

Building a Better Hedge Fund

Using cognitive science to advance the business of alpha generation

After nearly thirty years in investment management, I've witnessed the best and worst this industry has to offer. Almost since day one, I have been afforded the great opportunity to take risk, to experiment with styles, instruments and methodologies, so that I may learn from my inevitable mistakes, as well as the occasional successes. Every step of the way, whether I was an advisor at Drexel Burnham, an exotics trader at Credit Suisse, head of currency options at Bank of America, running emerging markets at AIG International or directing a billion dollar hedge fund, the goal has always been to learn and improve. This paper is the result of the many lessons learned with heavy influence derived from studying and teaching cognitive science for almost 25 years.

What follows are simple adjustments that any firm can implement, but because much of it represents a fundamentally different approach to what has been considered standard operating procedure for decades, some aspects are likely to face great pushback. (I know this from first hand experience.) Ultimately, the goal of each and every facet is to create a business that maximizes the potential of its talent, and capitalizes on it.

Rather than fighting natural tendencies, the idea here is to use them as a force for good. It's based on the Taoist principal of yielding to an opponent's force in order to render it useless. It also shares many of the principles of the libertarian paternalism concept described by Sunstein and Thaler in their book, *Nudge*. The libertarian aspect "makes it easy for people to go their own way; to not burden those who want to exercise their freedom." Combine this with paternalistic policies which "try to influence choices in a way that will make choosers better off, as judged by themselves," and you create an environment which is a breeding ground for intelligent, independent decision making.

Create a breeding ground
for intelligent, independent
decision making.

The intention is for the business, and every one of its components, to shift from being reactive to proactive. With the approach described in the following paper, decision makers at every level are bound to the results of their own decisions, making the business a true meritocracy, from top to bottom. By augmenting reactionary risk management techniques such as speed bumps and tight stops with more proactive concepts, style drift and other issues in need of attention can be identified *before* they become an issue.

It is my hope that this piece will trigger discussion and debate. It certainly did when it was first implemented as, *The Experiment*.

Stephen Duneier
CEO, Bija Advisors LLC

PHILOSOPHY

While reactive decision making is about removing pain, proactive decision making is about removing the opportunity for pain to exist in the first place. I believe that a proactive, methodical approach to running a hedge fund, results in increased alpha generation on a more consistent basis and enables a more scalable, sustainable business model.

OVERVIEW

Potential

A hedge fund is a collection of individuals, each of whom has a particular potential in a given environment. The more conducive the environment is for their skill set, the greater their potential. The total potential for a set of individuals is simply the sum of each, given their respective environments.

The business' potential is a function of the skills of its people and the group's ability to create the optimal environment for them.

Brought together, these individuals form a group which creates a unique environment that determines the potential for the whole. If it is a poor environment for each person's skill set, the group's potential can actually be smaller than the sum of its parts. However, given the right environment, one that is deliberately designed with the sole purpose of maximizing the potential for each player, the group's potential will be significantly greater. Therefore, the business' potential is a function of the skills of its people and the group's ability to create the optimal environment for them.

Reactive vs Proactive Decision Making

The reactive method focuses on immediate relief from pain. The more intense the pain, the more myopic a sufferer becomes, unwittingly sacrificing long term health for instant gratification. The result is impulsive choices based on gut feel with little consideration for the unintended consequences. While quick, decisive action is initially seen by many as a sign of strong leadership, upon thoughtful reflection, it is the impulsive decisions made under duress which are often at fault for compounding the resulting pain. Therefore, the goal is to think ahead, to prepare for the inevitable moments of stress, and euphoria, so decision makers can maintain objectivity and balance throughout.

Optimizing the Organization

Each specialist has his strengths and weaknesses. Each does well in a different environment. Each defines and deals with success and failure differently. Each comes with his own set of experiences and resultant biases and prejudices. Typically organizations don't break down their core competency into specialties until they become too unwieldy to be managed by a single individual. At that point, economies of scale are gained, but a holistic approach is sacrificed. It becomes a bureaucracy where it is difficult for anyone to see the forest for the trees, for the organization becomes an amalgamation of troops on the ground, fighting in the trenches. Each unit does its job well when judged according to its own limited criterion, indifferent to its impact on the whole. Even top management is judged and rewarded according to limited criterion - short term profitability and the absence of pain.

Each specialist and manager takes credit for his contribution and to the overall success, but denies his role in the failure of either. It's human nature. Even those who fall on the sword tend to do so merely by admitting they didn't do enough to protect the organization from the shortcomings of another.

It's no wonder bureaucracies are characterized as bastions of politics over intelligence, firefighting over innovation, being reactive rather than visionary. It's no surprise that success within a bureaucracy requires a different skill set than that required in a startup. Entrepreneurs who successfully launch startups typically cede control once the organization grows to the point where the internal dynamics shift and his skill set is no longer optimal. The same holds for the reverse, and would explain why it is that CEO types rarely launch successful startups.

Startups are typically launched with one strong, incredibly passionate individual leading the business through the challenging startup phase, sacrificing economies of scale via delegation, for control of a singular purpose. Outsourcing of accounting, legal, technology, even human resources is common, resulting in these tasks getting done, but not necessarily done well. The reason so many startups fail is that the leader is unwilling to yield control, even to those who are more capable. The desire for self-preservation supersedes that of the organization. In other words, ego trumps all. The result is often an individual who has been proven successful at one thing and in one environment, inaccurately assessing his skill set, falsely crediting himself with a talent he doesn't possess and the organization suffering for it.

Again, everyone has his own strengths and weaknesses, talents and shortcomings. An organization is not merely the sum total of those possessed by its individuals, it is defined by the myriad of interactions among them and with their environment. In other words, the organization is a living, breathing organism. It has an inherent potential which can be realized, or squandered.

The organization is a living, breathing organism.

Just as it was possible for the natural gifts of generations of minority athletes to go untapped by the sporting world, so too can an organization suffer for its inability to see beyond its biases and remove its ego, impacting its ability to accurately assess its talent pool, thereby limiting its own potential.

In order for a business to improve its odds of success, it must be proactive; deliberate in every aspect of its business. While it may be fatiguing to think through every decision, to consider not just the immediate effects, but the possible unintended consequences that can do even greater damage in the future, it's the difference between being a business bogged down by firefighting and one characterized for its innovation. What works for a bureaucracy doesn't necessarily work for a startup and what works for a one man startup doesn't necessarily work for a top heavy partnership. That goes for specific decisions, but also how strengths and weaknesses are actually defined, and that has a direct impact on how skills of the individual, and the organization, are assessed. The better an organization is able to assess the abilities of its people, particularly as they relate to the environment, while removing ego driven defenses, so as to optimally deploy its resources, the greater its potential and the greater the likelihood of achieving it.

Making Decisions Less Emotional

Before you should even contemplate making a decision, it is vital that you first understand what it is you are solving for. You can't find the optimal solution, if you don't understand what the problem is. The key

By making the decisions tiny, they become more mechanical, i.e. less emotional.

is to continuously distill the problem down until you get to its core components. The more defined a decision is, the less complex it is and the easier it is to make the right choice. By starting from the top and distilling down, you ensure that all those tiny decisions are consistent with and working toward solving the bigger issues. You have a holistic plan that results from millions of seemingly independent tiny decisions, yet are deliberately interdependent. By making the decisions tiny, they become more mechanical, i.e. less emotional. This philosophy is at the heart of everything that follows.

ALLOCATING TO ABILITY

Managing Partner

The managing partner's function is simple. (1) Bring in people who are, at a minimum, net positive contributors to the collective potential. (2) Create an environment for maximizing the utility of each function's potential. That's it.

In effect, the managing partner's role is similar to that of a baseball team's General Manager. He can't pick which teams he plays, which games are home or away, what the weather will be like or even how much money he has to play with. He can't hit the ball himself, make a guy hit home runs, decide what pitch to throw or who to field on a given night, but he can provide the best mix of talent and the optimal environment for all those other decisions to be made. It's not simply about paying the most or even getting the player with the best skill set for each position. He has to bring together the right combination of players and optimize the environment for maximum performance of the group.

Bottom line: As managing partner, the job is simply to bring the best group together and then remove all obstacles, so the firm can achieve its maximum potential.

Partnership Committee

The Partnership Committee's (PC) job is to ensure business continuity. Accounting, legal, compliance, cash management, human resources, office management, back office operations, valuations, risk reporting, investor relations and marketing all fall under the PC's domain. It's important to note that the investment side of the business does *not* fall under the umbrella of the PC, however by performing its function properly, the Partnership Committee is protecting the sanctity of the firm's investment process, removing all obstacles so the Investment Committee can achieve its maximum potential.

Investment Committee (& CIO)

The Investment Committee's¹ purpose is to maximize the potential for the investment team as a whole. By setting risk limits, determining which asset classes, instruments, and styles are approved for portfolio manager use, mandating specific procedures such as trade write-ups, and allocating capital, the IC protects the sanctity of the PM's individual investment process. The IC is charged with removing all obstacles, so the portfolio managers can each achieve their maximum potential.

Imagine you bring in Derek Jeter to be your shortstop. You do so because he has a track record of performance excellence in that position. He might hit a slump, but he has been there before and came

¹ The IC's role can interchangeable or distinct from that of a CIO.

back. Your job is to make sure the problem isn't physical this time (read: structural), which would mean although he still looks and sounds like Derek Jeter, for your purposes, he is now a completely different person. If it's not structural, your job is to help him get back to his old form, whether it means bringing in an old hitting coach, a psychiatrist or a masseuse. You wouldn't tell him to try football instead, tell him he only has 2 strikes before you remove him from the batter's box or suggest he switch to lefty because the best hitter on the team is a lefty. So long as you believe Jeter is the right man to hit 1st in the lineup and play shortstop on your team, your job is to remove whatever barriers are standing in his way of achieving his full potential.

The Investment Committee sets boundaries in order to free the portfolio managers.

As it relates to the business, the IC sets boundaries in order to free the PM's. It mandates procedures to help the PM stay objective, consistent and clear headed, but also to immediately recognize a structural problem.

It's important to remember the fundamental assumption underlying this entire approach; that I have done my job as managing partner and we have confidence that every player on our team is supremely capable of fulfilling

his/her functional role. I must always be of that opinion. That means, if I am not, action must be taken. In other words, that PM must either be removed, or their allocation reduced to match the level of confidence the IC has in their ability, relative to the other PMs. It's important to note that everyone must feel safe and appreciated. If there is always the threat of losing your job hanging over your head, it is highly unlikely you will perform your role very well. This highlights just how important it is to be incredibly deliberate in the hiring process, and clear in what is expected, from day one.

Portfolio Manager

The portfolio manager's job is simply to maximize returns on his/her talent. The decisions made by a PM boil down to developing views, setting expectations, expressing those expectations within the confines of the parameters set forth by the Investment Committee and executing well. Period.

THREE PILLARS

There are three core pillars of a hedge fund: investments, operations and business/marketing. A great business/marketing unit combined with solid operations is an incubator or platform. It's the investment unit that truly defines the business as a hedge fund. The goal of the other units is to support the investment side, but that's not to say they aren't essential to running a successful hedge fund.

Operations

Without solid operations, the business is vulnerable to costly errors and execution limitations. Both of which can present severe issues for even the best managers. Optimally, the head of operations should possess a deep understanding of and experience with, the most complex instruments the firm utilizes, as well as long standing relationships with prime brokers, administrators and other essential service providers, removing one of the key concerns for most new fund launches.

Business/Marketing

As it is for the proverbial tree that falls in the forest, if no one knows of your returns, it is as though they never happened. If your investment process involves little more than gut feel and intuition based on

experience, then marketing can be left in the hands of anyone with people skills. However, if the firm's investment process and approach to markets is far more developed than that, in order for investors to truly appreciate your returns, it is important that they understand how they are uniquely derived. Therefore, the more unique your investment style, the more uniquely qualified your marketers must be.

Investment Management

Below, are a set of processes (instituted) which minimize the impact of weaknesses and maximize the impact of strengths, both individually and collectively. In addition, you will find a system (learned) designed to dynamically manage and adjust those processes, including powerful levers and feedback loops. This allows the managing partner, partnership committee, investment committee, CIO and portfolio managers to analyze the results and make adjustments accordingly. It is an iterative and evolutionary process.

KEY ASPECTS

Proprietary Trader vs Portfolio Manager

At its core, the difference between being a prop trader and a portfolio manager is that the latter recognizes that capital is being managed; capital that could be put to work elsewhere and that is at risk. This concept should be applied to the capital managed by the fund, as well as the capital allocated to individual portfolio managers.

Percentage vs Nominal Returns

The majority of funds track percentage returns on capital for the fund as a whole, but nominal returns for individual PM's. This is inconsistent and creates a disconnect between what the fund is trying to accomplish and the role an individual PM plays in that success or failure. That is why fund and individual portfolio returns should be communicated internally in percentage terms on a daily basis. It is a simple way to constantly reinforce the idea that you are being judged by how effectively you manage the capital invested with you as a fund, and allocated to you as a PM.

This simple adjustment sets everyone up mentally for managing increasing amounts of capital. By taking the focus off of nominal amounts, it makes for a smoother transition to managing ever larger AuM. It is not good enough to simply produce \$10m or even \$100m in p&l. Instead, portfolio managers must produce returns on a relative amount of capital being managed. This is a big departure from the prop desk mentality, where the nominal numbers determine whether someone is doing well or not, with complete disregard for the amount of capital being managed.

Structuring for Expectations

It is vital to understand the role of structuring in portfolio management. The structuring process comes only *after* a PM has clearly defined his view and how it will affect asset classes, markets, price action, vols, skew, rates, etc., but it should also begin after expectations are set for the specific market in which he is about to position himself. In other words, *first* expectations are set, *then* the optimal structure for those expectations is determined.

An essential part of the process is defining "Reassessment Triggers" in all

Since you are at your most objective before you put capital at risk, that is the optimal moment for establishing objectives and setting expectations.

relevant components ahead of trade entry. Since you are at your most objective before you put capital at risk, that is the optimal moment for establishing your objectives and setting your expectations. The objective in structuring is to create a risk/reward profile that is skewed to more closely match your expectations for the direction of the underlying, speed and distance of that move, vols, vol curves, rates, rates curves, skew and skew curves.

It is difficult for a structure to be profitable unless you get the underlying motion right, but if you can be right on 2 or more of the other factors, the structure itself can minimize the loss associated. However, if you get the motion plus a few of the other factors right, the returns should be exponentially better than a pure cash position, with the added bonus of defined downside.

Allocating Capital

For most firms, especially larger, well established firms, capital isn't allocated so much as risk is; very similar to the way it is done on most prop desks. PM's are given a stop loss limit and told to make as much as they can without triggering it. Sometimes the limit is a rolling stop, but more often than not, when a PM is up, risk management becomes more lenient and less disciplined. (Think of every major hedge fund collapse. Now name one that occurred when they were struggling.) Smaller firms tend to allocate capital according to equity stake.

Everyone must be allowed the freedom to perform within their respective set of predefined directives in order for the whole to be running at optimal proficiency.

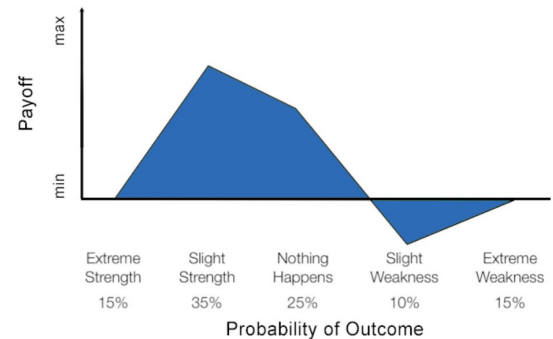
Both of these methods are less than optimal. In the approach being proposed here, where the fund is a collection of individually, yet coherently run individual portfolios, the success of the firm is dependent upon the ability of PM's to maximize returns and minimize drawdowns, but also the CIO/IC's ability to allocate capital to the best, most consistent performers among them. This means the IC allocates to performance, with the understanding that *performance must be derived while staying true to both risk and style directives.*

Capital allocations need to be fluid enough to account for changing p&l trajectories, but stable enough not to impact a PM's process. This is because you have two very distinct processes in this setup, one for the fund and one for individual PM's. Each must be allowed the freedom to perform within their respective set of predefined directives in order for the whole to be running at optimal proficiency. If, for example, you are focused primarily on medium-term strategies (average strategy duration > 3 months), it would be counterproductive to radically adjust allocations among PM's more often than that.

Determining Effective Capital for the Fund

The key to determining the right amount of effective capital (total capital allocated across PM's) is having a solid understanding of the typical level of correlation among portfolio managers. If the expectation is that PM's will be more highly correlated than reality, then the firm is likely to run into fund level VaR limits faster and more often than desired, resulting in the potential for cutting of risk at

Structuring to Capitalize on Expectations



what may be an inopportune time. The risk in assuming correlations that are lower than reality is that the firm is then underutilizing its capital. The firm’s Diversification Ratio (DR = Fund VaR / Cumulative VaR) can be used as a guide to help monitor correlation among PM’s. The Diversification Ratio is used in determining the Leverage Ratio (LR = 1 / DR) and therefore the fund’s Effective Capital (EC = LR * AuM).

Allocating Capital to Portfolio Managers

One might think that with the benefit of hindsight, the way to maximize returns for a fund with multiple portfolio managers is to allocate all the capital to the PM with the highest returns, which implies also having taken away all capital from the under-performers. However, there are two main aspects to capital allocation among PM’s: p&l trajectory and diversification. In making allocation decisions, several

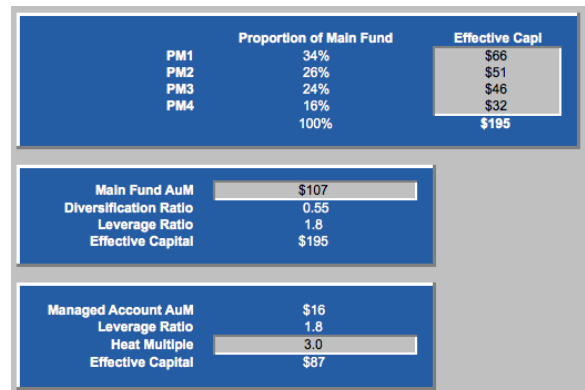
The fund is run from the bottom up, with each layer of decision making occurring with maximum autonomy within a given set of clearly defined, well projected guidelines and rules.

factors come into play, but the key ones are p&l and p&l trajectory, both of which serve as quantitative evidence that support the IC’s confidence in the PM’s’ ability to maximize returns relative to risk. Those factors are unlikely to change rapidly overnight or even monthly, and therefore, neither should the allocations.

Allocation decisions based upon performance must be balanced with the benefits of diversification. The more diversification you get from a group of PM’s, the greater the leverage ratio for allocating theoretical capital across the fund. As an example, if you have 4 PM’s with 1 returning 20% on his capital and the rest returning 15% each, and you were to allocate 100% of the firm’s AuM to the best performing PM, the return for the fund would be 20%. However, if you allocate evenly across all PM’s, but use a 1.8 leverage ratio, the return for the fund would be 29%. In fact, the diversification is so powerful that in this example the leverage ratio could go down to 1.23 before fund returns would be the same as the allocation of 100% to the best performer.

Some might argue that I’ve forgotten to consider opportunity set as a component of the allocation decision process, but in fact I have, and purposely discount it. This may seem counterintuitive, but the decision to roll allocations to a particular asset class, region or investment style is a timing decision and thus, by definition, a trading decision. There are two flaws in the idea of shifting allocations according to a trading decision. The first flaw is that it implies that PM’s produce beta rather than alpha and secondly, it would effectively be giving a 100% allocation to the IC. While that may sound reasonable, the truth is, few possess a track record for that particular skill. However, the approach proposed here allows for a way to extract it.

In this system, the fund is run from the bottom up, with each layer of decision making occurring with maximum autonomy within a given set of clearly defined, well projected guidelines and rules. From the fund (Investment Committee) perspective, once risk limits, style definitions, instrument and asset class mandates are specified, the main lever used to maximize returns and limit



downside is the PM capital allocation as a proportion of effective capital. Here, peer review (pressure) is employed to ensure that trades, strategies and themes stand up to the scrutiny of the Investment Committee, but so long as the PM is within her risk limits and has not strayed from her style mandate, the PM makes all trading decisions independently.

Allocating Capital Across Accounts

(For firms directing managed accounts with independent mandates)

Each fund / managed account has its own mandate in terms of asset classes and instruments. Since each Portfolio Manager brings their own specialty and focus to the firm, it is natural to assume that their impact / participation in each mandate will differ from that of the main fund. In order to ensure that each

It is important to take steps toward standardizing how risk is taken, managed and monitored by individuals and the group if you are to optimize capital allocations and, in turn, returns.

account / fund is managed effectively, you require a set of levers for making adjustments to each one's effective capital and how that capital is allocated among PM's relative to the main fund. The Leverage Ratio is determined in the same way as it is in the main fund, in that you track the DR, and attempt to peg the most likely level of correlation over time. The next lever is the Heat Multiple which is determined by the IC as per the investors' desires and is set relative to the main fund, which has a Heat Multiple of 1. If a fund / account is meant to run "hotter", meaning with higher risk tolerance, then the Heat Multiple will be greater than 1, and vice versa. The final lever used in allocating capital in the other funds / accounts is the proportion of the main fund that is managed by a PM in that particular fund / account's mandate. For

instance, if PM1 only trades FX in the main fund and an account mandate is to invest solely in interest rates, PM1's capital allocation will be 0% in that account. This ensures that you don't under-capitalize the other funds / accounts and those PM's who have more of a specialty / focus in a particular mandate will have a higher proportion of the risk and greater impact on the results.

Peer Review

In order to feel comfortable allocating any amount of capital to a particular PM, you must first be comfortable with their trading style, ability to manage risk and capacity for consistently generating profits. The greater the confidence in those factors, the greater the allocation to a particular PM. This also applies to the firm itself. The greater the confidence in those factors across all PM's, the greater the allocation of effective capital you can make to the firm as a whole. Therefore, it is important to take steps toward standardizing how risk is taken, managed and monitored by individuals and the group if you are to optimize capital allocations and, in turn, returns.

Trade Write-Ups

Trade Write-Ups serve several purposes, some of which are described above, but additional ones as well. First, by requiring PM's to fill out and make available to their colleagues, a full description of every position, including objectives, risks, rationale and trade details, the entire firm has a better grasp of where its risk is, and why. It invites feedback, stimulates dialog and broadens the perspective of the other PM's. It also requires a specific thought process to be followed before entering any trade, one that is consistent regardless of the PM's style, asset class or view. The process is designed to be just demanding enough to discourage impulsive trading. They are also categorized according to instrument,

greeks, drivers, CaR, asset class, region, etc to allow for an honest analysis of PM and group tendencies, strengths and weaknesses.

The information required for the trade sheet is trade rationale, key drivers, trade details, descriptive charts / graphs, expected return analysis and most importantly, reassessment triggers. A detailed scenario analysis is also included in each trade write-up, serving as proof that it holds up to the rule of positive expectancy.

Reassessment Triggers

All trades are based upon certain fundamental assumptions. When those assumptions change, you have to reassess the validity of the trade, hence the term "reassessment trigger". A stop loss is a reassessment trigger, so is a take profit, but these aren't simply p&l targets. Stop-loss and take-profit targets are set for all essential components in a structure. They may be implied volatility, skew, delta, spread, date or any number of other factors used to identify the moment when the trade's risk/reward dynamic is no longer favorable. They can also be economic data points, election results, and interest rate decisions. When an R.A. is triggered, the trade is closed, returning the portfolio manager to perfect objectivity. The reassessment trigger is an essential component of the investment process, ensuring real internal discipline and inviting external criticism based on predetermined rules. It plays a crucial role in ensuring that profit is taken when targets are hit and frees the PM to move on to the next opportunity. It is at the heart of what makes this investment process unique.

BijaAdvisors
Better Decisions, Better Results

Trade Write-Up

Corn 5 - Short Corn via Vanilla Put ¹		Commodities		
Fundamental Rationale: The world is without a growth engine and even the big driver of demand specifically for food (US urban population growth in China) no longer is (see graph). If demand had been the primary driver for the shift higher in food prices, then the return to pre-1997 levels in urban growth compounded by a halving of overall population growth should have the reverse effect. Then add on the fact that food production has increased to keep pace with the increase in demand and you have the potential for a real collapse in prices. For the moment though, the world makes the assumption that the base level at which food is trading is the "right" level and so a supply side shock has an impact relative to that. The thing about this drought, which some compare to the famous Dustbowl, is that it is happening to a much larger crop planting than last year, so even using ags rather than energy commodities, corn instead of sugar (see ratio graph), and using July rather than Sept (see graph). If demand is the driver for downward price pressure, all three should work in my favor as a high beta. Some rain in the region would be a potentially huge bonus.				
Technical Rationale: Front contract trading 43% above its low of 1 month ago. July contract trading near its widest of 50 years over the Sept. Corn to sugar ratio trading at second widest in 50 years.				
Risk Factors: The drought could be even worse than currently anticipated. Fed induced spike in asset prices.				
Trade Details				
Trade Date	Expiration	Window Start	Commodity	Option Type
July 24, 2012	June 21, 2013	N/A	Corn	Vanilla
C/P	Strike		Lower Barrier	Upper Barrier
Put	760		N/A	N/A
Spot	Forward	Implied Vol	Price	CaR as % AuM
789.50	760	31.02	0.90	0.56%
Reassessment Triggers		Expectations		
<ol style="list-style-type: none"> 1. July vs Sept at -25 (currently -100) 2. C 1 at 800 3. Fed induced move higher in ags, look to double the position 4. Corn vs Sugar +400, add outright or as a spread 5. Corn vs Sugar at 0 		<ul style="list-style-type: none"> Spot - Lower Curve - Flatter Corn vs Sugar - Lower Implied Vol - Higher 		
Options 101				
What is a Vanilla option? Plain vanilla options are used to express a straightforward directional view in the underlying, where the trigger for a move is specific and identifiable. We do not sell plain vanilla options except as part of a structure such as a butterfly, seagull, etc. whereby the downside for the entire structure is pre-defined and limited.				

Copyright © 2015 by Bija Advisors LLC.; BijaAdvisorsLLC.com
 Reproduction or retransmission in any form, without written permission, is a violation of Federal Statute
 Important disclosures appear at the back of this document

RISK MANAGEMENT

Traditional Tools

Risk management is an integral part of a holistic investment process. The objective of an effective risk management system is simply to ensure that risk is identified, understood and deliberately taken. Many traditional methods should be employed in this effort including VaR limits, stress tests and stop losses. While they are employed in this system as well, it is important to understand that each has its limitations. In my experience, a good offense is the best defense.

Stress Tests

Calamities are rarely replicated in exactly the same way, so while running stress tests for events such as the Asian Crisis, LTCM and Black Monday, may provide comfort, in truth their value is limited. It's important to run stress tests for the traditional periods, but also for periods when recent and medium term correlations broke down, for it is the breakdown of correlations that have traditionally caused the most pain.

It is the breakdown of correlations that have traditionally caused the most pain.

Value-at-Risk

Some mistakenly view VaR as being representative of outlier risk and as a result, in hindsight it has often been spurned for providing little value. The reality is that VaR is simply meant to be representative of the “likely” range for p&l on a given day, week or month. Understanding its value, it should be depended on primarily as a tool for sizing positions consistently across the portfolio and as a guide for monitoring diversification.

Tight Stops

In my opinion, when “tight stops” are employed as a risk management tool, they simply exchange outlier “blow up” risk for high probability “bleed” risk, resulting in flat to negative expectancy for the investment style. I subscribe to the philosophy that stop losses should be triggered only when the view that a trade is meant to express, is no longer valid. With proper structuring, it is very possible for a position to be “stopped out” even if it’s flat or profitable. Once a trade’s proper stop-loss triggers are identified, they become inputs into the scenario analysis from which the trade’s expected value is calculated.

When “tight stops” are employed as a risk management tool, they simply exchange outlier “blow up” risk for high probability “bleed” risk, resulting in flat to negative expectancy for the investment style.

Proactive Tools

Trade Write-Ups

What all traditional risk management methods lack is an ex-ante ability to identify deviations in process, discipline and style. Trade Write-Ups provide an opportunity to do exactly that. Additionally, trade write-ups serve as detailed scripts for the life of a trade that anyone on the Investment Team could execute. This synthetic redundancy reduces personnel risk.

Trade Attribution System

By standardizing trade write-ups, each component is stored in a central database which ties in with back-office systems, and Bloomberg alerts, ensuring accuracy of the data and systematic treatment of reassessment triggers.

Capital-at-Risk

Utilizing structures with built-in defined downside allows the firm to assess maximum capital at risk (CaR) for each trade and the portfolio as a whole, at any given moment. If a stress test is meant to determine how bad things could get in an extreme scenario, CaR serves as the ultimate stress test.

EVALUATION

Performance Review

Just as coaches review game tapes rather than simply using the final score to assess decisions made and actions taken, the IC should review closed trades individually and in time buckets, seeking ways to improve. The value of experience comes not from the quantity of years, but the quality of the lessons learned. The goal is to evolve, rather than simply get older. Honest introspection and evaluation is essential to making that happen. Ongoing evaluation of open trades including their drivers and reassessment triggers ensures that a consistent and rigorous approach is taken throughout the life of

every trade. This investment process promotes transparency & accountability, drives self-reflection and stimulates improvement.

Accountability

One of the many benefits of moving into management is that you no longer have results which are directly attributable to you. Not so in this system.

If the CIO is going to increase an allocation to one PM and reduce that of another, that is an investment decision, for it directly impacts the funds' overall returns. If the Partnership Committee decides it would be in the firms' best interest to reduce risk for strategic business purposes, it too is effectively an investment decision, affecting the funds' performance. In both cases, the decision maker should be free to make the decision they deem appropriate, while being held accountable for the resulting impact. In this system, it is not only possible, it is systematically incorporated.

The value of experience comes not from the quantity of years, but the quality of the lessons learned.

It goes beyond merely knowing who to blame or praise. The goal for each and every person in a firm is to evolve. In order to do so, you must have methods for quantifiably recognizing strengths and weaknesses. In this system, the Investment Committee has the ability to extract the impact of the CIO's decisions, so that he too can improve and be held accountable. Importantly, the "levers" also serve to respect the sanctity of each portfolio manager's track record, allowing it to remain a pure reflection of her decisions; no asterisks necessary. The Partnership Committee has a lever as well, called the Partnership Committee Dial (see PC Dial Calculator). It enables them to make decisions that affect business continuity, while allowing the firm to assess the impact of those decisions.

PC Dial Calculator	
Inputs	
Pain Threshold (\$ amount limit in mill)	\$15.00
Acceptable Probability for Hitting Pain Threshold	5.00%
Number of Business Days	40
Target VaR	1.50%
Click to Calculate PC Dial	
Outputs	
VaR Suggested by Inputs	0.5445%
PC Dial Setting (Range: 0-1)	0.36
Calculated Probability for Hitting Pain Threshold (95% prob)	5.13%
Accuracy of Calculated Probability	+/- .14%

SUMMARY

The fundamental objective of this approach is to build a firm that is simultaneously rigid in process and organic in execution. As Phil Jackson said in his book, *Sacred Hoops*, "Inevitably, paradoxically, the acceptance of boundaries and limits is the gateway to freedom." By breaking decisions down to their core components, then delegating them to those who are best qualified to make them and quantifiably assessing the value of those decisions at each and every level of the organization, all of the firm's talent is empowered to reach its full potential while working toward a common goal. By creating *and maintaining* clear, consistent, structured processes for decision making, ego is curtailed, transparency is improved, and objectivity dominates bias.

Recruit the best talent, then create an environment that allows it to flourish.

About the Author

For nearly three decades, Stephen Duneier has applied cognitive science to investment and business management. The result has been 20.3% average annualized returns with near zero correlation to any major index, the development of a billion dollar hedge fund, the turnaround of numerous institutional trading businesses and career best returns for experienced portfolio managers who have adopted his methodologies.

Mr. Duneier teaches Decision Analysis in the College of Engineering at the University of California Santa Barbara.

Through Bija Advisors' publications and consulting practice, he helps portfolio managers and business leaders improve performance by applying proven decision-making skills to their own processes.

As a speaker, Stephen has delivered informative and inspirational talks to audiences around the world for more than 20 years on topics including global macro economic themes, how cognitive science can improve performance and the keys to living a more deliberate life. Each is delivered via highly entertaining stories that inevitably lead to further conversation, and ultimately, better results.

Stephen Duneier was formerly Global Head of Currency Option Trading at Bank of America and Managing Director of Emerging Markets at AIG International. His artwork has been featured in international publications and on television programs around the world, and is represented by the world renowned gallery, Sullivan Goss. He received his master's degree in finance and economics from New York University's Stern School of Business.

Bija Advisors LLC

Web: BijaAdvisorsLLC.com

Email: info@bijaadvisorsllc.com

Twitter: [@BijaSeeds](https://twitter.com/BijaSeeds)

Podcast RSS: [BijaSeeds](#)

LinkedIn: [Duneier](#)

Phone: 805.452.9429

In publishing research, Bija Advisors LLC is not soliciting any action based upon it. Bija Advisors LLC's publications contain material based upon publicly available information, obtained from sources that we consider reliable. However, Bija Advisors LLC does not represent that it is accurate and it should not be relied on as such. Opinions expressed are current opinions as of the date appearing on Bija Advisors LLC's publications only. All forecasts and statements about the future, even if presented as fact, should be treated as judgments, and neither Bija Advisors LLC nor its partners can be held responsible for any failure of those judgments to prove accurate. It should be assumed that, from time to time, Bija Advisors LLC and its partners will hold investments in securities and other positions, in equity, bond, currency and commodities markets, from which they will benefit if the forecasts and judgments about the future presented in this document do prove to be accurate. Bija Advisors LLC is not liable for any loss or damage resulting from the use of its product.