



Review of SDCERA Alpha Engine
December 18, 2006

The Alpha Engine Concept

SDCERA uses an innovative approach to earning returns above market indexes, which it calls “Alpha Engine.” A small but growing number of other endowments and retirement plans have implemented basically the same strategy but “portable alpha” has become the industry’s more commonly used label. We use “Alpha Engine” in this report to refer to SDCERA’s specific program and “portable alpha” when making generic references to the strategy. Other public funds that currently use portable alpha include the retirement systems of Massachusetts, Missouri, and Pennsylvania, and, to our knowledge, most institutional investors that use the strategy have been pleased with the results. This probably explains why recent industry surveys report that portable alpha is expected to be a rapidly growing approach to institutional investing.¹

S&P 500 allocations have been by far the most common market fund segment to apply the portable alpha concept because large capitalization stock indexes have been the most difficult to outperform through traditional stock managers. SDCERA has chosen the same application for its Alpha Engine. As of the last asset allocation study, SDCERA’s target allocation to S&P 500 stocks is 19.2% of total fund assets, and SDCERA has chosen to use the Alpha Engine for the entire allocation. At total fund assets of \$7.6 billion at September 30, the target dollar allocation to the Alpha Engine is \$1.48 billion.

SDCERA achieves its desired S&P 500 Index exposure using over-the-counter swaps that are managed by its internal staff. Similarly, most portable alpha programs use swaps to gain beta exposure though oftentimes the fund sponsor will use an external provider, such as a custodial bank or transition manager, to execute the index swaps at a few basis points cost.

Most portable alpha programs use hedge funds as their alpha source. There are two approaches fund sponsors use to gain access to hedge funds. Approximately half select hedge funds directly (referred to as a “direct hedge fund program”). SDCERA uses this direct approach for its Alpha Engine. Other fund sponsors prefer to pay an additional fee, generally 1% of assets, to invest in a “hedge fund-of-funds” because they believe fund-of-funds potentially reduce “headline risk” should investments go bad and because they provide a turnkey approach to investing in hedge funds.

The Alpha Engine, like any other portable alpha program, can be a low risk approach to investing despite the use of hedge fund strategies, which sometimes involve leverage and short selling.

- Key implementation issues are manager selection and diversification.

Cliffwater believes that SDCERA’s Alpha Engine, in concept, is a prudent approach to investing retirement assets that, while at the forefront of institutional investing, has been used successfully by other funds in similar circumstances.

Appendix C

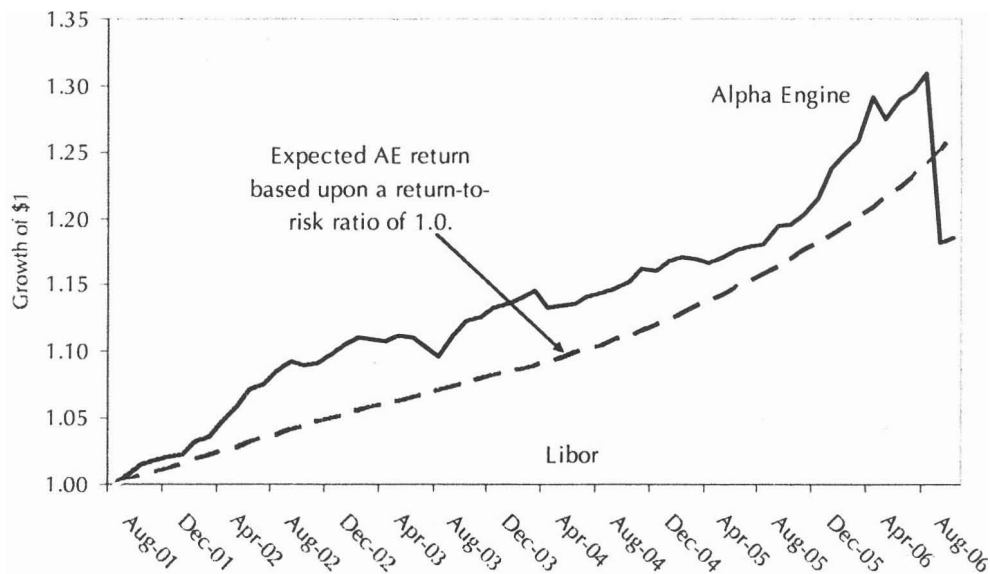
Alpha Engine Analysis and Recommendations

Alpha Engine Policies

Performance is shown in Exhibit 1, covering the period from August 31, 2001 through October 31, 2006.² The blue line plots cumulative Alpha Engine returns. The green dashed line plots the return objective for the Alpha Engine, equal to LIBOR plus an additional return equal to the realized risk level. LIBOR, a cash return, is plotted in the lower yellow line.

Alpha Engine performance, until September, had significantly exceeded its objective of earning an excess return (“alpha”) over LIBOR at least equal to the Alpha Engine risk level.³ But September losses reduced five year Alpha Engine annualized excess return over LIBOR from 3.4% to 0.8%.⁴ For the same pre and post September periods, SDCERA performance objective for excess return over LIBOR was 1.9% and 2.0%, respectively, levels corresponding to Alpha Engine risk. Despite September losses, the Alpha Engine has added a five year annualized 0.8% excess return over LIBOR but the level of excess return has now fallen below its performance objective.

Exhibit 1: Alpha Engine Performance versus Expectation
August 31, 2001 to October 31, 2006



Alpha Engine return volatility, measured by the annualized standard deviation of returns over the last 36 months, has been consistently below the 3% maximum policy level (2% prior to July 2005) until the September losses. We expect future volatility to return to pre-September levels.

Portable alpha programs are commonly structured to have a risk level between 3% and 5%.⁵ The risk level for the Alpha Engine measured 2.23% for the five years ending August 31, low by portable alpha standards.

Appendix C

Alpha Engine Analysis and Recommendations

Alpha Engine Diversification

There are three allocation practices widely used by fund sponsors and fund-of-funds managers alike when creating a portfolio of hedge fund managers. They are:

1. *Number of Managers.* Most large portfolios of hedge funds have at least 15 managers and the majority will have between 20 and 30 managers. In Cliffwater's opinion, some fund sponsors have too many managers. Those that invest in multiple fund-of-funds have discovered that they may have invested in well over 100 underlying hedge funds. The Alpha Engine, with 11 managers, has fewer managers than most portfolios of hedge funds. At the same time, however, some of the managers selected for the Alpha Engine have a much lower level of risk than the typical hedge fund. As a result, Alpha Engine volatility has been below volatility levels for most hedge fund portfolios. Nevertheless, we would recommend adding five to ten managers to limit the downside that any one manager might cause. A simple but effective approach is to equal dollar weight managers and increase the number of managers (reduce the weight) until a significant loss scenario in one manager reaches an acceptable risk tolerance. Under this methodology, the maximum loss is 10% of the Alpha Engine (2% of total plan assets) with 10 managers and 5% of the Alpha Engine (1% of total plan assets) with 20 managers.

Exhibit 2 shows the current Alpha Engine managers with their assets and weighting (excluding Amaranth) at November 30, 2006.

Exhibit 2: SDCERA Alpha Engine Components

	Assets (\$000)	% of Assets	Risk	Risk
	at Nov 30	ex Amaranth		Weighting
Amaranth	89,740			
AQR	50,225	4%	9.0%	6%
Bridgewater	138,301	11%	18.0%	35%
DE Shaw	202,385	17%	6.0%	17%
Freeman	61,553	5%	5.0%	4%
Freeman FV	30,976	3%	12.0%	5%
Lotsoff	154,345	13%	2.0%	4%
Silver Point	145,915	12%	6.0%	12%
WAMCO	157,618	13%	3.0%	7%
WG	139,493	11%	0.2%	0%
Zazove	143,659	12%	4.0%	8%
	1,314,210	100%	5.8%*	100%

*Assumes a 1.0 correlation among managers.

2. *Risk Weighting.* Other investors in hedge funds go a step further and look at "risk weighting." This is the idea that if managers are known to have substantially different risk levels, then it makes some sense to allocate less to the more volatile managers and more to the less volatile managers. The final column shows the "risk weighting" of each manager, or the percent of overall Alpha Engine risk that is attributable to each manager. We recommend

that SDCERA shift manager weights to achieve a more equally distributed risk weighting among its Alpha Engine managers. The exception would be managers that are intended to provide only liquidity, which generally is set at 15% of portable alpha assets.

3. *Style Diversification.* Hedge funds are generally grouped into unique styles of investing and fund sponsors generally diversify across styles to further diversify a portfolio of hedge funds. SDCERA groups managers into three categories: security selection, arbitrage, and trading/macro. We recommend that SDCERA include additional categories in order to further diversify its Alpha Engine portfolio. For example, the event-driven category is one that we believe would help the Alpha Engine meet its objectives and further diversify the portfolio. We also recommend that the return contributions of existing managers be evaluated to determine whether each manager is making the expected return contribution for their style and risk level.

¹ Greenwich Associates

² While one manager account that is in the Alpha Engine dates back to 1996, the development of the Alpha Engine and its policies has been evolutionary. August 31, 2001 was selected as the starting date because it provides five years of performance measurement, not including the September Amaranth losses, and prior return history can be used to measure volatility which is used in the performance objective.

³ This is commonly referred to as achieving an “information ratio” that equals 1.0. Most traditional active management method, if successful, produce information ratios of about 0.25.

⁴ Time periods are August 31, 2001 to August 31, 2006, and August 31, 2001 to October 30, 2006.

⁵ Portable alpha risk levels are generally set to be equivalent to the desired level of tracking error risk that would generally be found with a traditional active equity program.