



## The Elements of Proper Due Diligence of Commodity Trading Advisors (CTAs)

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Proper CTA due diligence encompasses many dimensions including numerous subtle ones that may potentially lead to imprudent investment decisions. A single article cannot possibly capture and articulate all the nuances involved in performing rigorous due diligence, but it can furnish several key and sometimes overlooked elements and wisdom gained from experience.

It is important to remember that each and every CTA is unique, and as such, there are no shortcuts in proper due diligence. One must fully evaluate the CTA not only as a trading manager but also as a business enterprise. One must carefully analyze the strengths and weaknesses of the CTA both as a firm and as a fund. What might be seen as the biggest strength might also be the biggest weakness. For example, consider a talented veteran trader and experienced entrepreneur almost single-handedly running the business and managing the fund. The biggest strength may be this trader's experience and unique ability to manage a portfolio, but the vulnerability of key-man risk may be the biggest weakness.

Qualitative due diligence requires thorough investigative skill, persistence, and old fashioned hard work. It is ongoing and arguably emphasized more heavily than the corresponding quantitative due diligence. This notion does not mean, however, that quantitative due diligence should be deemed of lesser importance or marginalized.

It is somewhat astonishing how poor the statistical analysis is of many large financial institutions in their due diligence process. The Omega function, the robustness coefficient, and correlation peer group analysis are tools in the statistical toolbox that provide many effective insights under the expert lens. No one statistic determines beforehand which manager will succeed going forward, or clearly identifies one manager as superior to all others, but in aggregate a comprehensive statistical toolbox can bring more clarity as to which managers are least likely to suffer irreparable trading losses. Too often analysts and investors focus too closely on one or two ratios which can lead to unjustified confidence in a manager's performance and risk controls. Thorough quantitative due diligence can give a competitive edge in finding the best funds.

It is not a novel concept to state that it is prudent to understand the trading methodology thoroughly before making an investment, but too often a manager will conceal trading concepts behind words and phrases such as proprietary, multi- strategy, highly sophisticated, systematic, automated, robust and opportunistic. The word 'proprietary' is the biggest offender of the aforementioned. It is important to dig deeper into these responses in order to avoid costly investment errors later. For example, if a manager states that chaos theory or digital signal processing or some other advanced scientific concept contributes to generating signals, ask to see the research that backs the assertion. Verify that the manager does indeed use these concepts in the trading models and not just in the marketing

presentation. Ask to see any white papers that have been written on the subject. Ask whether it was individually written or coauthored with a colleague. Too many times a manager will have just enough knowledge of the topic to sound convincing during a methodology discussion, but the reality is that there is little to no practical application of the science. This in itself may be a benign exaggeration that only serves to sound sophisticated, which should be a yellow flag at a minimum and bring into question the integrity of the manager, but other times the manager may in fact be attempting to use these concepts in the trading models without truly understanding the model risks involved. If this is true, the probability is high that the models will degenerate and lead to losses. Even if these concepts are beyond one's scope of knowledge, have a qualified academic or professional colleague read through the papers and evaluate the depth of the work. This easy step will help get oneself more educated on the topic and will serve to verify whether the manager is legitimately using the concepts.

The aforementioned words 'systematic' and 'automated' move beyond trading concepts and introduce operational issues. It is important to know what tools, software and hardware are used to systematize and automate, who exactly did the work, whether that person or persons are still employed by the manager exclusively and available at all times to problem solve, and whether testing and improvement is ongoing. It is not enough to accept the fact that a group is technically sophisticated and trust that the best methods are being used.

Better technology introduces another situation that is often underestimated or overlooked. Increasingly managers work remotely away from the main office because instant communication and fully automated systems supposedly mitigate procedural risks. Managers will claim that detailed procedures manuals, 24-hour alerts, emails, voice messages, global web access, and other forms of technology will prevent calamity. But how does the business benefit from the managing partner working from hundreds or thousands of miles away? Are investors better served when the portfolio manager is physically isolated from the risk and compliance officers? Is the research effort as strong as it could be? Conceptually everyone within the firm is just seconds away from each other, and so one may discount the risk posed by this scenario. If anything, extra caution and scrutiny must be applied, and ultimately, one must ask whether it is really worth the added preventable risk. Why invest with a manager and pay the management fees when there isn't a full effort to provide the best possible management by eliminating as much avoidable business risk as possible? Some managers do not charge a management fee which more directly aligns the manager's interests with investors. Compensation only occurs if new equity high water is achieved. This is a better incentive model provided that the principals of the firm are sufficiently wealthy so that the firm's infrastructure will not suffer by the less certain revenue stream.

Risk is the price for return. The question due diligence must answer is whether an investment in the CTA is a good value. To this end, an understanding of risk management is paramount. Managers often speak amply about the number of models employed in the trading program, but meaningful dialogue about model risk occurs much less often. No model is perfect, and it is vital to understand the assumptions and limitations of the model's input and output. The various risk controls and entire risk management system as well as the investment beliefs must be understood. How are the different risks being measured? How is the manager precluding strategy drift, style drift and concentration risk? What controls are in place? Is the fund trading in the proposed domain of investment instruments as advertised? How strong is the risk oversight?

The investor must also believe in the strength of the CTA as a business enterprise. Operational due diligence is a critical component to the success of the firm. One often overlooked element is the cash management. Another is the precautions taken to avoid criminal and terrorist risk related to computer security. The proper application of mathematical cryptography to secure enterprise data networks can help to alleviate this latter risk. Background checks on the key individuals and service providers should not be superficial.

While one should always respect a manager's time and maintain polite communication, it is the client's money that the CTA is trading. In some cases, the clients are performing a fiduciary duty. There are literally thousands of funds available and so providing excellent client service should go without saying. The communication must be ongoing and available at all times.

In summary, proper due diligence should determine the manager's ability to generate profits given the risks assumed, measure the manager's ability to minimize losses, and gauge the manager's ability to administer and grow the business. Intelligent quantitative due diligence as well as maintaining alertness to the human element are key components of due diligence. Simply chasing returns will most likely lead to a bad crash.

Ethics and integrity are uncompromising- if the manager or organization seems to in any way lack either, stay away!

Rigorous due diligence does indeed have many dimensions, and it requires acting with intelligence guided by experience, common sense and reason.

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