

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: November 6, 2013

MEMO TO: Administrative and Investment Committee

FROM: Eric L. Sandler, Director of Finance

SUBJECT: Review Covered Call Manager Search/Shortlist Finalists for Interview

RECOMMENDATION

Review the results, assessments, and recommendations of the Pension Consulting Alliance (PCA) manager search for the Covered Call portion of the Investment Policy long-term asset allocation. Recommend a list of finalists to make presentations to the Retirement Board at its November 19, 2013 meeting.

DISCUSSION

At its September 19, 2013 meeting, the Retirement Board adopted a new long-term asset allocation for its Investment Policy. The Retirement Board also directed Staff to retain Pension Consulting Alliance (PCA) to issue a Request for Information (RFI) and to undertake a manager search for the Covered Call portion of the asset allocation. The Board also directed the Administrative and Investment Committee to identify a list of recommended managers for its review at the November 19, 2013 meeting. The target allocation for the Covered Call portion is 20% of total investments, currently approximately \$220 million.

BACKGROUND

The attached memo and report from PCA describes the due diligence and evaluation process they utilized to identify, assess, and recommend the list of the Covered Call managers who will be invited to make presentations to the Board. The Administrative and Investment Committee will review the process and results of PCA's manager search, as well as discuss and recommend a list of finalists who will be invited to interview with the Board.

PCA sent out RFI's to 12 investment management firms and received responses from the original 12 firms plus 3 additional firms who were not included in the initial list but had requested the opportunity to respond to the RFI. These 15 firms submitted a total of 22 proposed strategies for consideration. The proposals can generally be grouped into three distinct strategies. These three strategies are:

- BXM Index Replication – which seeks to replicate the BXM Index (also known as the Chicago Board Options Exchange CBOE S&P 500 BuyWrite Index), which is an

industry standard Covered Call strategy that consists of buying the S&P 500 Index and selling at-the-money S&P 500 one-month call options;

- Modified BXM Replication – which is a strategy similar to BXM Index Replication except that managers will have discretion on the call options that are written; and
- Fully Active Strategies - which is based on holding underlying equities not restricted to those in the S&P 500 Index while the manager actively manages the options written on the underlying equities.

The PCA report includes both manager and allocation percentage recommendations for each of these three strategies. A representative from PCA will be at the Administrative and Investment Committee meeting on November 6, 2013 to discuss their evaluation and selection, as well as the hiring and transition process.

ES:PL



MEMORANDUM

Date: November 3, 2013

To: East Bay Municipal Utility District (EBMUD)

From: Pension Consulting Alliance, Inc. (PCA) cc: Eric White, CFA – PCA
Neil Rue, CFA – PCA

RE: Covered Call Manager Search Finalists – PCA's Recommendation

This memo provides EBMUD with a summary of the Covered Call Manager Request-For-Information (RFI) process and provides a recommended list of finalist managers for further consideration.

Recommendation

PCA recommends the following Covered Calls managers as finalist candidates to be interviewed by the EBMUD Employees Retirement Board. The candidates listed below were selected based on PCA's review of the manager responses to the EBMUD's Covered Calls RFI.

Recommended Finalists*

Non-Replication Strategies

- Gateway Investment Advisers (Gateway)
 - Semi-Active Strategy
- Glenmede Investment Management (Glenmede)
 - Semi-Active Strategy
- Parametric Risk Advisors / Parametric Portfolio Associates (Parametric)
 - Semi-Active Strategy
- Van Hulzen Asset Management (Van Hulzen)
 - Fully Active Strategy

Replication Strategies

- Gateway Investment Advisers (Gateway)
- Parametric Risk Advisors / Parametric Portfolio Associates (Parametric)

*Alphabetical

Upon completion of the search process, PCA recommends that the Investment Committee select up to three managers. The new Covered Call manager(s) will be allocated a total of approximately \$220 million.



Summary

The EBMUD Board recently adopted a new long-term strategic allocation policy as a result of the 2013 Asset-Liability Study, adding two new strategic classes: Covered Calls and Non-Core Fixed Income. The Covered Calls class is an equity-based asset class that is designed to provide a reasonable level of downside protection during crises, while providing incremental income during flat-to-modestly rising markets.

In October 2013, PCA disseminated a Request-For-Information (RFI) to a short-list of Covered Call managers. The RFI was designed to give managers the opportunity to respond for either the replication or non-replication portion of the mandate – or both. A total of 15 firms respond to the RFI, including 3 additional firms who were not included on our initial short-list but requested the opportunity to respond. The 15 firms submitted 22 total strategies for our consideration (with some firms responded with both a replication strategy as well as a non-replication strategy or multiple non-replication strategies). Of the 22 strategies submitted 5 are replication strategies while 17 are non-replication strategies.

The following descriptions define a replication strategy, and the two basic subsets of non-replication strategies:

Replication

BXM Replication:

- A rules-based strategy that replicates the CBOE S&P 500 BuyWrite Index (BXM). This index is an industry-standard Covered Calls strategy that consists of buying the S&P 500 Index, and “writing” (or selling) the near-term S&P 500 Index covered call option, generally on the third Friday of each month. The covered call option is an obligation to sell if the index reaches the exercise price (or strike price). The option will have a one-month expiration, with an exercise price just above the prevailing index level (“near-the-money”). The option is held until expiration, at which time a new one-month, “near-the-money” call is “written” (or sold).

Non-Replication

Semi-Active Strategies:

- A strategy that is similar to the BXM Index, in which the underlying equity holding remains the same (S&P 500), but the rules for the exercise price, roll date, and option maturity are adjusted at the manager’s discretion.

Fully Active Strategies:

- An option-based strategy in which the underlying equity holding is not restricted to the S&P 500 Index, and may consist of a basket of stocks or a basket of ETFs. Additionally, the manager actively selects the options and their corresponding characteristics, including the possibility of pursuing option-based investment strategies other than “writing” (or selling) calls.



Manager Search Process

In response to the RFI, PCA received responses from the 15 firms listed in Table 1 on the following page. Table 1 includes the firm name, as well as their proposed strategy types. PCA first examined the historical track records of the proposing managers in order to determine their experience in managing Covered Call mandates. The historical track records included those that represented the proposed strategies, as well as any equivalent Covered Call strategies managed by the proposing managers. Of the 22 strategies submitted, 6 strategies were disqualified from further consideration due to either insufficient track records or inappropriateness of the strategy. The remaining strategies were then analyzed on a quantitative and qualitative basis in order to determine a recommended list of finalists to be interviewed by EBMUD. Responses were evaluated on a wide variety of factors, which included, but were not limited to the following:

Areas of Due Diligence

- Ownership and control structure of the organization, including its parent and affiliates. Focuses on the capacity of the firm to provide the required services. Also includes consideration of issues that may impact a firm's operational stability.
- Litigation and/or regulatory actions concerning all aspects of the organization whether an inquiry, subpoena for information, investigation, or settlement, and whether issues are pending or resolved.
- Experience (both quality and quantity) and qualifications of the investment management organization and its staff in providing institutional quality investment management services.
- An investment-style and decision-making process that result in the product having a close fit with the desired mandate.
- A more in-depth consideration of quantitative factors relating to investment performance and portfolio structuring. PCA reviews these factors over both discrete and trailing periods based on market cycles and typical investment horizons. Differences are assessed between candidates, benchmarks (or indexes), and/or peer universes.
- Firm and product assets under management, as well as a representative client list reflective of the size and scale of EBMUD.
- The costs of implementing the mandate deserves separate consideration and can vary substantially across a subset of candidates.
- Any other considerations believed to be pertinent to EBMUD

Table 1: RFI Respondents

Firm	Replication	Non-Replication
Allianz		X
Analytic Investors		2X
FAMCO		X
Gargoyle	X	2X
Gateway	X	X
Geode		X
Glenmede		X
Guggenheim		X
HVA^	X	X
Main		X
MD SASS^		X
Parametric/Eaton Vance	X	X
Rampart	X	X
Russell^		X
Van Hulzen		X

Bold indicates recommended finalist

^Requested RFI

Table 2 shows the category and total ranks for each of the candidate managers

Table 2: PCA Score Summary of Candidates

Candidate	<u>Category 1</u> Quantitative Analysis (15)	<u>Category 2</u> Fees (7)	<u>Category 3</u> Organization (20)	<u>Category 4</u> Investment Strategy (38)	<u>Category 5</u> Client Base and Services (20)	Total Score (100)	Rank
Van Hulzen	15	6	17	36	14	88	1
Parametric	14	5	17	35	16	87	2
Gateway	12	4	18.5	33.5	18	86	3
Glenmede	13	4	18	34	17	86	4
Guggenheim	11	2	17.5	33.5	18	82	5
Analytic Investors	7	7	16	32.5	16	78.5	6
Geode	5	7	17	34	15	78	7
Main	10	3	17	31	16	77	8
Allianz	6	2	17	33	17	75	9
Gargoyle	8	3	18	31.5	13.5	74	10
MD Sass	7	2	14	33	16	72	11
FAMCO	9	4	12	31	15	71	12



Table 3 highlights products that were removed from consideration and the reason for their removal.


Table 3: Products Removed from Consideration

Product	Reason for Removal
Gargoyle DH Value	Removed from consideration due to excess Standard Deviation
Analytic Value	Removed from consideration due to excess Standard Deviation
HVA	Removed from consideration due to incomplete RFI and strategy appropriateness
Rampart Non-Rep	Removed from consideration due to insufficient track record (2013 inception)
Russell	Removed from consideration due to insufficient track record (2012 inception)

Based on PCA's evaluation of the above factors, four managers were identified as strong candidates: Guggenheim, Gateway, Parametric and Rampart. A summary of the investment process of each recommended interview finalist is provided below.

Suggested Interview Finalists

- **Gateway** (Replication and Semi-Active): Natixis Global Asset Management (France), one of the largest money management firms in the world, owns 100% of Gateway Investment Advisers. All of Gateway's assets, approximately \$11.8 billion, are in Covered Calls and equivalent strategies. The Gateway Equity Premium Income Strategy, the proposed Semi-Active strategy, primarily utilizes S&P 500 replication as the underlying equity portfolio with S&P 500 Index calls as the options overlay portion. The strategy may also invest 10-15% of the underlying equity in an S&P 500 ETF (SPY) in order to provide additional liquidity. The options are actively managed with a wide variety of maturities (generally 1-, 2-, or 3-months). Strike prices, on a weighted average basis, are roughly "at-the-money". By altering the strike price and maturity of the options relative to the BXM methodology, Gateway believes that they can achieve excess returns and avoid the performance drag that occurs in a rules-based BXM strategy. Additionally, Gateway believes that the options market for the S&P 500 Index has more "consistent richness" than the market for options on ETFs and individual stocks. Gateway also expressed their willingness to provide a straight BXM replication product in which they would strictly follow the methodology of the BXM Index and primarily utilize S&P 500 replication as the underlying equity, with S&P 500 Index calls as the options overlay portion. Similar to the modified BXM strategy, Gateway would also invest 10-15% of the underlying equity in an S&P 500 ETF (SPY) in order to provide additional liquidity. Gateway currently manages in excess of \$1 billion for two PCA clients in both replication and semi-active strategies.
- **Glenmede** (Semi-Active): Glenmede Investment Management is a privately owned company in which employees own 19% of the firm. The company has been building customized risk management strategies for high net worth clients since 2003. The firm manages approximately \$6.5 billion in assets of which \$400 million are in Covered Call strategies. Glenmede's strategy attempts to build a better S&P 500 buy-write strategy through option



optimization without veering too far away from its BXM mandate. The Glenmede Secured Options Strategy only sells options on the S&P 500 and is a proprietary rules-based approach that attempts to outperform by optimizing the option selection process. There are three factors that drive the option selection process: strike price, expiration date and expected volatility. Options are sold on 100% of the underlying equity notional value at all times. Glenmede looks to add alpha by selecting a better option to sell using a variable strike/month approach. The strike price of the option sold is determined through analysis on the underlying market volatility. Glenmede prices the entire S&P 500 option matrix using proprietary models to find anomalies in the option market. Three main factors in option selection process: 1.) Volatility - future expectation vs. what is current implied by the market influences strike selection. 2.) Time - forward implied volatility curve influences which month. 3.) Skew – influences month and strike.

- **Parametric** (Replication and Semi-Active): Parametric Portfolio Associates (PPA) is 93% held by Eaton Vance, and focuses 100% on option overlay strategies. The remainder is held by current and former employees. Parametric functions as an independent and autonomous business unit with distribution, operational and administrative support provided by Eaton Vance. Parametric Risk Advisors (PRA) is the options-based affiliate of PPA in which Parametric owns 70% (with employees owning the remainder). For the EBMUD mandate, PPA would manage the underlying equity portfolio, while PRA would implement the options overlay portion. As a firm, PPA/PRA managing approximately \$3.1 billion in call writing strategies. Parametric utilizes a semi-active strategy referred to as DeltaShift methodology, which uses a fixed “delta” selection methodology for options. The strategy effectively indexes strikes to volatility; ii) at times captures and realizes profits prior to written option maturity; and iii) aggressively closes out losing positions to mitigate potential outlier losses that are inherent to a “sell and hold” option programs (i.e. BXM replication). The underlying equity would be an S&P 500 replication portfolio. Parametric also expressed their willingness to provide a straight BXM replication product in which they would strictly follow the methodology of the BXM index, utilizing an S&P 500 replication portfolio as the underlying equity, with S&P 500 Index calls as the options overlay portion. Parametric currently manages over \$125 million for PCA clients in their semi-active strategy.
- **Van Hulzen** (Fully Active): Van Hulzen Asset management is a private company, 67% employee owned. Van Hulzen specializes in Covered Call strategies for high net worth individuals and small institutions. The firm is still relatively small with only \$365 million under management of which \$105 million are in Covered Call strategies. That being said the firm is growing its Covered Call assets at a healthy clip (approximately 40% per year) and has devoted internal resources to the strategy far in excess of its current AUM. The fully active strategy being proposed, seeks to own high quality stocks and use call options as an exit strategy at their fundamental valuation targets. The underlying equities owned are highly correlated with the S&P 500 but often with significantly lower volatility than the index. Using both a lower volatility underlying portfolio as well as a call writing strategy greatly reduces the volatility of the portfolio (historical 80% of the BXM index). The portfolio management team’s fundamental process analyzes companies for their cash flow return on investment and the

effectiveness of management's allocation of capital, especially as it relates to shareholder yield. Van Hulzen pays special attention to a company's reliability and predictability with emphasis on long term value creation and consistent cash flow returns. Van Hulzen utilizes an internally developed risk model that analyzes each holding. The process seeks to establish tolerable downside risk for each security, along with a fundamental upside target. Stocks are ranked based on their upside/downside score. Calls are written at fundamental total return targets based on a "warranted price" target which is re-created through options out-of-money upside and option premium.

Table 4: Candidate Manager Performance
As of 6/30/2013, gross of fees

Manager	YTD	1 Yr	3 Yr	5 Yr	7 Yr	2007	2008	2009	2010	2011	2012
Van Hulzen	10.1	13.3	13.2	8.5	6.7	6.0	-24.6	24.5	17.1	4.6	8.3
Parametric	9.4	13.9	16.6	10.3	8.8	7.8	-21.6	31.9	10.0	8.9	12.6
Gateway	6.4	10.5	13.6	5.5	---	---	---	14.6	13.0	6.5	11.3
Glenmede	5.6	10.2	15.0	6.8	6.4	9.3	-29.2	25.5	14.8	8.6	10.4
Guggenheim	4.2	5.1	11.1	6.4	4.3	2.7	-28.2	28.6	11.0	5.6	5.8
Analytic Investors	15.7	21.9	18.6	---	---	---	---	---	12.2	0.7	17.9
Geode	7.5	10.9	---	---	---	---	---	---	---	6.7	10.5
Main	3.0	7.1	11.9	5.8	5.6	8.2	-21.3	21.2	10.8	5.2	9.0
Allianz	3.0	7.4	7.4	---	---	---	---	24.5	12.4	-2.5	6.9
Gargoyle	6.4	11.9	12.4	7.4	5.6	8.3	-18.1	23.1	11.6	2.5	13.6
MD Sass	7.5	12.4	11.2	---	---	---	---	---	11.2	6.2	6.9
FAMCO	6.3	8.5	12.9	4.5	4.5	10.2	-28.9	17.5	10.1	6.8	9.1
BXM Index	4.9	5.3	10.8	3.3	3.6	6.6	-28.7	25.9	5.9	5.7	5.2
S&P 500 Index	13.8	20.6	18.5	7.0	5.7	5.5	-37.0	26.5	15.1	2.1	16.0

Bold indicates recommended finalist

Source: Manager RFI's, MPI

**Table 5: 3-Year Candidate Manager Performance Statistics
as of 6/30/2013, gross of fees**

	Excess Ann. Return, %	Ann. StdDev, %	Loss Frequency, %	Alpha, %	Sharpe Ratio	Batting Avg.	Down Mkt Capture Ratio, %	Up Mkt Capture Ratio, %	Info Ratio	Ann. Semi Stdev, %	Max Drawdown Return	Sortino Ratio
Van Hulzen	2.42	8.04	22.22	4.74	1.58	0.61	60.54	94.36	0.62	4.04	-9.08	12.96
Parametric	5.73	10.20	25.00	5.25	1.55	0.72	85.36	124.12	2.39	5.29	-11.66	12.18
Gateway	2.73	7.34	22.22	5.58	1.76	0.61	53.57	92.77	0.68	3.59	-8.46	18.63
Glenmede	4.13	9.68	22.22	4.50	1.48	0.69	77.17	111.42	1.40	5.60	-10.91	10.40
Guggenheim	0.26	9.52	30.56	0.87	1.14	0.53	96.35	99.64	0.15	5.19	-11.74	5.30
Analytic Investors	7.83	15.08	36.11	5.39	1.21	0.64	125.37	156.45	0.84	7.91	-18.18	6.06
Geode	---	---	---	---	---	---	---	---	---	---	---	---
Main	1.08	10.27	27.78	1.22	1.14	0.58	80.89	96.70	0.37	5.98	-11.65	5.19
Allianz	-3.46	8.47	30.56	-0.59	0.87	0.42	73.77	68.93	-0.73	5.28	-13.11	2.89
Gargoyle	1.62	7.62	25.00	4.65	1.57	0.64	66.98	93.09	0.35	4.09	-10.49	12.49
MD Sass	0.36	9.00	30.56	4.05	1.21	0.44	65.82	85.79	0.05	4.38	-5.60	6.22
FAMCO	2.06	9.56	36.11	3.35	1.31	0.50	76.19	99.77	0.47	4.76	-10.98	7.54
BXM Index	0.00	10.04	30.56	0.00	1.07	0.00	100.00	100.00	---	5.52	-12.72	4.50
S&P 500 Index	7.63	13.57	30.56	5.39	1.31	0.69	119.62	152.25	1.08	7.05	-16.26	7.57

Source: Manager RFI's, MPI

**Table 6: 5-Year Candidate Manager Performance Statistics
as of 6/30/2013, gross of fees**

	Excess Ann. Return, %	Ann. StdDev, %	Loss Frequency, %	Alpha, %	Sharpe Ratio	Batting Avg.	Down Mkt Capture Ratio, %	Up Mkt Capture Ratio, %	Info Ratio	Ann. Semi Stdev, %	Max Drawdown Return	Sortino Ratio
Van Hulzen	5.12	10.63	25.00	5.71	0.79	0.62	57.69	86.33	0.77	7.45	-24.75	2.40
Parametric	6.93	14.07	31.67	6.71	0.75	0.70	85.12	121.87	1.78	9.65	-26.59	2.09
Gateway	2.18	12.37	30.00	2.55	0.48	0.58	77.26	89.47	0.50	9.52	-31.32	0.97
Glenmede	3.43	14.27	26.67	3.43	0.51	0.65	87.58	105.92	0.93	10.78	-34.34	1.07
Guggenheim	3.03	12.94	31.67	3.16	0.52	0.60	86.58	102.83	1.07	9.05	-27.16	1.15
Analytic Investors	---	---	---	---	---	---	---	---	---	---	---	---
Geode	---	---	---	---	---	---	---	---	---	---	---	---
Main	2.49	13.46	35.00	2.75	0.47	0.52	84.05	97.55	0.50	9.53	-27.21	0.96
Allianz	---	---	---	---	---	---	---	---	---	---	---	---
Gargoyle	4.07	11.65	30.00	4.57	0.65	0.63	73.07	95.25	0.67	8.41	-25.37	1.65
MD Sass	---	---	---	---	---	---	---	---	---	---	---	---
FAMCO	1.14	13.98	38.33	1.43	0.36	0.50	92.12	98.28	0.22	10.36	-35.33	0.64
BXM Index	0.00	14.46	35.00	0.00	0.28	0.00	100.00	100.00	---	10.89	-33.01	0.43
S&P 500 Index	3.67	18.42	35.00	3.51	0.45	0.60	119.78	141.00	0.46	13.08	-41.82	0.83

Source: Manager RFI's, MPI

**Table 7: 7-Year Candidate Manager Performance Statistics
as of 6/30/2013, gross of fees**

	Excess Ann. Return, %	Ann. StdDev, %	Loss Freque ncy, %	Alpha, %	Sharpe Ratio	Batting Avg.	Down Mkt Capture Ratio, %	Up Mkt Capture Ratio, %	Info Ratio	Ann. Semi Stdev, %	Max Drawdo wn Return	Sortino Ratio
Van Hulzen	3.15	10.36	27.38	3.54	0.79	0.58	69.56	90.40	0.51	7.42	-32.76	1.70
Parametric	5.27	12.64	29.76	5.13	0.75	0.67	86.08	117.66	1.35	8.77	-31.28	1.93
Gateway	---	---	---	---	---	---	---	---	---	---	---	---
Glenmede	2.84	12.78	26.19	2.82	0.51	0.64	88.83	106.14	0.84	9.67	-38.36	1.15
Guggenheim	0.74	11.82	33.33	0.91	0.52	0.54	89.80	94.82	0.20	8.51	-35.29	0.75
Analytic Investors	---	---	---	---	---	---	---	---	---	---	---	---
Geode	---	---	---	---	---	---	---	---	---	---	---	---
Main	2.06	12.07	33.33	2.22	0.47	0.52	83.42	96.64	0.45	8.64	-32.49	1.05
Allianz	---	---	---	---	---	---	---	---	---	---	---	---
Gargoyle	2.08	10.75	33.33	2.50	0.65	0.60	74.02	88.27	0.33	7.77	-27.10	1.23
MD Sass	---	---	---	---	---	---	---	---	---	---	---	---
FAMCO	0.90	12.76	36.90	1.09	0.36	0.54	94.95	100.54	0.18	9.49	-39.58	0.71
<i>BXM Index</i>	<i>0.00</i>	<i>12.89</i>	<i>32.14</i>	<i>0.00</i>	<i>0.28</i>	<i>0.00</i>	<i>100.00</i>	<i>100.00</i>	<i>NA</i>	<i>9.81</i>	<i>-35.81</i>	<i>0.53</i>
<i>S&P 500 Index</i>	<i>2.10</i>	<i>16.71</i>	<i>35.71</i>	<i>2.09</i>	<i>0.45</i>	<i>0.57</i>	<i>124.12</i>	<i>136.52</i>	<i>0.28</i>	<i>11.99</i>	<i>-50.95</i>	<i>0.70</i>

Source: Manager RFI's, MPI

**Table 8: Candidate Annual Management Fee Estimates
Based on \$75 million mandate**


Non – Replication Strategies	Fee (bps)	Replication Strategies	Fee (bps)
Van Hulzen	25	Gateway	20
Parametric	30.6	Parametric	23.5
Gateway	40	Rampart	21
Glenmede	45	Gargoyle	15
Guggenheim	75		
Analytic Investors	16.3		
Geode	15		
Main	50		
Allianz	75		
Gargoyle	50		
MD Sass	66.7		
FAMCO	40		



Summary of Quantitative Review

Statistical evaluation is an important component of analysis as it establishes a baseline of common characteristics by which to compare investment firm candidates. Differences are assessed between candidates, benchmarks (or indices), and/or peer universes. PCA views these quantitative factors over various periods based on market cycles and typical investment horizons, respectively. Evaluation is predicated on the nature of the mandate being considered. For example, risk control is considered to be of particular importance and is central to many of the factors listed below. Due to the presence of different investment approaches, as well as different lengths of track records, PCA implemented a small qualitative adjustment to the managers' quantitative scores, if applicable. These adjustments helped to better align the scores with the desired EBMUD mandate structure. The quantitative factors were analyzed over a 7-year period, a 5-year period, and a 3-year period. Particular attention was paid to returns during periods in which equities demonstrated significant negative returns (bear market). The selected time periods are representative of a full market cycle.

- **Alpha:** Measures the added value by a manager. A positive alpha indicates that a manager has performed better than its Beta would predict. In contrast, a negative alpha indicates the fund has underperformed, given the expectations set by Beta.
- **Batting Average:** Measures the percentage frequency with which the manager has beaten the benchmark over a given time frame. Also known as "the probability of success," it is the ratio between the number of periods where the manager outperforms a benchmark and the total number of periods.
- **Down Market Capture Ratio:** The portion of the market's performance that was captured by the manager using only periods where the market return is negative. A down market capture of less than 100% is considered desirable.
- **Excess Semi-Standard Deviation:** Represents the standard deviation of all negative excess returns, relative to the benchmark. This is usually expressed as a percentage which may be annualized over a number of years or represent a single period.
- **Information Ratio:** A measure of the manager's returns, above or below the benchmark, relative to the volatility of those excess returns (tracking error).
- **Loss Frequency:** Measure of absolute performance. Loss frequency is the percentage of time that a manager posts negative returns.
- **Max Drawdown Return:** Measures the worst period of "peak to valley" performance for the series regardless of whether or not the drawdown consisted of consecutive months of negative performance.
- **Return:** Is a measure of the appreciation or depreciation of the value of a portfolio over a given time period. This is usually expressed as a percentage which may be annualized over a number of years or represent a single period.

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- **Semi-Standard Deviation:** Is a measure of risk using only the variance of returns below a target rate, such as the benchmark.
 - **Sharpe Ratio:** A measure of the manager's excess return, above or below the risk-free rate, relative to the total variability of the manager's returns.
 - **Sortino Ratio:** Similar to the Sharpe Ratio - a measure of the manager's excess return, above or below the risk-free rate, relative to the total variability of the manager's *negative* returns.
 - **Up Market Capture Ratio:** The portion of the market's performance that was captured by the manager using only periods where the market return is positive. An up market capture of greater than 100% is considered desirable.