Handicapping questions **followed by body of the “Handicapping Paper”** on which questions are based. (These questions were required for students taking my course on the Economics of Thoroughbreds.)

1. The “takeout” at tracks is defined as the

 A. money that the track rakes off (keeps) from the money bet by bettors.

 B. profit that the track makes.

 C. percentage that a winning jockey gets from purses (s)he wins.

 D. return on investment that the typical bettor makes.

2. The takeout as a percentage is \_\_\_\_\_\_ in Kentucky than/(as) in most other states.

 A. higher B. the same C. lower

3. If the track returns all monies bet on horses to winning tickets and there is $10,000 bet on each of the five horses in a race, then a $10 win bet on the winning horse will return a total of

$\_\_\_\_\_.

4. The odds on the winning horse from the previous problem will have been listed at

 A. even money (1:1) B. 2:1 C. 3:1 D. 4:1 E. 5:1 F. 6:1 G. > 6:1

5. If the track from two questions previously returns only 80% of the total money bet to winners then the odds on the winning horse will be

 B. 2:1 C. 3:1 D. 4:1 E. 5:1 F. 6:1 G. > 6:1

6. The track returns a lower percentage of place and show pool money to bettors than win pool money because

 A. the percentage returned to place/show pool bettors is set at a lower number by the track

 B. tracks “round” payoffs down to even numbers ($2.10, $2.20, …$3.00, etc) and keep the

 money that would have been paid had the track NOT rounded down.

 C. jockeys get a fraction of the place and show pools.

7. “Exotic” bets at the track are generally defined as bets that

 A. combine more than one horse in determining the payoffs (an “exacta” for instance)

 B. are made by movie stars, dancers, and other public figures.

 C. pay off in non-monetary rewards such as trips to Hawaii.

8. $\_\_\_\_ Return to question 5 above. If you bet $2 on the winning horse you will receive back this amount.

9. $\_\_\_\_\_\_ If you “parlay” your winnings from the previous question on another winner at the same odds in the following race, you will then have this amount instead of the original $2.00.

10. $\_\_\_\_\_\_\_If the track provides a “daily double” bet that returns 80% of the money bet to bettors, and you hit the daily double by picking two consecutive winners when all the combinations (from two-five-horse fields) have equal amounts bet on them, you will have this amount instead of the original $2.00.

11.. In which case does the winning bettor do better, the question 9 or the question 10 scenario? Answer: the question no. \_\_\_\_ scenario. A. 9 B. 10

12. Tracks usually keep \_\_\_\_\_\_\_\_ percentage of the money bet on daily double, exacta, and trifecta bets than they do on straight win bets.

 A. a higher B. a lower C. the same

13. Alternative gaming (such as Indian slots, Atlantic City slots, and internet betting) can best be considered as a \_\_\_\_\_\_\_\_\_\_ good relative to racetrack betting.

 A. substitute B. complementary C. inferior

14. When competition increases for a particular product the normal business reaction is to\_\_\_\_\_\_ the price of that product. A. raise B. lower C. keep constant

15. Which of the following amounts to “raising” the effective price of pari-mutual betting?

 A. increasing the percentage of money retained by the track

 B. decreasing the percentage of money retained by the track

 C. lowering the price of parking, entry, and food at the track.

16. Rebates to bettors by internet wagering companies are a way to \_\_\_\_\_\_\_\_ the effective takeout from betting pools. A. lower B. raise

17. You have bet the long-shot in a race where there are three horses and the amounts bet are as follows: Fill in Odds1 for each horse if the track returns all money to bettors

 Horse Amount bet Odds1 Odds2

Fav $50,000 \_\_\_\_ \_\_\_\_\_

 Medi $40,000 \_\_\_\_ \_\_\_\_\_

 LongShot $10,000 \_\_\_\_ \_\_\_\_\_

18. Fill in Odds2 above if the track takes out $20,000 for itself and returns $80,000 to winners.

19. If the normal “long-shot” bias occurs at this track, we would expect that the the Fav horse is likely to win this \_\_\_\_\_\_ 50% of the time.

 A. more than B. approximately C. less than

20. If the normal long-shot bias occurs at this track and the takeout is as described in 18 above, the true odds that Fav will win the race are probably \_\_\_\_\_\_ Odds1, and \_\_\_\_Odds2.

 A. greater than reflected by …also greater than reflected by

 B. greater than reflected by …and less than reflected by

 C. less than reflected by …but greater than reflected by

 D.less than reflected by …also less than reflected by

21. If you are as astute handicapper, your odds of making money probably \_\_\_\_\_\_\_

 on big days such as the Ky Derby and Preakness.

 A. improve B. go down C. are unchanged

22. If you choose horses to bet by throwing darts at the racing form, your odds of making money probably \_\_\_\_\_\_\_ on big days such as the Ky Derby and Preakness.

 A. improve B. go down C. are unchanged

23. “Dr. Z’s” method for betting show pools assumes that the bettors who bet to win are

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_ bettors than those who prefer to bet to show.

 A. more astute B. more risk averse

C. less astute D. smaller dollar amount bettors

24. Using the Dr. Z method, if there are equal amounts bet to win on the five horses in a race, but horses A-D have attracted 25%, 24%, 23% and 22% of the show pool bets respectively, while horse E has the remainder bet on her, then Dr. Z would probably bet on Horse

 A B C D E

25. If you combine the long-shot bias theory with the Dr. Z method, you will look to make

 A. show bets on long-shots with a higher percentage bet on them to win than to show

 B. show bets on favorites with a higher percentage bet on them to win than to show

 C. win bets on long-shots with a higher percentage bet on them to win than to show

 B. win bets on favorites with a higher percentage bet on them to win than to show

26. A “bridge-jumper” is someone who

A. makes such a large bet on a horse to show that it causes (typically the show) pool to be larger than usual. B. has to jump a bridge to get to the windows in time to bet.

C. arbitrages (bridges) the win pool against another related pool (often the show pool)

D. bets one horse to win and another to place or show.

26A. Bridge-jumpers can possibly provide Dr. Z adherents with all but the following --the opportunity to A. bet more than one horse to show at favorable odds.

 B. bet in the win pool rather than the show pool.

 C. receive a higher payout for a show bet than for a place bet on the same horse.

 D. earn a 5% return on a horse that has 99% of the money bet on it.

27. Today a track with a 25% takeout on pick-six pools has a pick-6 carryover pool of $300,000. The track will pay out the winnings on this last date of the meet, and your research indicates that approximately $250,000 will be bet on the pick-six today. For each dollar bet into the pool today $\_\_\_\_\_\_ will be returned to winning bettors.

 A. less than $1 B. $1 C. between $1 and $2 D. $2 E. over $2

28. One can view the bonus pool represented by the carryover of $300,000 (see above) as \_\_\_\_\_\_\_\_\_ the effective takeout from the point of view of today’s bettors.

 A. increasing B. decreasing C. having no effect

29. Bettors usually bet \_\_\_\_\_\_\_\_ money when there are significant carryover pools for exotic bets. A. more B. less C. about the same

30. As compared to pace handicappers, “speed” handicappers are \_\_\_\_\_\_ likely to focus on the final time of the competitors’ previous races in comparison to how fast they ran early fractions.

 A. more B. less C. equally likely

31. “Pace” handicappers would be more likely to bet which of the following horses if their odds were equal? In a mile race horse \_\_\_\_\_\_ran the first half in \_\_\_\_\_ and the 2nd half in \_\_\_\_\_\_.

 A. A…50 seconds…50 seconds B. B…47 seconds…53 seconds

32. The Thorograph “sheets” provide relatively more information from which of the following handicapping perspectives? A. speed B. pace C. trip D. Dr. Z method

33. The Brisnet handicapping service provides all but which of the following “angles” that potentially helps a handicapper make a good choice?

 A. average winning distance of the foals by the sire and damsire of a runner

 B. winning % of the trainer and jockey

 C. winning % of the trainer for horses (s)he just claimed.

 D. money won on the turf reported separately from total money won by a runner.

 E. trainer comments on how his/her horse has been training.

**Handicapping Paper**

**The odds are against you (most of the time) when you bet on horses!**

 For each dollar you bet on win bets the track “takes out” (keeps)

 15-20% on win bets[[1]](#footnote-1)

 A slightly higher percentage on place & show bets (because of the “breakage”) [[2]](#footnote-2)

 >20% on combination (exotic) bets such as exactas, daily doubles, and the Pick 6

The money you bet is put into “pools” – win pools, place pools, show pools, exotic pools and the odds are calculated as follows:

Say that half of the money in the win pool is bet on “Sure Thing”

This means that if $10,000 is bet on Sure Thing then $10,000 is bet on the rest of the horses, and there will be $20,000 in the win pool. If the track take is 0 this would mean that if Sure Thing wins, bettors who bet on her would receive the whole $20,000 and a bettor on Sure Thing would have doubled his money. Sure Thing would have odds of “1:1,” which means that for each dollar bet on her bettors receive that dollar back plus another dollar that had been bet on another horse.

However, if the track “takeout” is 20%, then 20% x $20,000 = $4,000 will be retained by the track and if Sure Thing wins her backers will receive a total of $20,000 – the $4,000 takeout = $16,000. The total amount returned to Sure Things backers would be $16,000 (for $10,000 bet) and a $2 bet on Sure Thing would return $3.20. The odds quoted on the track on Sure Thing would be $1.20/$2.00 = .6:1, or 3 to 5.

**Why do Tracks Take Out a Higher Percentage of Exotic Bets?**

Let’s say that you plan to bet $20.00 on Sure Thing at 3:5 in the first race and the winnings from that bet on Win Again (also 3:5) in the second race. How much will you get back on this “***parlay***?”

If Sure Thing wins you will get back $3.20 per $2 bet, or $32 per $20 bet.

Betting the $36 on Win Again will net you (if Win Again wins at 4:5) $51.60.

This is calculated by assuming you bet the $32 winnings from Sure Thing on Win Again in

the second race, where the $32 buys 16 $2.00 tickets each paying $3.20. So the amount won will be 16 x $3.20 = $51.60.

The track could save you a trip to the betting window by letting you bet the $20.00 on a “daily double” ticket that paid off only when both Sure Thing and Win Again come in first in their respective races. As both horses were listed at 3:5, but had a likelihood of winning of 50% each (see an earlier paragraph where the takeout was 20%), then the true odds of the combination of Sure Thing and Win Again both winning are .5 x .5 = .25. Bettors should therefore bet ¼ of the daily double pool on the Sure Thing/Win Again combination. Let’s say that they bet $10,000 from a total pool of $40,000 on this daily double combination. Let’s see what return a bettor would receive from the same $20 bet we discussed above when we parlayed Sure Thing and Win Again.

If the track takes out 20% from the total pool of $40,000, this will leave $32,000 to go to winning bettors. The $10,000 bet on the ST/WA combination will return $32,000, a $10 bet will return $32, and a $20 bet will return $64. This is substantially better than the $51.60 a bettor could have garnered by parlaying his winnings from Race 1 to bet Win Again in Race 2.

**The Track Has Figured This Out**.

Seeing that the daily double bet provides a better return than the parlay, and noting the sure high demand for daily doubles by bettors wishing to bet two horses in successive races, the track increases the takeout on the daily double. Typically the higher takeout on the daily double pool will be such that it will not take away all the advantage of playing the daily double relative to parlaying. Hence we see takeouts of an extra 5, 6, or 7% for daily double, exacta, and other bets coupling two horses.

The logic of increasing the takeout for coupled wagers extends to every type of multiple wager, and the greater the number of horses that are coupled together in a single bet, the higher the takeout that bettors will be willing to absorb. For this reason we often see that tracks place the highest takeout on Pick 6 wagers, which utilize a larger number of horses (six) than any other bet (with the exception of the rare track that offers a pick 8 or pick 9).

**Rebates**

Two developments have conspired to cause some bet-takers to lower takeout. Internet betting companies can cover their costs on making bet services available while charging lower takeouts. What many of them do in light of their lower costs rather than pay back a larger percentage of money bet to all bettors is to favor large bettors by giving them rebates (based on a percentage of money wagered by an individual bettor).

The second major factor pushing bet-takers toward rebates (or lowering takeouts) is the increasing competition from alternative gaming. Slots and table games are increasingly available at more sites around the country each year, and the competition they create for the betting dollar pressures tracks to do what any other company is likely to do when faced with greater competition, and that is to lower prices. How does a track lower prices on its betting product? The answer is quite simple – lower takeout. Perhaps a particular track can temporarily fight the tide and keep takeout where it has been, but this author would argue that lower takeouts at tracks are both logical and inevitable.[[3]](#footnote-3)

**Anomalies and Betting Patterns That May Give You an Edge**

**Big-Day Inefficiencies**

One version of the “efficient market hypothesis,” which rates a chapter in most investment texts, argues that stock prices reflect all available public information, and thus that studying charts and reading information about stocks provides no significant advantage in finding “bargains.” Many financial analysts take this theory with a grain of salt, but agree that there are powerful forces that push stocks, especially large capitalization stocks such as GE, IBM, and Microsoft toward fair prices. These large cap stocks are closely followed by many analysts and the theory goes that the more analysts follow a stock the more efficiently it is priced.

Similarly it can be argued that horses that are followed by a large number of thoughtful handicappers are likely to be priced (have odds) that tend to be fair. Even when inside information (a hidden work or a horse for which the clocker has “slowed the horse down” in a work) is hidden from the public, a significant bet by the insider will tend to move the odds toward a fair price.

But, on **big days** such as the Derby, Preakness, or Breeder’s Cup, when the amounts of money bet on horses might be ten or twenty times normal, it can be argued that the following reasons tend to make the odds on horses less reflective of the true likelihood that a horse will win. These reasons are:

1) There are many more casual and relatively uninformed bettors on these days. These

bettors are often influenced by relatively unsophisticated articles in the popular press

that may move odds to illogical levels that are either too high or too low.

2) Both informed bettors and insiders represent a lower percentage of the bets made

on “big days,” which means that their bets affect the odds less than usual. Perhaps the

result is that the odds are thus determined more by unsophisticated bettors on these

days than by “smart money.”

 But even if we assume that “big day” odds are often out of line, how can a good handicappers turn this situation to his/her advantage. Rarely is there a simple way to gain an edge, even when a market is inefficiently priced. But there are a number of steps a good handicapper can take to improve his/her chances of coming out ahead. Certainly making the best use of available information, which is the essence of handicapping, is key. Before turning to the traditional tools of handicapping, let us consider a small number of the more esoteric aspects of handicapping that have roots in academic research.

**Some Anomalies and Strategies That Offer the Prospect of Improving a Handicapper’s Chances of Success**

The f**avorite/long-shot bias** Is a subject that has been well-researched by academics in many countries.[[4]](#footnote-4) The essence of the favorite/long shot bias is the proposition that bettors prefer to bet long-shots relative to favorites, with the result that the odds on favorites offer higher expected returns or (more realistically for most of us) lower expected losses than do the odds on long-shots. Said another way, while the expected loss on average for bettors equals the track take-out rate, the expected loss on favorites is less than the track take-out rate, and the expected loss on long-shots is greater than the track take-out. Said a third way, at a track where the take-out rate in the win pool is 18%, bets on favorites are likely to lose money only at about a 9-10% rate, while bets on long-shots are likely to lose money at approximately a 25% rate. A diagram of this appears as Diagram 1 below.

  **Diagram 1**

Odds 1/1 5/1 10/1 35/1

 -27%

R

E

T-18%

U

R

N

 - 9%

Take-out rate = 18%

Average loss rate based on odds

**Question:** What is the moral to the favorite/long-shot bias story?

**Answer:** If you want to lose less money, prefer to bet on horses with short odds.

**A Less Risky Approach to Winning Money at the Track, the Dr. Z Method for Show Betting**

 Dr. William Ziemba argues that there is more smart money in the win pool than in either the place or show pools, and that bettors in the place (and especially the show) pools should take note. The Dr. Z method looks for situations where there is a significantly lower percentage of money bet on a horse in the show pool than the win pool. Dr. Z develops a sophisticated algorithm that he suggests be used. My own (Rlosey’s) rule of thumb is that you ***don’t bet in the show pool unless the percentage bet on a horse in the show pool is less than half the percentage bet on the same horse in the win pool.***

 To use the simplest of examples, assume that each horse in a ten horse field has 10% of the win pool bet on it. Horses in post positions 3-10 each have 10% of the money from the show pool bet on it. But the PP1 horse has only 2% of the show pool bet on it, and the PP2 horse has 18% of the show pool bet on it**.**

**Question: What to do?**

**Answer:**

**An Extreme Case – A “Bridge-Jumper” Finds a “Sure Thing” in the Show Pool**

 Note the final pools from the print-out on the overhead. (These are not show here, but they showed that the favorite had 30% of the money in the show pool bet on it, while it had 95% of the money in the show pool bet on it). Bettors seemed to think that the favorite was sure to end up no worse than third. This betting pattern suggests that bettors may be overbetting the favorite to show. If it runs out of the money (4th or worse), the show pool payoffs will be very high as the show pool is allocated to runners that (in combination) had less than 5% of the show pool bet on them.

 Question 1: **What to do?**

 Question 2: **What happens if you get lucky?**

**Pick-Six Carryovers – Why Are They Popular?**

**The “pick-six” requires that bettors pick all six winners from six races in a row. If no one picks all six, then the money bet (less the track’s take-out) is carried over to the next day.**

Assume that it is the last day of a track’s meet and that the Pick Six Carryover is $1 million. Your research shows that bettors usually bet another $1 million the last day, and with a 25% take-out the final pool will be $1.75 million.

**Question: From your perspective, what is the take-out rate on a final-day bet?**

**Answer: For every $1.00 bet the last day, bettors will get back 75% of the money bet the last day plus 100% of the money carried over from the previous day, so there will be $1.75 returned to bettors per $1.00 bet, thus on average, the “take-out” is really a rebate of $1.00 from the previous day + the final-day bet returned for a net return of \_\_\_\_\_\_\_%.**

**Separate Pool Arbitrage (time permitting)**

**Picking Winners (Handicapping)**

The goal of bettors is to find a horse that is an “overlay,” where the term is defined to mean a horse that goes off at substantially higher odds than she should. Using “Sure Thing” as an example, let’s assume that her true chances of winning are 75% (she will win three times out of four) but that she goes off at 3:5 odds (thus paying $3.20 for a $2.00 ticket). If we can bet a series of overlays under these conditions, we will find that 75% of them should win, which means that the following will happen:

Expected return calculations

¼ of the time when we bet $2.00 we will end up with 0 .25 x $0 = 0

¾ of the time when we bet $2.00 we will end up with $3.20 .75 x $3.20 = 2.40

 Expected Return = $2.40

Thus a profit of $.40 on each $2.00 is expected (a 20% rate of return). This would be truly a marvelous result for a bettor. Most bettors would be pleased to profit at a much lower rate of return.

**Types of Handicapping “Styles”**

**Speed handicappers** focusprimarily on final times of a race and ask the question**: “Which horse can end up at the finish line in the fastest time?”** Not surprisingly, speed handicappers are usually sophisticated enough to understand that there is more to handicapping than just comparing the times that the horses running in a race have run. Andy Beyer, perhaps the most famous speed handicapper, makes adjustments in the times from past performances based on such things as the condition of the track and the speed of the track relative to other tracks. Beyer has gone beyond speed handicapping, and appreciates the “**Trip Handicappers**” who try to adjust for track conditions, wind, distance lost by going wide, weight carried, and more.

The **trip Handicappers** who are most well known are the publishers of the Thorograph and Fig “sheets.” In addition to adjusting for track conditions, wind, distance lost, and weight, they try to interpret the “form cycle,” discuss the possibility of a “bounce” by a horse that put out too much effort in a previous race, and they point out other factors, such as pace, being bothered, and lack of effort, that they think might affect a horse’s performance.

**Pace handicappers** are keenly attuned to the speed that horses run the early fractions of a race. They tend to employ the “burn out” theory that a horse that expends too much energy running fast early fractions will almost inevitably tire in the latter portions of a race and will not be able to beat a less talented horse that ran a more even pace. Hence they will give the horse that ran the early fractions extra “points” in the handicapping process when assessing such a horse’s chances of winning a later race.

**Angles**

 Bet a name, bet a color, bet a jockey, bet a trainer! The first two of these probably work no better than picking horses by throwing darts at the track program. But, maybe there is something to each of the latter. The best jockeys tend to get the best horses. Sometimes is seems obvious that the best jockey is on the best horse, but with first-time starters, how can it be obvious? Well, you can bet that trainers want to ride the best jockeys, and just as surely you can bet that jockey agents for the best jockeys play this to their advantages by asking trainers to put their jockeys on the best horses. Thus you can normally expect that a trainer putting a leading jockey on a first-time starter will usually have made some assurances that the jockey isn’t wasting time and risking injury for no good reason.

 Betting on a hot trainers is probably a less reliable way of getting a winner than betting on a hot jockey, but an evaluation of trainers can be very useful in making handicapping decisions as well. A classic case was that of Oscar Barrera, who emerged from obscurity to become a leading trainer in New York in 1982.[[5]](#footnote-5) Horses he claimed would regularly improve by ten lengths next time out, often within a week of being claimed. At one time his charges won eight of eight races in which he interred them. Barrera went from winning one or two races a month to leading trainer, and he maintained his lofty accomplishments for several years. But then the magic disappeared in 1988 when his horses lost 130 straight races, after which he never regained anything approaching his former form.

**Brisnet**

 The **Brisnet** past performances provide information on trainer angles and jockey angles, and a number of “angles” that are often useful as well. Brisnet provides both the jockeys’ and trainers’ success rates for the year, for the meet, and with particular levels of horses (alw, clmg, mclmg, first time starters, first time claims, etc.). They also report statistics on other foals by the same sire, on the dam of a runner’s other foals, and on the sire’s ability to produce successful runners on turf and on off tracks.

 **Brisnet** also provides speed and pace handicapping features.

Pace figures are provided for the first call (usually ¼ mile) and second call (usually ½ mile) and a “late pace” figure that provides a pace figure for the last part of a race.

Access Brisnet file on Moodle.

**Thorograph is one of two major Trip Handicapping Services (the other Trip Handicapping service is provided by Leny Ragozin that provides “Ragozin” Numbers)**

The Thorograph service ranks a horse (low numbers are better) based on the “adjusted” speed it ran a race. Adjustments are made for track condition (also called “track variant”--slow or fast), wind, lengths lost because a horse went wide, and weight carried. Thorograph also likes to consider whether a horse is likely to “bounce” because it expended a lot of effort in a previous race. However, this effect is NOT reflected directly in the numbers that Thorograph reports. Access Thorograph file on Moodle.

1. Takeout rates are often set by state regulators, though some states allow tracks latitude regarding takeout rates. Kentucky traditionally has had a lower takeout rate than other states, although Churchill Downs increased takeout rates in 2014. This was probably a logical business decision for bets made on the Kentucky Derby, where the elasticity of demand is low. Your author expects that bettors will eventually penalize Churchill Downs for the increased takeout rate as they adjust betting patterns and gradually migrate toward tracks with lower takeout rates. My colleague Richard Thalheimer has done considerable statistical analysis of the effect of takeout rates on betting patterns. [↑](#footnote-ref-1)
2. Payoffs on bets are always rounded to a multiple of either five or ten cents (this varies with the track), so a ticket on the favorite to win might pay as little as $2.05 (though some tracks pay higher minimums). But if the calculations suggest that there is $2.14 available to pay winning show tickets, the track will pay $2.10 instead, and will keep the $.04 difference (the “breakage”). Tickets with lower payoffs are affected more by the breakage. Other things equal, show (and place) tickets, which pay less than win tickets, will have higher effective takeouts because of the breakage. [↑](#footnote-ref-2)
3. Though few tracks have explicitly lowered takeout, my colleague Tim Capps points out that many have moved to lower prices implicitly by doing away with parking and admission fees and by providing free services and “frequent bettor” perks to their better customers. [↑](#footnote-ref-3)
4. For one of many possible references, see [*http://www.aeaweb.org/articles.php?doi*=*10.1257/mic.2.1.58*](http://www.aeaweb.org/articles.php?doi=10.1257/mic.2.1.58)Noise, Information, and the Favorite-Longshot Biasin Parimutuel Predictions, b*y* Marco Ottaviani and Peter Norman Sorensen\* *American Economic Journal: Microeconomics 2010, 2:1, 58–85.* [↑](#footnote-ref-4)
5. For more details see Andy Beyer’s article at http://articles.latimes.com/1991-04-11/sports/sp-221\_1\_oscar-barrera/3. [↑](#footnote-ref-5)