

Fallacies in an Expected Value Approach and Opportunities Present due to the Pari-Mutuel Nature of Markets

Any damn fool can see that a horse carrying a light weight with a wonderful win rate and a good post position, etc., etc., is way more likely to win than a horse with a terrible record and extra weight and so on and so on. But if you look at the damn odds, the bad horse pays 100 to 1, whereas the good horse pays 3 to 2. Then, it's not clear which is statistically the best bet using the mathematics of Fermat and Pascal. The prices have changed in such a way that it's very hard to beat the system. – Charlie Munger

When evaluating investment prospects, many of us talk of *margin of safety* or some variation on that theme. This can also be described as the market price relative to intrinsic value (for the specific security). Given the *pari-mutuel* nature of markets, odds are continually changing. Changes in risk/reward should compel a value investor, in these times, to consider the technicals and events that can weigh on and alter the odds. Identifying and valuing the opportunity is only part of the work. It is our position that there exist fallacies in margin of safety and expected value given the structure and nuance of markets, participants and myriad means of expressing long or short views. This creates opportunities for our method of modern age value investing, which we would describe as follows:

- Classically trained in deep value, bottom-up analysis
 - However, values the *entire* capital structure, not just debt or equity
 - Includes options and derivatives
 - Long *or short*, wherever the best risk-adjusted returns reside
- Actively trades, to take unsustainable gains, mitigate predictable hits to NAV
 - As opposed to buy and hold or averaging down as the “model is right and market is wrong”
- In these volatile markets, look for events – *Revaluation Catalysts*¹, that can move securities in a step-function change up or down
 - Valuation work is the “belt”, the *Revaluation Catalyst*, the “suspenders” in reducing volatility in the trade

Old School “Margin of Safety” and “Safe and Cheap” – No School Like the Old School



Ben Graham



Warren Buffett



Charlie Munger



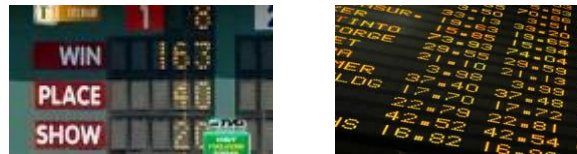
Marty Whitman

¹ See discussion of Tiburon's *Five Pronged Methodology*, referencing *Revaluation Catalysts*. Discussed in numerous places, but well-covered in this interview: <http://www.distressed-debt-investing.com/2009/09/exclusive-interview-with-hedge-fund.html>



Benjamin Graham, in his seminal book, *Securities Analysis*², suggests that a prospective investment enjoys a *margin of safety* when the company's securities are available in the market at a discount to its intrinsic value. Warren Buffett talks about finding "an outstanding company at a sensible price" rather than generic companies at a bargain price. And my old mentor, Marty Whitman, seeks "safe and cheap" - a company with a strong financial position trading at substantial discount to a private business or takeover value. Marty differs from Warren Buffett in that Marty has always said "everything's triple A at a price." We at Tiburon seek cheap or rich (long or short) on an intrinsic basis, with a plausible *Revaluation Catalyst* likely to drive the security to fair value in a step-function change.

The School Yard – A Pari-mutuel Betting Environment



Two pari-mutuel environments -the racetrack and equity markets – How different?

The market is essentially a pari-mutuel betting system. Pari-mutuel betting differs from fixed odds betting (casinos) in that the final payout is not determined until the pool is closed – in fixed odds betting, the payout is agreed at the time the bet is sold.

We posit that this market characteristic alters a static margin of safety approach in that *the market price of a security is impacted by other market participants*, buyers and sellers, and while a security may trade at a discount to intrinsic value, absent knowledge of other market participants' involvement, cost and price target, it may not be attractive relative to other like securities or be temporarily overvalued (or undervalued). Further, that "sound" value investments require a sense for *relative* margin of safety – that is, how are your odds changed by how crowded the trade is³? How often do a manager's forensics on why a position did not produce the anticipated returns have to lead to the black hole of technicals and other market participants before one wakes up to this dynamic?

Pari-Mutuel Betting - Some History

The origin of the pari-mutuel system lies in horserace betting. In 1865, a Frenchman named Pierre Oller, in reaction to losing too much of his own money to the bookmakers, developed a wagering system which dispensed with odds makers who used their judgment to decide how much a given wager should pay. He called his system "parier mutuel," meaning "mutuel stake" or "betting among ourselves." When the system was

² *Security Analysis* by Benjamin Graham. McGraw-Hill, 1996

³ Edge/Odds should always be considered in sizing positions. See our white paper, "Edge/Odds – The Kelly Formula and Maximizing Returns" http://tiburonholdings.net/uploads/Kelly_Formula_Letter.pdf. It's our view Edge/Odds be considered in determining intrinsic value as well.



adopted in England, it became known as “Paris mutuals” and then “pari-mutuels.” Nowadays pari-mutuel wagering is the accepted betting procedure at major horseracing tracks throughout the world. In these pari-mutuel gambling systems, if the horse chosen by an individual wins, then his investment yields returns (calculated through betting odds) that are decreasing with the proportion of bettors who have bet on the same horse. Besides, the proportion of the money in the win pool that is bet on any given horse is interpreted as the subjective probability that this horse will win the race and it corresponds to the *implicit price* of one unit of money bet. Theoretical and empirical studies in economics have investigated the features of pari-mutuel betting markets and have pointed out their particular relevance for the analysis of decision making regarding risk and market efficiency.⁴

There are several interesting implications of the pari-mutuel system. First, the exact payoffs for any bet are not known to anybody in advance. To estimate the payoff you will receive, you really have to know how other people are betting. For this reason, every fronton or racetrack has an electronic scoreboard or monitor which flashes the current odds for each possible wager. Many “professional” gamblers make a careful study of the odds board and place their bet *at the last possible minute*, investing in players/horses which seem undervalued by the rest of the betting population. Popular or “crowded” bets pay less, because there are relatively few punters leaning the other way; “uncrowded,” unpopular bets pay more, because more folks get caught out when the unexpected happens (and rain or shine, the house takes its cut.)

Like markets, commissions, slippage, and research costs represent the house take. Valuations are determined by public sentiment, as expressed by how much the public is willing to bet. The more the crowd likes something, the lower the odds of paying a reasonable price for it; “sure thing” bets are often lousy, because of the minimal reward in comparison to risk (ala *Munger*, opening quotation).

Value investors should understand this principle intuitively, though we believe few do. It's along the lines of what Benjamin Graham talked about when he said, “In the short run the stock market behaves like a voting machine, but in the long run it is a weighing machine.”

To beat any type of pari-mutuel system, a few key elements apply:

- 1) You must be able to identify ‘good bets,’ i.e. potentially mispriced situations, with a reasonable degree of accuracy.
- 2) Your methods must be profitable enough to overcome the “house take” (frictional costs).
- 3) Your skills must be competitive relative to other operators in your timeframe. (Predators tend not to eat each other, but often compete in terms of food source.)

⁴ See, for example, Anomalies, Parimutuel Betting Markets: Racetracks and Lotteries, Thaler and Ziemba, Journal of Economic Perspectives – Volume 2, Number 2 – spring, 1988 Pages 161-174.

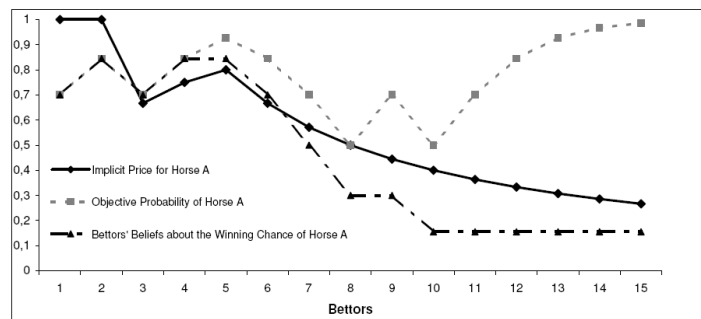


As a side note, some may argue that the stock market is not a true pari-mutuel system, because it is not a zero sum game. Over the long term, as and if more money flows in than out, where companies create value-add, and so on, it is theoretically possible for all market participants to profit. The desirable side of the bell curve has a limited number of seats. It is the bottom half of the class that makes the top half possible; without one you couldn't have the other. In a “winner takes all” or “winner takes most” type of game, the dynamic is even stronger. If 80% of the profit goes to 20% of the players, middle-of-the-pack results aren't worth the effort! Those who don't care about outperformance - the ones who could care less about beating their peers - are thus more likely to index than to bother playing the game. “Average” is attainable via passive strategies; those who participate actively, for the most part, are playing to win a top spot in the relative performance rankings. Therefore, when talking about the activity of trading and investing, it seems reasonable to move forward under the framework of zero sum.

Pari-mutuel Betting with Asymmetric Information Advantages

Since short-run herding and non-informative bets in general can arise, valuable information may be lost in the pari-mutuel betting market. In this respect, it seems likely that bandwagon effects in the betting odds can be created. Herd and contrarian behaviors (which are non-informative behaviors by definition) can lead to significant mispricing. While classical value investors might point out that herd or bandwagon effect in markets is really more behavioral investing or science, to simply dismiss this intellectually simplistic – it exists. To consider this, let's compare implicit prices set in the market represented by horses' *subjective probabilities* with objective probabilities.

Herding Investors Create Mispricing over Time



Source: Koessler and Ziegelmeier (Parimutuel Betting Under Asymmetrical Information)⁵

Given bandwagon effects and herding, it seems apparent that the mood and movement of other investors is an essential part of divining unique opportunities in skewed odds related to horses (or trades) in pari-mutuel systems, whether long or short.

⁵ Parimutuel Betting under Asymmetric Information, Frederic Koessler, Anthony Ziegelmeier, March 13, 2004. <http://papers.econ.mpg.de/esi/discussionpapers/2003-34.pdf>



Favorite-Long Shot Bias

The *favorite-long shot bias* is an observed phenomenon where on average, bettors tend to overvalue “long shots” and undervalue favorites. That is, in a horse race where one horse is given odds of 2-to-1, and another 100-to-1, the true odds might for example be 1.5-to-1 and 300-to-1 respectively. Betting on the “long shot” is therefore a much worse proposition than betting on the favorite. An explanation of this bias is based on late betting by small privately informed bettors. These bettors have an incentive to protect their private information and bet at the last minute, without knowing the bets simultaneously placed by the others. Once the distribution of bets is revealed, if bets are more informative than noisy, all bettors can recognize that the long shot is less likely to win than indicated by the distribution of bets. This seems akin to larger investors discretely building positions prior to required disclosures.

Two roads diverged in a wood, and I, I took the one less traveled by, and that has made all the difference. - Robert Frost

Advantages of Lesser-Followed Situations – Markets Differ from Pari-mutuel Betting Part 1



Index-Like Manager- Fewer Choices



Tiburon – Wealth of Choices

Unlike betting on horses, the financial markets offer myriad investment opportunities whereas each horse race is limited to a dozen or so horses. The mega *index-like manager* (multi-billion dollars to invest, and therefore, like the strategy’s index) that must participate in the largest trades in the largest company capital structures in order to put to work any meaningful amount of money, is like the bettor limited to the dozen or so horses. Their trades are invariably crowded and with a focus on the narrower field of horses, information edge and other advantages are limited or tenuous. We at Tiburon prefer liquid but lesser followed, under researched public companies as well as what we call “liquid mid-caps” - companies with \$200 – \$500 million debt capital structures (and ideally public equity). Liquid mid-caps have large enough balance sheets to be actively traded and liquid, yet are too small to move the needle on performance for the *index-like manager*. Such trades are less impacted by bandwagon effect, and if that does occur, our positions are usually already set. Then a nimble *Core Position Trading*⁶ ethos informs decisions related to the building, reducing or exiting a position.

⁶ See our white paper, “Active Core Position Trading as an Alpha Generator and Mitigator of Risk”
http://tiburonholdings.net/uploads/Active_Core_Position_Trading_as_an_Alpha_Generator_and_Mitigator_of_Risk_2_2_.pdf



Modifying or Exiting the Bet While the Race is On – Markets Differ from Pari-mutuel Betting Part 2

As we approach post time in a race or as the varied investors do their work and prepare to make an investment, the odds move. Once the bet is placed and the horses are off, you cannot exit that wager and walk away. You will win and make money or lose and lose it all. However, in markets, as the odds change, *you can choose to get out of your trade*. This is a significant distinction between the markets and pari-mutuel betting, however, few investors are agnostic enough about changed odds and outcomes to take money off the table. The beauty of markets is that you can win before the outcome or mitigate flawed decisions at any time during market hours. How many managers ignore near term events or technicals changing odds, exclaiming simply, “well it’s cheap” or “we are covered.” Why take *any* unnecessary hit? Lazy? Unwieldy asset size? Lack of trading acumen or conviction?



This manager will get run over

Let’s assume you bought ABC Corp at \$60 a share with the view that they are going to be bought for 8 times EBITDA for a price of \$80 a share, not later than 6 months from now. The sum-of-the parts of their business, gives you confidence regarding the intrinsic value of the company. Management has made statements that lead you to believe they would like to find a strategic acquirer. Competitors have made statements about growing through acquisition, etc. and so on. Let’s say two weeks after you put the position on, ABC Corp makes an announcement that they have “formed a special committee to pursue strategic initiatives” and the stock moves up to \$72 a share. Street research puts the target price at \$80 a share with a sale of the company not less than 6 months from now. There are two important issues to address in this development:

1. The odds have improved regarding the occurrence of your projected *Revaluation Catalyst*.
2. The markets and payout prospects are changing before your eyes like the odds board at the racetrack.

Regardless of what you actually do, you can:

1. Keep the trade on as is.
2. Increase the trade given the increased favorable odds.
3. Take some or all of the money off the table and sell some or all given the crowd coming in on better odds.



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4. Buy puts or sell calls (or vice versa).

This is the enormous luxury afforded astute investors, in a market that resembles a pari-mutuel betting environment yet allows you to alter your bets in ad infinitum.

Given the pari-mutuel nature of markets, odds are continually changing. Changes in risk/reward should compel a modern value investor, in these times, to consider the technicals and events that can weigh on and alter the odds. Fallacies exist in a margin of safety approach and expected value given the structure and nuance of markets. This creates opportunities for the modern age value investing adherent that actively trades core positions and is comfortable with the myriad ways to express a trading point of view.

Peter M. Lupoff

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