



Beating the Dealer with Passive Alpha

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Summary:

- ▶ Humans, and therefore investors, do not act rationally all the time under every circumstance. As a result, persistent behavioral biases exist which negatively impact investment returns over time.
 - ▶ This presents disciplined investors with an opportunity to reliably harvest "passive alpha" from simply avoiding the mistakes active managers make.
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If You Can't Beat the House, Be the House

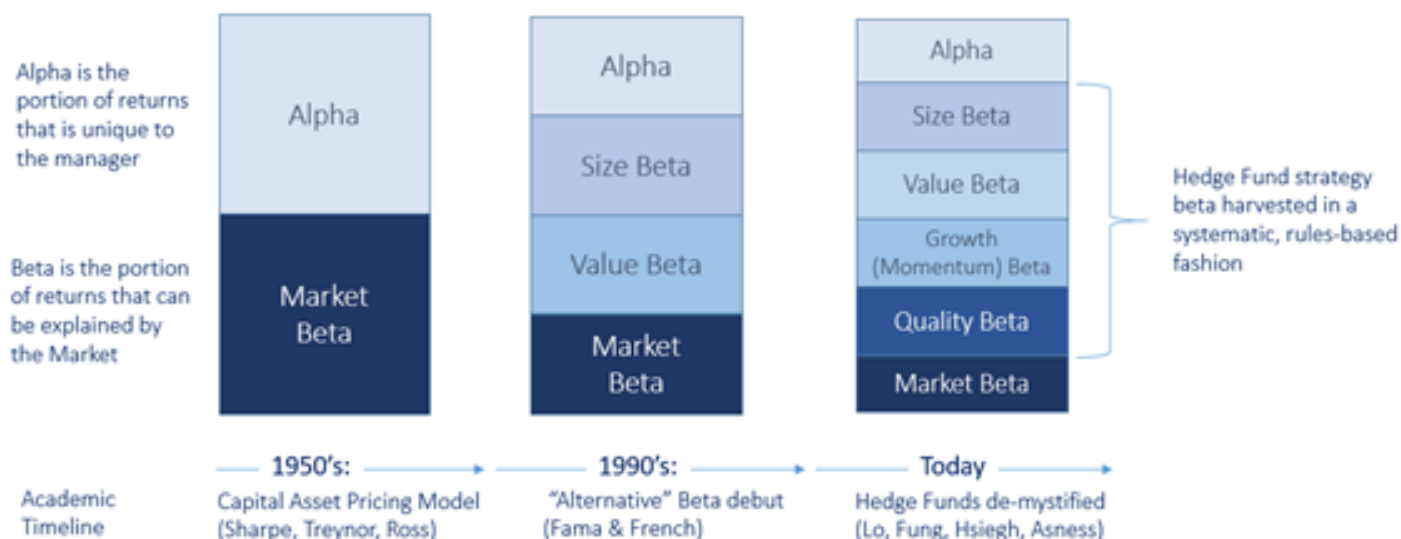
Over the years many people have likened the stock market (if not investing, per se) to a casino. While the roles that skill and chance play in each of those instances can differ substantially, it does provide for a useful analogy for thinking about the role of skill...or, for investors, *alpha*.

The notion of alpha in the investment management space is probably one of the most overused and incorrectly applied terms since Gauss published the theory of least squares in 1821. A dominant (r)evolution in the investment management industry in the last several decades has been the migration of (so-called) "alpha" into what is now known as "alternative beta."

In their seminal paper "The Cross Section of Expected Stock Returns," Eugene Fama and Kenneth French identified tilts towards value stocks and small stocks as the first two *alternatives* to the more traditional market beta as specified in the original Capital Asset Pricing Model. Today, the list of alternative beta factors has expanded to include several other systematic sources of return which are neither pure market beta nor idiosyncratic alpha.

This offers up the question: what is truly alpha and where can active managers find it?

Fig 1: Evolution of Alpha



What is Alpha?

Before addressing that question, it is first important to clarify one of the biggest misconceptions of alpha - which is that it is homogeneous.

Alternative betas, such as Value, Size or Momentum each represent relatively similar types of risks. The "Value" effect may be different and unique from Momentum, but each of these buckets represents a distinct risk with a distinct premium for investors willing to underwrite that risk. This is not the case with alpha. By definition, the idiosyncratic risk attributed to a particular manager (or style) is much more disparate. Alpha exists along a spectrum and is harder to define and more volatile than betas (either alternative or traditional). Therefore, there is no expected risk premium for alpha. For this reason, a useful starting point when thinking about alpha is considering the structural *source* of alpha before beginning any qualitative or quantitative analysis around its properties.

There are only three sources of alpha which are presented below as taken directly from Russell Fuller's *Behavioral Finance and the Sources of Alpha*:

1. **Superior (Private) Information:** *Most traditional investment managers try to generate a better information set. For example, they may try to generate a superior earnings forecast or better understand the economics underlying a particular industry's profitability. These types of managers are frequently referred to as traditional managers or fundamental managers.*

2. **Process Information Better:** *Some investment managers assume that most information is commonly available to all investors and focus their energy on trying to develop better procedures for processing this information. Managers that try to do this in a formal way are frequently called quantitative managers.*

3. **Behavioral Biases:** *Scholars in psychology and the decision making sciences have documented that in some circumstances investors do not try to maximize wealth and in other circumstances investors make systematic mental mistakes. Both of these cases can result in mispriced securities and both are the result of behavioral biases.*

Any alpha that a manager might demonstrate, *separate and distinct from the various alternative betas available in the marketplace*, will inherently derive from one of these three sources. What's interesting, is that the *structural* nature of these three edges is very different. Specifically, the third source of alpha is conceptually very different from the first two. The ability to capture better information or process information better is usually a function of some kind of technological advantage. The Rothschilds used carrier pigeons to send information of Napoleon's defeat a few weeks ahead of anyone else allowing them to buy assets at prices that had not yet reflected this *superior* information.^[1]

Fig 2: Pigeon Post Letter



[1] Pigeon post letter from 1846 https://www.rothschildarchive.org/contact/faqs/rothschilds_and_pigeon_post

If we fast-forward a few hundred years, high-speed cables have been built between New York and Chicago to transmit information a few milliseconds faster. Benjamin Graham (the "Grandfather of Value Investing") used to pay his graduate students to count people going into Woolworth's in an effort to collect superior information. Today, satellites accomplish the same task more broadly and efficiently. Consider even a traditional, active "bottoms-up" fundamental research fund. Twenty years ago, most of the analysts' time was spent collecting and working with reams of filings data. Everyone can picture the table of equity analysts with piles of printouts that they used to "screen" for their list of companies. Nowadays, all of that information is widely and freely available online at virtually no cost or effort - allowing anyone with a computer to run countless screens on thousands of stocks in a matter of minutes. In exactly the same way that access to a smart phone has become commoditized, so too have most of the informational and analytical sources of alpha. That certainly isn't to say they no longer exist -- they're just much more difficult to capture and sustain over time.

That leaves us with the third, and most unique, source of alpha which derives not from being faster or smarter than the next guy...just more disciplined. This may make it easy to understand but not necessarily easy to capture - as simply put by Warren Buffett: "Be fearful when others are greedy, and greedy when others are fearful."

Easy to say - more difficult to do.

An Investor and a Gambler Walk Into A Casino...

For well over a century, classical economic theory has assumed that investors (or "profit maximizing agents") acted rationally in all instances all the time. Anyone who's ever walked into a casino knows this isn't the case. Consider one of the oldest casino games, roulette, which has been wildly popular ever since Blaise Pascal accidentally invented it in his search for perpetual motion. There is no other game in which the house edge (which, in America, stands at 5.26%) is so readily apparent **and** the player's ability to apply skill is 0%.

So why would a rational person pay \$1 with the expectation of getting back \$0.95 in return (**and** no ability whatsoever to influence the outcome)?

The easiest answer, "for entertainment", doesn't explain the sheer numbers of folks actively trying to implement a *strategy* at the roulette table knowing the deck -- or wheel -- is stacked against them. This is simply because people continue to believe that "streaks" exist or tables can be "hot" or "cold". These beliefs encourage people to bet accordingly because they have any number of cognitive biases that:

- (i) exist in all humans
- (ii) are magnified when money is at stake.

Biases such as: overconfidence in one's abilities, believing more in recent history, focusing more on data that's easily available and believing more in data that confirms preconceived notions are just a handful of the tricks our brains pull that, while seemingly small individually, can compound into a large, persistent, detractor from investment performance over time.

To continue with our casino analogy, let's consider another game where a player can influence the outcome through skill: blackjack.

In fact, this analogy is quite appropriate considering one of the pioneers of using computers on Wall Street, Ed Thorp, wrote the book *Beat the Dealer* in 1962 which outlined how players could gain an edge at the blackjack table by counting cards.

Back in the 60's & 70's, this was a new idea and Thorp was able to use it to generate huge "alpha" but, like most sources of informational/analytical alpha, it became commoditized over time.

In fact, in this case, Thorp *himself* commoditized this edge by publishing it (under the name "Mr. X") which led to casinos banning the practice and, more effectively, eliminating it through technology (multiple decks and frequent reshuffling).

Fig 3: "Beat the Dealer"



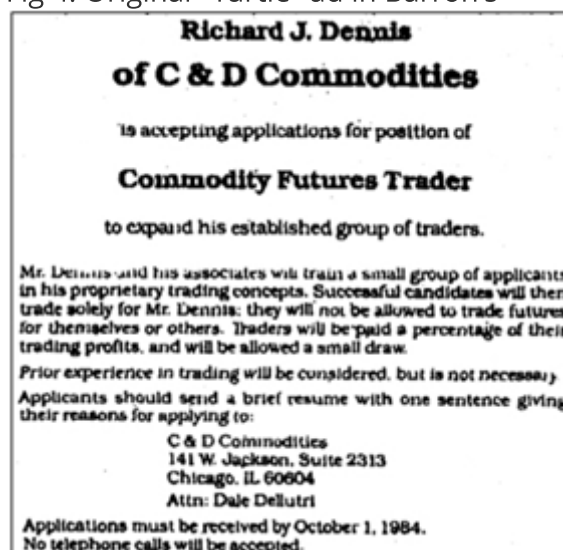
Still, for purposes of this exercise, let's consider that someone who reads this book and implements the strategy is able to extract a small but persistent edge over time (about 1%). An important point, however, is that this edge doesn't rely on a player's *unique* ability to apply it. Quite the contrary. Anyone who can count and has a decent memory can learn to apply this strategy successfully -so long as it's done in a systematic fashion. A player executing this strategy perfectly will experience a certain volatility in their bankroll (risk) but will receive an expected return over time (premium) much like an alternative beta.

This is very akin to a bet that the famous futures trader Richard Dennis made with his partner William Eckhardt that successful trading systems could be **taught to anyone**. In order to win the bet, Dennis put an ad in the back of Barron's in 1983 and recruited 21 men and women, from all walks of life, and taught them to trade his "turtle" trend following system^[1].

Again, the key was that this was a systematic, rules-based process. Had computers been more accessible in 1983, Dennis and Eckhardt might have bet whether or not this system could be programmed and executed without *any* human intervention.

The broader point is that, much of what was considered skill decades ago, be it at the blackjack tables or in the CME pit, was really just a set of rules designed to harvest a certain risk premium and would be considered today an "alternative beta".

Fig 4: Original "Turtle" ad in Barron's



Rise of the Machines and "Passive Alpha"

The heart of the active to passive migration is investors' realization that much of the perceived value of active management, upon closer inspection, was really just a certain set of rules designed to exploit a certain type of anomaly.

If most of the alpha that active managers provided has, in fact, "converted" into beta, investors are now rightfully wondering what is the value of having a *person*, rather than a *computer*, implement such a strategy? Does a human augment the system or detract from it? Interestingly, much of Richard Dennis' focus on his recruited "turtles" what emphasis on each trader's discipline to following the exact prescription as Dennis laid out and to resist the temptation to insert their own judgment. Similarly, one of the biggest problems professional blackjack players have is combating boredom at the table, resisting the urge to deviate from the strategy.

[2] Dennis called this group "turtles" after visiting a turtle farm in Singapore and determining that he could "grow" successful traders like turtles in a farm.

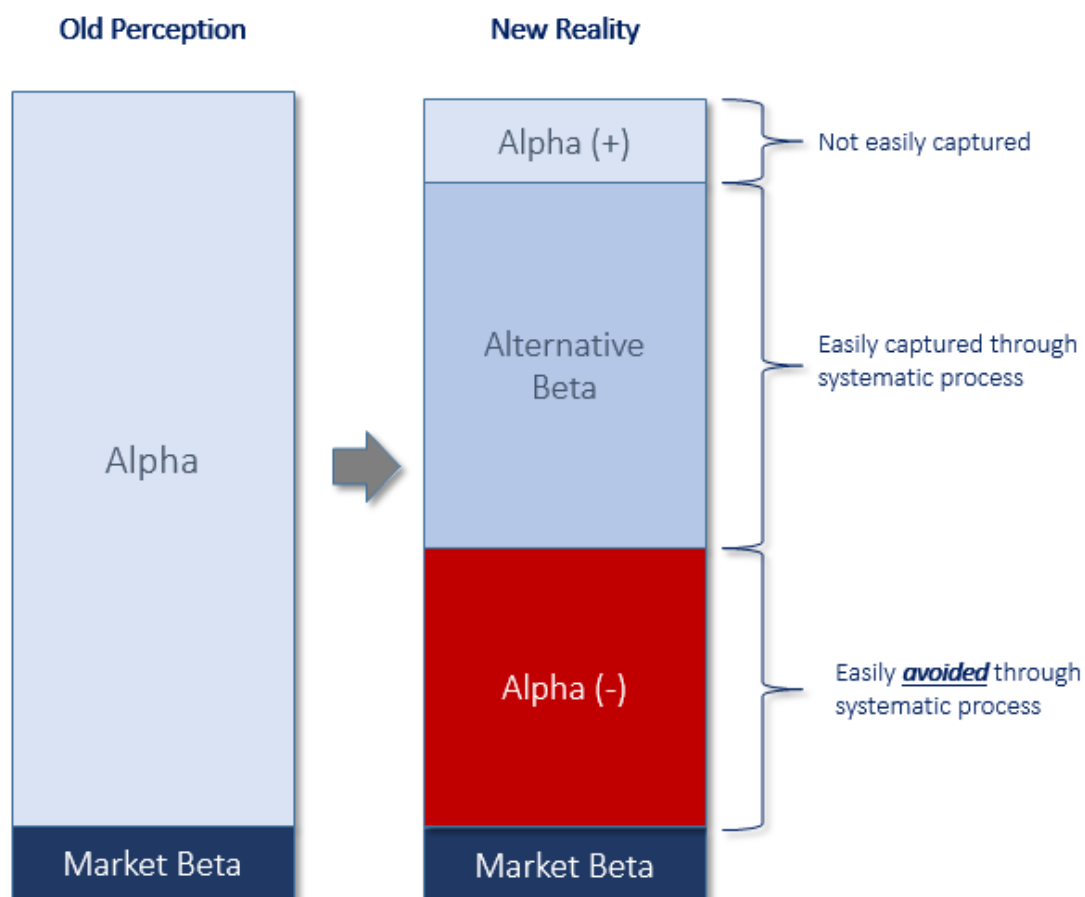
These various behavioral biases form the basis for the 3rd (and most unique) source of alpha available to investors which is, put simply: **avoiding behavioral biases**.

By using computers to systematically implement rules-based strategies, investors can reliably harvest various alternative betas while insulating their portfolios from the litany of behavioral costs that drag down performance over time. In this way, we can think of this third (an arguably most persistent) source of alpha as "**passive alpha**".

As information continues to be collected around active management during various market cycles, a picture begins to emerge in which much of what is *true* alpha is not so much an ability to add a unique source of return as it is the ability to avoid making mistakes that detract from returns.

The truth is, most alpha is negative and avoiding it is how investors win over time. This is even more true when the market is volatile. Nobel Prize winner Daniel Kahneman states in his book *Thinking, Fast and Slow* that the goal is to "learn to recognize situations in which mistakes are likely and try harder to avoid significant mistakes when the stakes are high."

Fig 5: Passive Alpha:



Conclusion

This is not to say, of course, that there is absolutely no role for humans on Wall Street or that there's no informational or analytical alpha available. It's just that there exists a robust, persistent source of alpha that derives from the "winning by not losing" school of thought. Be it in the form of a robo-adviser, an ETF or simply just forgetting about your portfolio^[3], by eliminating (or systematically controlling) the opportunity for and scope of active management, investors are taking a big-step towards harvesting passive alpha.



[3] An internal performance review of Fidelity accounts between 2003 and 2013 revealed that the best investors either died or switched jobs and forgot about their 401k accounts.

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