$0.017	0	0	0	0
12/5/2009	Texas Bred Day	10.1	\$525.00	\$25.00	\$500.00	\$1,257.04	5.92	\$0.212	N/R	\$160.19	\$0.027	0	1	0	0
12/12/2009	Texas Bred Day (wa)	8	\$133.85	\$133.85	\$0.00	\$905.38	5.92	\$0.153	N/R	\$93.44	\$0.016	1	0	0	0
1/23/2010	CA Sunshine Million (wb)	7.4	\$387.00	\$341.00	\$46.00	\$7,857.83	12.83	\$0.613	5709	\$1,469.13	\$0.115	0	0	0	0
1/23/2010	FL Sunshine Million (wb)	9.4	\$438.00	\$438.00	\$0.00	\$10,168.80	5.56	\$1.827	N/R	N/A	N/A	0	0	0	0
1/30/2010	CA Sunshine Million	9	\$1,262.00	\$262.00	\$1,000.00	\$14,189.01	12.83	\$1.106	21487	\$2,848.98	\$0.222	0	1	0	0
1/30/2010	FL Sunshine Million	9.3	\$1,064.00	\$264.00	\$800.00	\$13,947.95	5.56	\$2.507	N/R	N/A	N/A	0	1	0	0
2/6/2010	FL Sunshine Million (wa)	8.18	\$1,229.00	\$1,229.00	\$0.00	\$13,957.65	5.56	\$2.508	N/R	N/A	N/A	0	0	0	0
2/13/2010	CA Sunshine Million (wa)	7.6	\$1,061.00	\$1,061.00	\$0.00	\$12,552.06	12.83	\$0.978	10873	\$2,647.93	\$0.206	0	0	0	0
4/17/2010	Gold Rush (wb-santa anita)	6.9	\$473.00	\$473.00	\$0.00	\$10,724.49	12.83	\$0.836	17170	\$2,454.82	\$0.191	0	0	0	1
4/24/2010	Gold Rush	8.8	\$975.00	\$65.00	\$910.00	\$7,058.05	12.83	\$0.550	6067	\$1,527.07	\$0.119	0	1	0	0
5/1/2010	Gold Rush (wa)	8.9	\$406.20	\$406.20	\$0.00	\$19,383.83	12.83	\$1.511	11857	\$3,334.43	\$0.260	0	0	1	0
6/12/2010	IL Bred (wb)	8.6	\$173.50	\$173.50	\$0.00	\$2,742.57	9.46	\$0.290	N/R	N/A	N/A	0	0	0	0
6/19/2010	IL Bred	9.72	\$682.40	\$82.40	\$600.00	\$4,251.21	9.46	\$0.449	N/R	N/A	N/A	1	1	0	0
6/26/2010	Evd LA Showcase Day (wb)	9.1	\$140.50	\$140.50	\$0.00	\$407.47	1.19	\$0.342	N/R	\$66.73	\$0.056	0	0	0	0
6/26/2010	IL Bred (wa)	7.8	\$356.02	\$356.02	\$0.00	\$3,021.03	9.46	\$0.319	N/R	N/A	N/A	0	0	0	0
7/3/2010	Evd LA Showcase Day	9.08	\$992.90	\$110.50	\$882.40	\$545.66	1.19	\$0.459	N/R	\$179.40	\$0.151	0	1	0	0
7/10/2010	Evd LA Showcase Day (wa)	9	\$112.50	\$112.50	\$0.00	\$382.82	1.19	\$0.322	N/R	\$64.05	\$0.054	0	0	0	0
7/31/2010	IA Classic WB	9	\$200.00	\$71.54	\$128.46	\$417.72	0.57	\$0.733	N/R	\$60.09	\$0.105	0	0	0	0
8/7/2010	IA Classic	9.7	\$602.30	\$72.30	\$530.00	\$625.29	0.57	\$1.098	N/R	\$124.30	\$0.218	0	1	0	0
8/14/2010	IA Classic (wa)	9	\$173.85	\$173.85	\$0.00	\$147.35	0.57	\$0.259	N/R	\$44.40	\$0.078	0	0	0	0

Date	Race	Rnrs/race	PurseM	OpenPurseM	SBEDPurM	HandleM	PopM (mill)	NormHanM	Attendance	On TrackM	NormOTM	Dcond.	SBED	Dmajor	dTrack
8/22/2010	Minn Championships (wb)	6	\$119.27	\$119.27	\$0.00	\$335.50	3.35	\$0.100	5743	\$147.82	\$0.044	0	0	0	0
8/29/2010	Minn Championships	7.27	\$423.45	\$78.45	\$345.00	\$698.78	3.35	\$0.209	9237	\$314.39	\$0.094	0	1	0	0
9/4/2010	PHBA Cup (wb-Parx)	8.8	\$263.00	\$263.00	\$0.00	\$1,027.28	5.97	\$0.172	N/R	\$123.36	\$0.021	0	0	0	0
9/5/2010	WA Cup Day (wb)	6.1	\$83.00	\$83.00	\$0.00	\$923.71	3.44	\$0.269	N/R	\$176.85	\$0.051	0	0	0	0
9/11/2010	PHBA Cup Day (Parx)	8.8	\$1,030.00	\$0.00	\$1,030.00	\$1,020.76	5.97	\$0.171	N/R	\$133.87	\$0.022	0	1	0	0
9/12/2010	Washington Cup Day	7.1	\$277.10	\$27.10	\$250.00	\$1,186.46	3.44	\$0.345	N/R	\$229.54	\$0.067	0	1	0	0
9/18/2010	PHBACup (wa-Parx)	8	\$678.00	\$678.00	\$0.00	\$1,701.35	5.97	\$0.285	N/R	\$169.03	\$0.028	0	0	0	0
9/19/2010	WA Cup Day (wa)	6.5	\$85.60	\$85.60	\$0.00	\$749.42	3.44	\$0.218	N/R	\$149.76	\$0.044	0	0	0	0
9/25/2010	MD Million (wb)	8.3	\$219.00	\$219.00	\$0.00	\$845.46	5.64	\$0.150	N/R	\$130.64	\$0.023	0	0	0	0
9/25/2010	Best of Ohio (wb)	7.12	\$52.50	\$52.50	\$0.00	\$362.72	2.08	\$0.175	N/R	N/A	N/A	0	0	0	0
10/2/2010	MD Million	8.72	\$1,050.00	\$100.00	\$950.00	\$2,338.24	5.64	\$0.415	23367	\$521.13	\$0.092	0	1	0	0
10/2/2010	Best of Ohio	8.87	\$367.00	\$17.00	\$350.00	\$519.64	2.08	\$0.250	N/R	N/A	N/A	0	1	0	0
10/9/2010	MD Million (wa)	7.6	\$182.00	\$182.00	\$0.00	\$1,038.23	5.64	\$0.184	N/R	\$148.61	\$0.026	0	0	0	0
10/9/2010	Mich Event Day (wb)	7.33	\$58.10	\$58.10	\$0.00	\$46.37	0.43	\$0.109	N/R	\$26.85	\$0.063	0	0	0	0
10/9/2010	WV Breeders Classic (wb)	8.88	\$148.30	\$148.30	\$0.00	\$1,122.54	1.85	\$0.606	1065	\$84.24	\$0.045	0	0	0	0
10/9/2010	Best of Ohio (wa)	7.25	\$54.70	\$54.70	\$0.00	\$394.09	2.08	\$0.190	N/R	N/A	N/A	0	0	0	0
10/15/2010	OK Classic (wb)	10	\$170.40	\$170.40	\$0.00	\$1,122.54	3.75	\$0.299	N/R	\$84.30	\$0.022	0	0	0	0
10/16/2010	Mich Event Day	8.11	\$324.10	\$24.10	\$300.00	\$70.41	0.43	\$0.165	N/R	\$42.04	\$0.099	0	1	0	0
10/16/2010	NY Showcase (wb)	8.3	\$437.00	\$437.00	\$0.00	\$9,781.38	19.57	\$0.500	4592	\$835.17	\$0.043	0	0	0	0
10/16/2010	WV Breeders Classic	9.88	\$1,275.00	\$0.00	\$1,275.00	\$1,430.00	1.85	\$0.772	3110	\$171.80	\$0.093	0	1	0	0
10/22/2010	OK Classics	9.2	\$1,026.23	\$70.80	\$955.42	\$1,429.91	3.75	\$0.381	N/R	\$171.80	\$0.046	1	1	0	0
10/23/2010	MichEvent Day (wa)	7.44	\$62.90	\$62.90	\$0.00	\$45.72	0.43	\$0.107	N/R	\$26.48	\$0.062	0	0	0	0
10/23/2010	Cal Cup @ Hol (wb)	6	\$273.00	\$273.00	\$0.00	\$6,849.02	12.83	\$0.534	8879	\$1,113.12	\$0.087	0	0	0	0
10/23/2010	NY Showcase	10	\$1,032.00	\$132.00	\$900.00	\$12,338.52	19.57	\$0.631	5452	\$1,290.40	\$0.066	0	1	0	0
10/23/2010	WV Breeders Classic (wa)	9.11	\$137.20	\$137.20	\$0.00	\$840.83	1.85	\$0.454	1069	\$81.78	\$0.044	0	0	0	0

Date	Race	Rnrs/race	PurseM	OpenPurseM	SBEDPurM	HandleM	PopM (mill)	NormHanM	Attendance	On TrackM	NormOTM	Dcond.	SBED	Dmajor	dTrack
10/24/2010	NM Classics (wb)	8.54	\$242.65	\$242.65	\$0.00	\$199.25	1.52	\$0.131	1505	\$47.34	\$0.031	0	0	0	0
10/29/2010	OK Classics (wa)	10.9	\$197.60	\$197.60	\$0.00	\$1,056.99	3.75	\$0.282	N/R	\$92.19	\$0.025	0	0	0	0
10/30/2010	Cal Cup at Hol	7.2	\$820.00	\$120.00	\$700.00	\$9,344.89	12.83	\$0.728	6037	\$1,281.10	\$0.100	0	1	0	0
10/30/2010	NY Showcase (wa)	10.6	\$547.00	\$547.00	\$0.00	\$12,237.36	19.57	\$0.625	4178	\$1,064.06	\$0.054	0	0	0	0
10/31/2010	NM Classics	10.36	\$1,878.20	\$798.20	\$1,080.00	\$727.70	1.52	\$0.479	3190	\$115.15	\$0.076	0	1	0	0
11/6/2010	Cal Cup @Hol (wa)	9.3	\$347.00	\$347.00	\$0.00	\$16,431.40	12.83	\$1.281	7673	\$2,704.07	\$0.211	0	0	1	0
11/6/2010	FL Million (wb)	7.6	\$238.00	\$238.00	\$0.00	\$2,345.12	5.56	\$0.421	N/R	N/A	N/A	0	0	1	0
11/7/2010	NM Classics (wa)	8.81	\$239.40	\$239.40	\$0.00	\$279.88	1.52	\$0.184	1410	\$49.69	\$0.033	0	0	0	0
11/13/2010	FL Million	8	\$1,085.35	\$85.35	\$1,000.00	\$2,746.67	5.56	\$0.494	N/R	N/A	N/A	0	1	0	0
11/20/2010	FL Million (wa)	10	\$275.75	\$275.75	\$0.00	\$2,283.45	5.56	\$0.410	N/R	N/A	N/A	0	0	0	0
1/22/2011	CA Sunshine Millions (wb)	9.1	\$465.00	\$465.00	\$0.00	\$9,040.34	13.05	\$0.693	7385	\$1,747.21	\$0.134	0	0	0	0
1/22/2011	FL Sunshine Millions (wb)	8.8	\$421.00	\$421.00	\$0.00	\$8,288.33	5.76	\$1.438	6164	\$839.64	\$0.146	1	0	0	0
1/29/2011	CA Sunshine Millions	7.6	\$1,089.00	\$289.00	\$800.00	\$10,945.36	13.05	\$0.839	26694	\$2,786.92	\$0.214	0	1	0	0
1/29/2011	FL Sunshine Millions	9.63	\$1,285.00	\$285.00	\$1,000.00	\$11,676.75	5.76	\$2.026	8960	\$1,244.58	\$0.216	0	1	0	0
2/5/2011	CA Sunshine Million (wa)	8.4	\$795.00	\$795.00	\$0.00	\$12,256.63	13.05	\$0.939	17396	\$2,860.83	\$0.219	0	0	0	0
2/5/2011	FL Sunshine Millions (wa)	9.09	\$1,325.50	\$1,325.50	\$0.00	\$15,086.82	5.76	\$2.618	6996	\$1,180.58	\$0.205	0	0	0	0
4/16/2011	Gold Rush (wb) (santa Anita)	7.4	\$535.00	\$535.00	\$0.00	\$9,298.62	13.05	\$0.712	13427	\$2,224.01	\$0.170	0	0	0	1
4/23/2011	Gold Rush	8.6	\$883.00	\$218.00	\$665.00	\$11,453.80	13.05	\$0.877	5783	\$1,589.55	\$0.122	0	1	0	0
4/30/2011	Gold Rush (wa)	8.2	\$394.00	\$394.00	\$0.00	\$10,506.07	13.05	\$0.805	5012	\$1,370.89	\$0.105	0	0	0	0
6/18/2011	IL Bred Day (wb)	8.7	\$165.00	\$165.00	\$0.00	\$2,970.70	9.52	\$0.312	N/R	N/A	N/A	0	0	0	0
6/25/2011	Evd LA Showcase Day (wb)	8.9	\$165.50	\$165.50	\$0.00	\$1,160.63	1.23	\$0.946	N/R	\$64.37	\$0.052	0	0	0	0
6/25/2011	IL Bred Day	9.27	\$681.50	\$81.50	\$600.00	\$4,485.61	9.52	\$0.471	N/R	N/A	N/A	0	1	0	0
7/2/2011	Evd LA Showcase Day	9	\$1,038.80	\$240.80	\$798.00	\$1,598.37	1.23	\$1.303	N/R	\$159.68	\$0.130	0	1	0	0
7/2/2011	IL Bred Day (wa)	8	\$193.93	\$193.93	\$0.00	\$2,746.41	9.52	\$0.288	N/R	N/A	N/A	0	0	0	0
7/9/2011	Evd LA Showcase Day (wa)	8.6	\$169.00	\$169.00	\$0.00	\$1,123.54	1.23	\$0.916	N/R	\$63.51	\$0.052	0	0	0	0

Date	Race	Rnrs/race	PurseM	OpenPurseM	SBEDPurM	HandleM	PopM (mill)	NormHanM	Attendance	On TrackM	NormOTM	Dcond.	SBED	Dmajor	dTrack
7/30/2011	IA Classics (wb)	7.78	\$178.34	\$178.34	\$0.00	\$399.65	0.59	\$0.679	N/R	\$68.53	\$0.116	0	0	0	0
8/6/2011	IA Classics	6.63	\$677.13	\$147.13	\$530.00	\$704.32	0.59	\$1.196	N/R	\$124.06	\$0.211	0	1	0	0
8/13/2011	IA Classics (wa)	7.6	\$259.02	\$259.02	\$0.00	\$447.75	0.59	\$0.760	N/R	\$72.22	\$0.123	0	0	0	0
8/28/2011	Minn Championships (wb)	6.87	\$97.20	\$97.20	\$0.00	\$423.33	3.42	\$0.124	4628	\$138.90	\$0.041	0	0	0	0
9/3/2011	PHBA Cup (wb- Parx)	7.67	\$264.00	\$264.00	\$0.00	\$1,304.31	6.02	\$0.217	N/R	\$116.37	\$0.019	0	0	0	0
9/4/2011	Minn Championships	7.1	\$372.16	\$0.00	\$372.16	\$712.93	3.42	\$0.208	11214	\$370.11	\$0.108	0	1	0	0
9/10/2011	PHBA Cup (Parx)	7.58	\$829.50	\$0.00	\$829.50	\$1,657.38	6.02	\$0.275	N/R	\$157.73	\$0.026	0	1	0	0
9/11/2011	Minn Championships (wa)	10.11	\$141.90	\$141.90	\$0.00	\$386.13	3.42	\$0.113	4593	\$159.60	\$0.047	0	0	0	0
9/11/2011	WA Cup Day (wb)	7.1	\$73.50	\$73.50	\$0.00	\$1,187.95	3.55	\$0.334	N/R	\$116.37	\$0.033	0	0	0	0
9/17/2011	PHBA Cup (wa- Parx)	10.5	\$870.00	\$870.00	\$0.00	\$3,758.48	6.02	\$0.624	N/R	\$334.33	\$0.056	0	0	0	0
9/18/2011	WA Cup Day	5.9	\$246.30	\$20.30	\$226.00	\$1,499.66	3.55	\$0.422	N/R	\$151.73	\$0.043	1	1	0	0
9/24/2011	MD Million (wb)	7.1	\$203.00	\$203.00	\$0.00	\$869.30	5.86	\$0.148	N/R	N/A	N/A	0	0	0	0
9/25/2011	WA Cup Day (wa)	8.09	\$183.70	\$183.70	\$0.00	\$1,146.89	3.55	\$0.323	N/R	\$281.75	\$0.079	1	0	0	0
10/1/2011	MD Million	9.36	\$1,050.00	\$0.00	\$1,050.00	\$3,045.39	5.86	\$0.520	20907	N/A	N/A	0	1	0	0
10/8/2011	Best of Ohio (wb)	7.57	\$43.50	\$43.50	\$0.00	\$286.31	2.06	\$0.139	N/R	\$47.03	\$0.023	0	0	0	0
10/8/2011	WV Breeders Classic (wb)	8.55	\$161.00	\$161.00	\$0.00	\$1,730.11	1.86	\$0.933	1063	\$87.94	\$0.047	0	0	0	0
10/8/2011	MD Million (wa)	7.6	\$222.00	\$222.00	\$0.00	\$978.46	5.86	\$0.167	N/R	N/A	N/A	0	0	0	0
10/15/2011	Best of Ohio	7.87	\$368.60	\$18.60	\$350.00	\$505.95	2.06	\$0.245	N/R	\$82.68	\$0.040	0	1	0	0
10/15/2011	NY Showcase (wb)	7.1	\$514.24	\$514.24	\$0.00	\$9,099.60	19.83	\$0.459	5538	\$1,377.39	\$0.069	1	0	0	0
10/15/2011	WV Breeders Classic	9.88	\$1,345.00	\$0.00	\$1,345.00	\$1,431.28	1.86	\$0.772	3086	\$204.47	\$0.110	0	1	0	0
10/21/2011	OK Classics (wb)	9.9	\$183.16	\$183.16	\$0.00	\$989.69	3.81	\$0.259	N/R	\$90.04	\$0.024	0	0	0	0
10/22/2011	Best Of Ohio (wa)	6.62	\$38.20	\$38.20	\$0.00	\$318.09	2.06	\$0.154	N/R	\$60.42	\$0.029	0	0	0	0
10/22/2011	Cal Cup (wb)	9.4	\$362.00	\$362.00	\$0.00	\$8,128.67	13.05	\$0.623	11202	\$1,621.95	\$0.124	0	0	0	0
10/22/2011	NY Showcase	10.6	\$1,031.20	\$131.20	\$900.00	\$11,780.51	19.83	\$0.594	7250	\$2,061.39	\$0.104	0	1	0	0
10/22/2011	WV Breeders Classic (wa)	8.67	\$106.00	\$106.00	\$0.00	\$777.88	1.86	\$0.419	996	\$83.82	\$0.045	0	0	0	0

Date	Race	Rnrs/race	PurseM	OpenPurseM	SBEDPurM	HandleM	PopM (mill)	NormHanM	Attendance	On TrackM	NormOTM	Dcond.	SBED	Dmajor	dTrack
10/23/2011	NM Classics (wb)	7.75	\$271.10	\$271.10	\$0.00	\$219.28	1.52	\$0.144	631	\$52.38	\$0.034	0	0	0	0
10/28/2011	OK Classics	9.5	\$981.60	\$0.00	\$981.60	\$1,095.96	3.81	\$0.287	N/R	\$144.67	\$0.038	0	1	0	0
10/29/2011	Cal Cup	8.5	\$820.00	\$220.00	\$600.00	\$8,757.55	13.05	\$0.671	10457	\$1,754.61	\$0.134	0	1	0	0
10/30/2011	NM Classics	10.54	\$1,915.83	\$835.83	\$1,080.00	\$686.86	1.52	\$0.452	1452	\$120.63	\$0.079	0	1	0	0
11/4/2011	OK Classics (wa)	9.77	\$189.05	\$189.05	\$0.00	\$899.74	3.81	\$0.236	N/R	\$80.84	\$0.021	0	1	1	0
11/5/2011	Cal Cup (wa)	10.1	\$366.00	\$366.00	\$0.00	\$14,476.36	13.05	\$1.109	16598	\$3,203.91	\$0.245	0	0	1	0
11/5/2011	NY Showcase (wa-Aqu)	9.6	\$370.00	\$370.00	\$0.00	\$9,874.77	19.83	\$0.498	9187	\$1,265.36	\$0.064	1	1	0	1
11/5/2011	FL Million (wb)	8.5	\$216.95	\$216.95	\$0.00	\$2,487.57	5.76	\$0.432	N/R	N/A	N/A	0	0	1	0
11/6/2011	NM Classics (wa)	7.45	\$259.20	\$259.20	\$0.00	\$265.07	1.52	\$0.175	532	\$44.15	\$0.029	0	0	0	0
11/12/2011	FL Million	7.67	\$1,072.55	\$72.55	\$1,000.00	\$2,636.92	5.76	\$0.458	N/R	N/A	N/A	0	1	0	0
11/19/2011	FL Million (wa)	8.27	\$192.95	\$192.95	\$0.00	\$1,848.24	5.76	\$0.321	N/R	N/A	N/A	0	0	0	0