

**MercedCERA INVESTMENT SUBCOMMITTEE MEETING AGENDA
THURSDAY, SEPTEMBER 10, 2020
MERCED COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
TELEPHONE NUMBER: 1-310-372-7549, CONFERENCE CODE: 975839**

Important Notice Regarding SARS-COV-2

Based on guidance from the California Department of Public Health and the California Governor's Office, in order to minimize the spread of the SARS-COV-2 virus, MercedCERA's building will be closed to the public during MercedCERA Board meetings. Members of the MercedCERA Board will participate in this meeting offsite via conference call. Members of the public may listen to the meeting and offer public comment telephonically by calling into the telephone number provided above and entering the stated conference code. If you have any issues participating in the meeting telephonically or require reasonable accommodation for your participation, please contact MercedCERA staff at 209-726-2724.

CALL TO ORDER: Immediately following MercedCERA Administrative Meeting.

- ROLL CALL
Absent:
Present:

- APPROVAL OF MINUTES – August 27, 2020 Subcommittee Meeting.

PUBLIC COMMENT

Members of the public may comment on any item under the Board's jurisdiction. Matters presented under this item will not be discussed or acted upon by the Board at this time. For agenda items, the public may make comments at the time the item comes up for Board consideration. Persons addressing the Board will be limited to a maximum of five (5) minutes in total. Please state your name for the record.

BOARD ACTION¹/DISCUSSION

Pursuant to Govt. Code § 31594 and MercedCERA's Investment Objectives & Policy Statement due diligence analysis requirement:

1. Review and possible action on MercedCERA's US equities sleeve, including analysis on small cap managers – Meketa Group.
2. Review and possible action on MercedCERA's Hedge Fund Portfolio – Cliffwater.

INFORMATION ONLY

Any actions/recommendations taken/made by this subcommittee will be brought to the full Board of Retirement for approval.

ADJOURNMENT:

¹ "Action" means that the Board may dispose of any item by any action, including but not limited to the following acts: approve, disapprove, authorize, modify, defer, table, take no action, or receive and file.

All supporting documentation is available for public review online at www.co.merced.ca.us/retirement

Any material related to an item on this Agenda submitted to the Merced County Employees' Retirement Association, after distribution of the Agenda packet is available for public inspection at www.co.merced.ca.us/retirement

Persons who require accommodation for a disability in order to review an agenda, or to participate in a meeting of the Merced County Employees' Retirement Association per the American Disabilities Act (ADA), may obtain assistance by requesting such accommodation by emailing the Merced County Employees' Association at MCERA@co.merced.ca.us, or telephonically by calling (209) 726-2724. Any such request for accommodation should be made at least 48 hours prior to the scheduled meeting for which assistance is requested.

**MercedCERA INVESTMENT SUBCOMMITTEE MEETING AGENDA
THURSDAY, AUGUST 27, 2020
MERCED COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
TELEPHONE NUMBER: 1-310-372-7549, CONFERENCE CODE: 975839**

ROLL CALL: 9:17 A.M

Subcommittee Board Members Present: Ryan Paskin, Karen Adams, David Ness, Mike Rhodes.

Staff: Kristen Santos, Alexis Curry, Mark Harman and Ninebra Maryoonani. **Consultants:** Mika Malone, Paola Nealon, and Matt Curran with Meketa Group. **Absent:** none.

APPROVAL OF MINUTES – April 29, 2020.

Motion to approve the minutes from the April 29, 2020 subcommittee meeting as presented.

Adams/Ness U/A (4-0)

PUBLIC COMMENT

No Comments.

OPEN SESSION

1. Review and discussion of MercedCERA's US Equities Sleeve – Meketa Group.

The MercedCERA Subcommittee voted on the following:

- a. To bring the termination of manager DFA to the full Board of Retirement on September 24, 2020 MercedCERA Investment Meeting.
- b. To bring Alternative #1 (pp. 11 of 13) from US Equities sleeve presentation by Meketa to the full Board of Retirement on September 24, 2020 with interim analysis by subcommittee to review/compare manager PanAgora US Small Cap Stock Selector with other small cap active managers to be presented by Meketa at the September 10, 2020 Investment Subcommittee Meeting.

Ness/Rhodes UN (4-0)

INFORMATION SHARING

- Request by Trustee Paskin to invite Cliffwater to September 10, 2020 Investment Subcommittee Meeting to discuss and review MercedCERA's Hedge Fund Portfolio performance and managers.
- There will be an Investment Subcommittee Meeting on September 10, 2020 immediately following the MercedCERA Administrative meeting.

ADJOURNMENT

The meeting adjourned at 10:06AM

Respectfully submitted,

Ryan Paskin, Chair

Date

Small Cap Core Manager Considerations

Introduction

As the final part of Meketa's Initial Fund Review, we reviewed the domestic equity portfolio.

The Sub-Committee discussed the roster and exposures of the domestic equity program at their August meeting, and requested additional analysis of PanAgora compared with a couple of other higher tracking error small cap managers.

The Sub-Committee voted to recommend to the Board to terminate DFA, therefore that strategy is not included in this analysis.

We hope the Sub-Committee finds this analysis productive. A formal search could be conducted based on this information, or the Sub-Committee could elect to bring a recommendation to the Board at the September 24 meeting based on this, or other requested analysis.

Investment Manager Overview

	Champlain Investment Partners	GW&K Investment Management	PanAgora Asset Management
Firm Location	Burlington, VT	Boston, MA	Boston, MA
Firm Inception	2004	1974	1985
Strategy Name	Champlain Small Cap	GW&K Small/Mid Strategy	US Small Cap Stock Selector
Strategy Inception	1996	2000	1996
Assets Under Management (Strategy)	\$5.1 billion	\$2.1 billion	\$1.1 billion
Asset Under Management (Firm)	\$14.4 billion	\$44.3 billion	\$34.2 billion

Champlain Investment Partners

Organization

- Scott Brayman, Judy O'Connell, and three former members of the NL Capital Management investment team founded Champlain in September 2004. Rosemont Investment Partners, a private equity firm that specializes in the asset management business, provided strategic capital to Champlain and owned initially 40% of the firm. The firm is located in Burlington, Vermont.
- The firm began clawing back equity from Rosemont in January of 2007 and became 100% employee-owned in October 2008. Women collectively own 43% of the firm.
- In June of 2015, Champlain entered into a ten-year, minority (low teens) revenue-sharing agreement with two outside partners to provide partial liquidity to the firm's founders. It is fully owned by employees and the agreement is set to expire in 2025.
- Scott Brayman, Managing Partner and CIO, and Judy O'Connell, Managing Partner and CEO, are the two senior members of the firm and largest owners. Scott Brayman and his investment team focus on managing the portfolios, while Judy O'Connell is responsible for the firm's strategic business decisions.
- Champlain has enjoyed robust growth since its inception. As of June 30, 2020, Champlain had total assets under management (AUM) of \$14.4 billion, with \$5.1 billion in Small Cap Core.

Champlain Investment Partners

Investment Team

- CIO Scott Brayman, CFA, has 34 years of investment management experience. Before starting Champlain, Mr. Brayman was a senior vice president at NL Capital Management, Inc. and a portfolio manager with Sentinel Advisors, Inc.
- There had been no turnover on the investment team since inception until three of the firm's senior analysts retired between 2015 and 2017.
- In anticipation of these retirements, the team was expanded with the addition of younger analysts. Three of these associate analysts worked closely with the senior analysts and gradually took on more responsibility.
- In addition, experienced technology and health care analysts were added to the team in 2014 and 2016. Champlain now has a 10-person investment staff supported by long time quantitative analyst Jason Wyman and one associate. The experience of the fundamental analysts ranges from 9 to 34 years.
- Health Care analyst Erik Giard-Chase left the firm in August 2019 in order to pursue a graduate degree in neuroscience. Jackie Williams was hired in July 2019 to replace him. She came from GW&K and has 20 years of investment experience.

Champlain Investment Partners

Investment Philosophy

- Champlain employs a “core” investment style. The investment team believes that investing in high quality companies at a discount to their estimated intrinsic value is the highest probability path to wealth creation.
- The firm focuses on companies with stable business models that generate consistent earnings and are less asset intensive, with high return on invested capital (ROIC), and superior relative growth.
- The investment team focuses on absolute returns as much as relative returns. They believe that avoiding significant losses is critical.
- For each sector of the market, Champlain has defined criteria or themes they are attracted to because they believe these attributes lead to long-term outperformance in the sectors.
- Champlain excludes certain parts of the index from the firm’s investable universe. These areas include REITs, Utilities, Telecomm Services, and pure Biotech. These exclusions can have a significant impact on relative performance during certain periods.

Champlain Investment Partners

Investment Process

- The investment process begins with a review of the S&P 600 and ideas are sourced from screens, brokers, trade shows, investment conferences, due diligence on companies, speaking with vendors and management, evaluating new product trends, attending industry and sell-side conferences, and reviewing M&A activity in an industry.
- In the first step of the process, the team looks at "sector factors" that are specific to each of the five major areas of the universe (technology, consumer, industrials, financials, and health care).
- The next step of the process is identifying specific company attributes that Champlain believes are attractive. The team looks for businesses with high returns on capital, strong balance sheets, credible and sincere managements, strong operating cash flows, superior relative growth, and predictable business models.
- The final step of the process is determining the fair value of each stock initially using relative valuation and historical M&A. The analysts also use DCFs. They typically seek a 20% to 25% discount to fair value.
- The small cap portfolio holds 65 to 100 stocks (currently 71), with a maximum position size of 3%. Each of the five major sectors must be within 75% to 125% of their weight in the S&P 600 or no more than 20% of the portfolio. Annual portfolio turnover during the last five years has been between 30% and 45%.

GW&K Investment Management

Organization

- GW&K Investment Management was founded in 1974 by Ben Gannet, Jack Welsh, and Harold Kotler as a municipal bond firm. It was 100% employee-owned until 2002 when BNY Mellon acquired the firm. GW&K partnered with Affiliated Managers Group ('AMG') to buy back the firm in 2008. Messrs. Gannet and Welsh have been retired since 2012 and 2009, respectively. Mr. Kotler currently serves as CEO/CIO. The firm is headquartered in Boston, MA.
- GW&K remains an affiliate of AMG, which owns 70% of the firm. Twelve GW&K employees, primarily at the senior management and portfolio management levels, hold the remaining 30%. No individual owner among the 12 partners owns more than 5% of the firm. Jeffrey Thibault and Daniel Miller are the only members of the domestic equity team with ownership stakes. The revenue split between AMG and GW&K is approximately 50/50.
- As of June 30, 2020, GW&K managed \$44.3 billion in assets. The firm comprises four separate investment teams. These teams are domestic equity, international equity, taxable bonds, and municipal bonds. The domestic equity team oversees \$6.5 billion in aggregate assets, including \$2.1 billion in Small Cap Core.

GW&K Investment Management

Investment Team

- The investment team is led by Portfolio Manager Jeffrey Thibault. Although both Mr. Thibault and Director of Equities Daniel Miller are listed as portfolio managers, Mr. Miller's primary responsibility is ensuring that GW&K retains its institutional quality from both a business and process standpoint. Mr. Thibault has ultimate decision-making authority on the Small Cap Core strategy and is the key investor.
- Jeffrey Thibault worked at BNY Mellon from 1998 to 2004, where he successfully navigated the tech bubble as co-portfolio manager on the firm's Small Cap Relative Growth Strategy. In 2004, Mr. Thibault joined the GW&K domestic equity team, where he served as an analyst on the Small Cap strategy under portfolio manager Ed White. Mr. Thibault was named portfolio manager of the SMID strategy upon launch in 2006. In 2007, Mr. Thibault took over portfolio management responsibilities from Mr. White on the Small Cap strategy. Mr. White subsequently retired.
- Mr. Thibault is supported by four sector-focused analysts who average 21 years of investment experience. The same team supports the firm's Small Cap Value, Core, and Growth strategies. Two of the analysts have portfolio management responsibilities on the other strategies.
- There has been only one notable departure from the investment team during the last 5 years. Health Care analyst Jackie Williams left GW&K in July of 2019 in order to relocate to Vermont. She was replaced by David Borah, who has 20 years of investment experience.

GW&K Investment Management

Investment Philosophy

- GW&K's style lies between core and GARP (growth at the right price). Mr. Thibault believes that businesses with long-term, sustainable earnings growth will demonstrate superior stock price performance over time. These companies generally have strong products or services in attractive niche markets. The team seeks to own these types of companies and hold them for the long-term.
- The team favors companies with recurring revenue (e.g. subscription services, consumables, contracts).
- The team seeks to invest in companies where management teams thoroughly understand the product or service attributes that their customers value. By having a customer-centric mentality, companies increase the odds of customer retention, while boosting their revenue and earnings sustainability.
- In periods of secular growth, the investment team focuses more on top-line growth stories. Margin expansion opportunities become more attractive when growth slows.
- The team considers a stock's valuation relative to its history. When a stock gets to one standard deviation above its 5-10 year average, it is considered overvalued. However, in periods when markets are richly valued, the team will consider a stock's valuation relative to peers.

GW&K Investment Management

Investment Process

- Analysts source the majority of ideas, but occasionally get them from Messrs. Thibault and Miller. To source ideas, the team augments its depth of experience and knowledge with quantitative screens to ensure it canvasses the entire opportunity set. Revenue growth in excess of the industry average, high gross margins relative to the industry, higher than average 3-5 year earnings, and revenue growth stability, are some of the attributes GW&K screens for. The initial universe is comprised of stocks that range from \$250M to \$4B in market cap, or within the Russell 2000 range.
- Due diligence is thorough. Fundamental analysis focuses on identifying leading players in niche markets by analyzing characteristics like market share accumulation, margin trends, and sales growth. The team also seeks companies with management teams skilled at capital allocation and focused on the product / service attributes that their customers value. Once the team identifies companies with these qualities, it analyzes the business' ROE components in order to evaluate the sustainability of growth. At the industry level, the team assesses what a company must do to maintain its competitive advantages.
- Speaking and visiting with company management is an important part of GW&K's research process and is required in order to purchase a stock. The investment team believes there is value in hearing management articulate their business strategies, current market conditions, competitive positioning, business outlook, and plans for sustaining growth. The team makes over 1,000 company contacts a year, including by phone, in GW&K's office, at conferences or at the company's facilities.
- GW&K has a long-term investment horizon. Annual portfolio turnover approximates 20% to 30% with name turnover of ~15%. The portfolio will consist of 55 – 85 stocks (currently 84).

PanAgora Asset Management

Organization

- PanAgora was founded in 1989 and first registered with the SEC in 1989. Power Financial, a diversified management and holding company, owns 80% of the firm and PanAgora employees own the remaining 20%. Panagora is overseen by a board of six individuals including Panagora CEO Eric Sorensen. An operating committee manages the firm's day-to-day operations.
- As of June 30, 2020, PanAgora had \$34.2 billion in assets under management. The firm offers a wide variety of products spanning the market cap spectrum in U.S. equity (34% of AUM), global and international equity (30%) and multi-asset/risk parity (36%).
- The Stock Selector suite offers three main strategies with an aggregate AUM of \$7.4 billion. The US Small Cap Core Stock Selector strategy had \$1.1 billion in AUM.

PanAgora Asset Management

Investment Team

- The Stock Selector team is led by Director Richard Tan. Mr. Tan's responsibilities include oversight and management of the team, conducting research to uncover new alpha sources, building quantitative stock selection models, and managing portfolios within the Stock Selector equity strategies. Before joining Panagora in 2008, he was in Wellington's quantitative investment group. While at Wellington, he developed screens, provided risk analysis, and created attribution reports for the fundamental portfolio managers. In the process, he learned how the fundamental PMs think. Mr. Tan has a BS in Computer Science from Shanghai Jiao Ton University in China, an MBA from BC, and an MS in Computer Science from Rutgers.
- Mr. Tan's team includes Wayne Qian, who, like Mr. Tan, is a Director with a computer science background. Portfolio manager Mike Chen has a Ph.D. in Electrical and Computer Engineering. Portfolio manager Lei Liu is a CFA charterholder and has an MSF from MIT.
- The team also has four analysts, all of whom conduct research to support the Stock Selector strategies. Three of the analysts have MS or master degrees in computer science. The one exception is Ted Eagan, who has an MD degree from Tufts and is a CFA charterholder. He had previously worked as a hardware design engineer at Teradyne. Mr. Eagan was hired by Mr. Tan to help develop the strategy's biotech industry model, which has become an increasingly important sector in the Russell 2000 index, currently accounting for a weighting of 10.5%.

PanAgora Asset Management

Investment Philosophy

- Panagora believes that systematically evaluating a business using quantitative techniques is the best way to capitalize on investment opportunities that arise from mispriced fundamentals. They also believe that stock prices are driven by a company's underlying business fundamentals. Quantitative techniques allow a manager to evaluate and process vast amounts of data with greater speed in order to form a more complete picture of a company's business. The Panagora team believes that traditional quant managers do not dig deep enough to fully assess a company's business.
- Panagora does not explicitly incorporate value, momentum and quality factors into their model because they argue that advances in computing power have commoditized these factors. The firm moved away from these factors 10 years ago.

PanAgora Asset Management

Investment Process

- PanAgora combines industry specific signals (signals are also called factors), fundamental signals, and event driven signals to derive an alpha score for each stock in the universe. All factors have to make economic sense. The investment team talks to industry consultants and sell-side analysts to understand what fundamental factors they deem important. The team then determines what can be quantified. Messrs Mussalli and Tan will also read conference call transcripts and visit companies to understand what factors investors consider when evaluating companies.
- The team has developed more than 10 industry specific models. For example, they have industry models for banks, insurance, biotech, semiconductors and IT hardware. The team has also developed sector models for those sectors that are homogenous, such as utilities. The fundamental signals work across all companies and are broken into three categories: governance and social, external forces, and market intelligence. Within governance and social, Panagora evaluates management quality, their honesty and intent, and business strategy. Within market intelligence, the team quantifies what the market thinks about the company by analyzing, for example, investor reaction to company news. Event driven signals are episodic and tend to be rare, such as corporate restructurings.
- The portfolio is constructed by picking top decile stocks in each sector based on the risk-adjusted alpha scores while maintaining rough sector neutrality. The portfolio holds 300 to 350 stocks (currently 329). Annual portfolio turnover is in the 60% to 100% range.

Historical Performance (net of fees)
(As of June 30, 2020)

	Champlain ¹	GW&K ²	PanAgora ³	Russell 2000
Trailing Period Returns (%):				
1 Year	-2.3	-0.9	-7.0	-6.6
3 Year	6.0	4.0	2.5	2.0
5 Year	9.0	6.4	4.1	4.3
7 Year	10.4	8.4	7.8	7.2
10 Year	13.4	12.5	12.9	10.5
Calendar Year Returns (%):				
2019	25.4	31.2	26.8	25.5
2018	-3.0	-13.6	-9.2	-11.0
2017	10.8	20.9	10.8	14.6
2016	28.7	17.8	20.4	21.3
2015	0.2	-2.6	-4.3	-4.4
2014	5.2	2.2	9.7	4.9
2013	37.7	43.6	45.5	38.8
2012	11.9	15.0	21.5	16.3
2011	4.9	2.5	2.1	-4.2
2010	25.6	30.6	34.7	26.9

¹ Champlain's institutional mutual fund's track record begins in September 2016. For the returns from January 1996 through August 2016, the returns were calculated by subtracting the mutual fund annual net expense ratio of 0.99% from the separate account composite's monthly return stream.

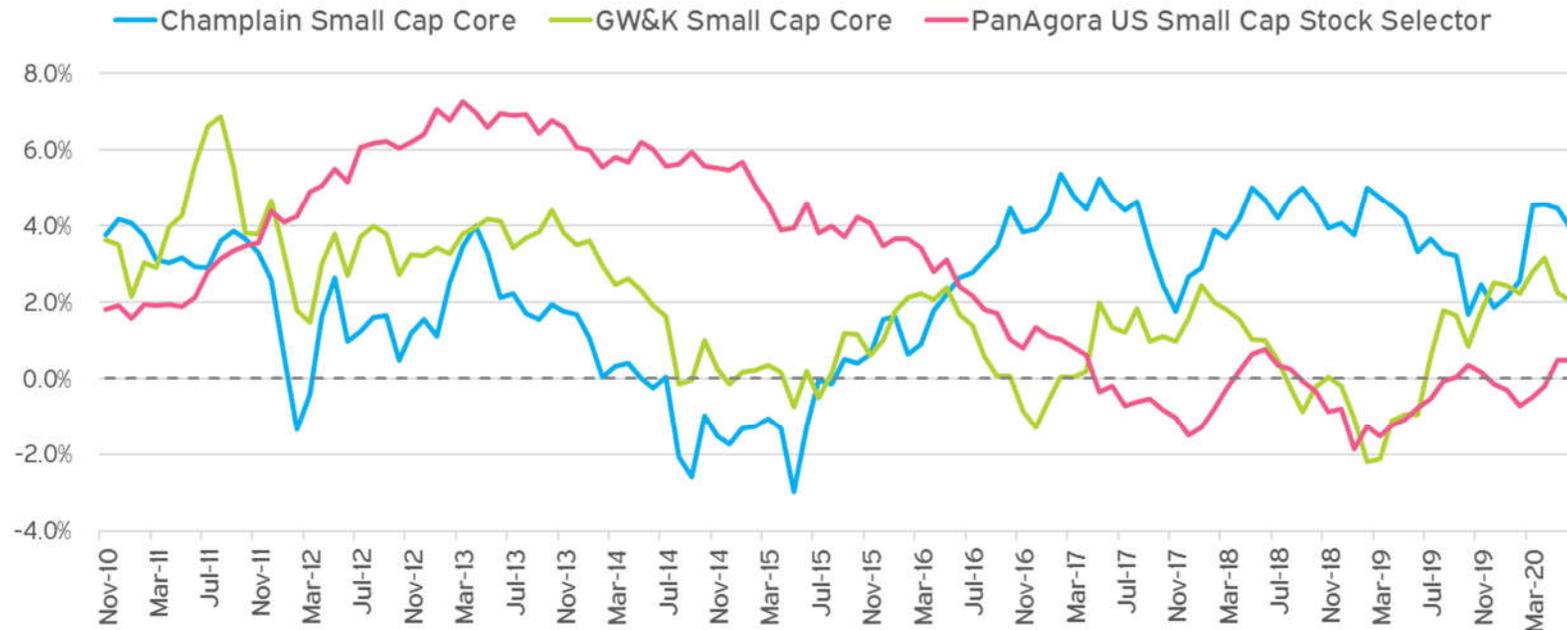
² GW&K's net of fee return stream was calculated by subtracting the commingled fund annualized fee of 0.80% from the separate account gross-of-fees composite in eVestment.

³ PanAgora's track record reflects the net-of-fee return for the Group Trust (eVestment) from June 2002 through September 2013. From October 2013 through June 2020, the track record reflects MCERA's account, net of fees.

Historical Performance (net of fees)
(As of June 30, 2020)

	Champlain/PanAgora 50%/50%	GW&K/PanAgora 50%/50%	Russell 2000
Trailing Period Returns (%):			
1 Year	-4.6	-3.7	-6.6
3 Year	4.3	3.3	2.0
5 Year	6.5	5.4	4.3
7 Year	9.1	8.1	7.2
10 Year	13.1	12.7	10.5
Calendar Year Returns (%):			
2019	26.1	29.2	25.5
2018	-6.1	-11.6	-11.0
2017	10.8	16.1	14.6
2016	24.4	19.0	21.3
2015	-2.2	-3.4	-4.4
2014	7.5	5.6	4.9
2013	41.6	44.4	38.8
2012	16.5	17.9	16.3
2011	3.5	2.3	-4.2
2010	29.8	32.3	26.9

Three-Year Rolling Excess Return (net of fees)
(December 1, 2007 – June 30, 2020)

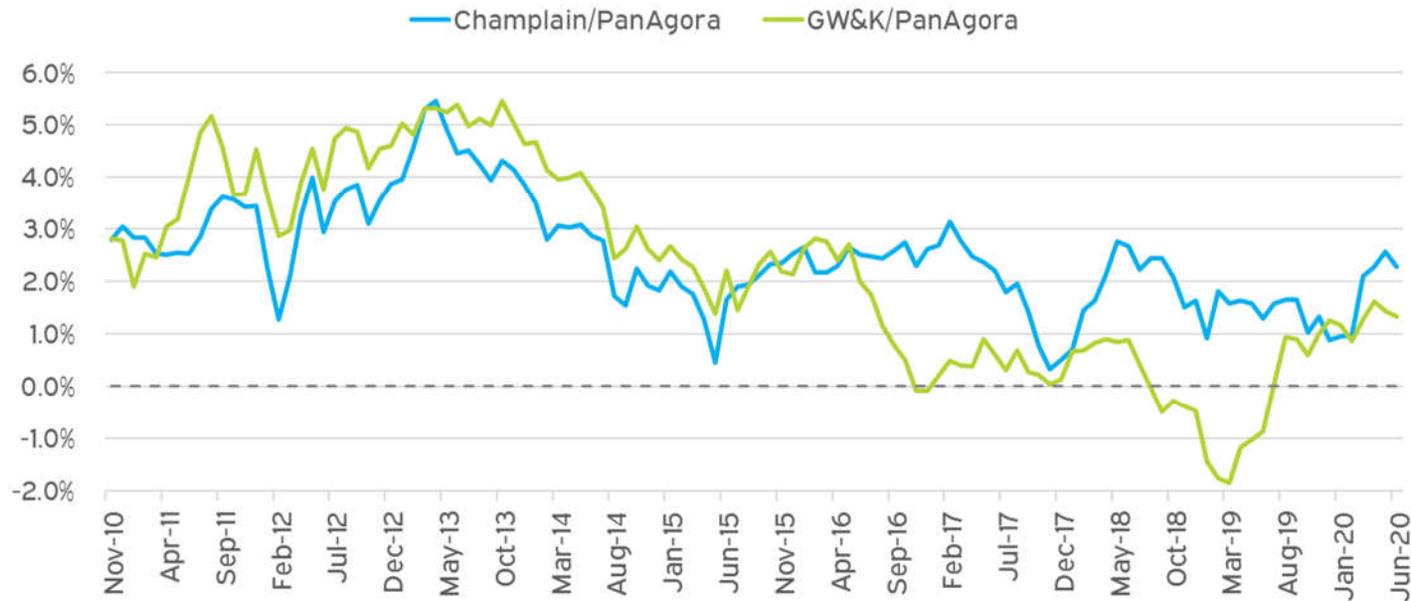


- Over the trailing common period¹ that began in December 2007, Champlain, GW&K, and PanAgora have outperformed the Russell 2000 index in 86% and 85%, and 76% of rolling 3-year periods, respectively. The average small cap core strategy² has outperformed the index in 54% of rolling three-year periods over that span.

¹ PM Jeffrey Thibault took sole lead of the GW&K Small Cap Core strategy in December 2007. The entire track record dates back to January 2000.

² The peer group is the eVestment US Small Cap Core Equity universe.

Three-Year Rolling Excess Return (net of fees)
(December 1, 2007 – June 30, 2020)



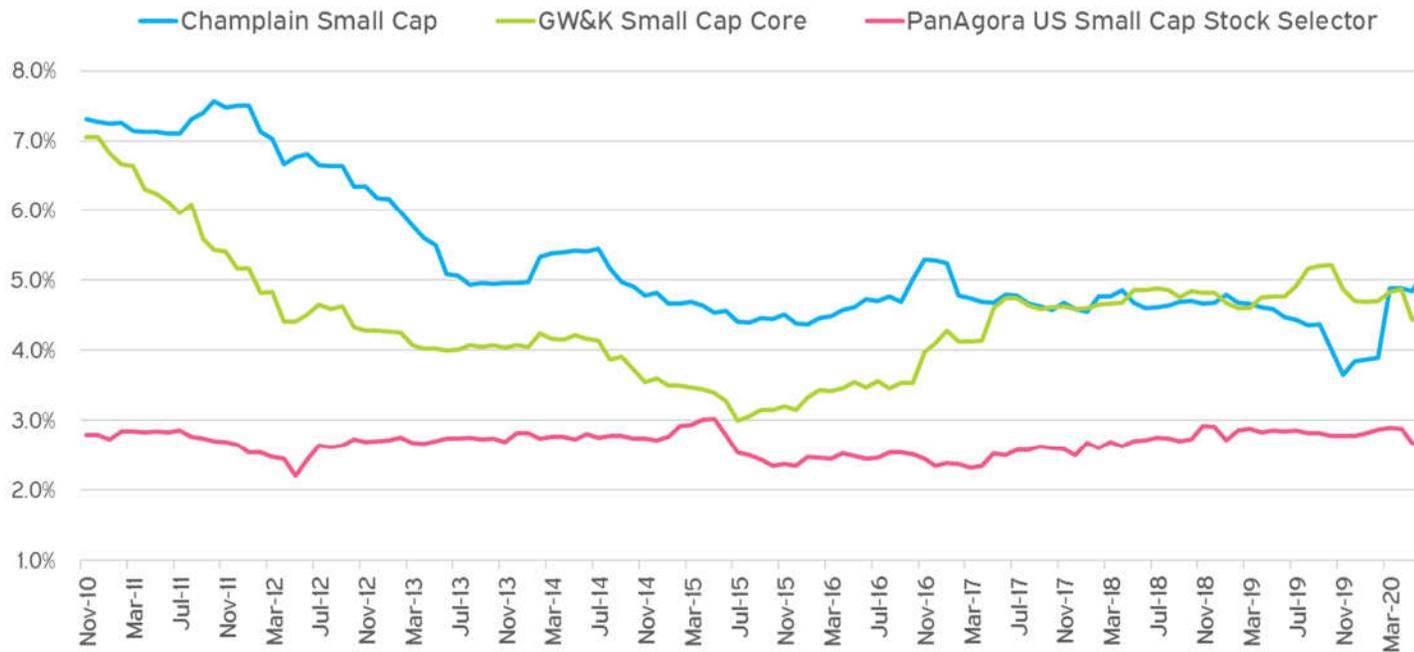
- Over the trailing common period¹ that began in December 2007, the Champlain/PanAgora combined portfolio² outperformed the Russell 2000 index in 100% of rolling 3-year periods. The GW&K/PanAgora portfolio outperformed the index in 89% of rolling 3-year periods. The average small cap core strategy³ has outperformed the index in 54% of rolling three-year periods over that span.

¹ PM Jeffrey Thibault took sole lead of the GW&K Small Cap Core strategy in December 2007. The entire track record dates back to January 2000.

² The combined portfolio track records reflect an equal weighted portfolio of both strategies.

³ The peer group is the eVestment US Small Cap Core Equity universe.

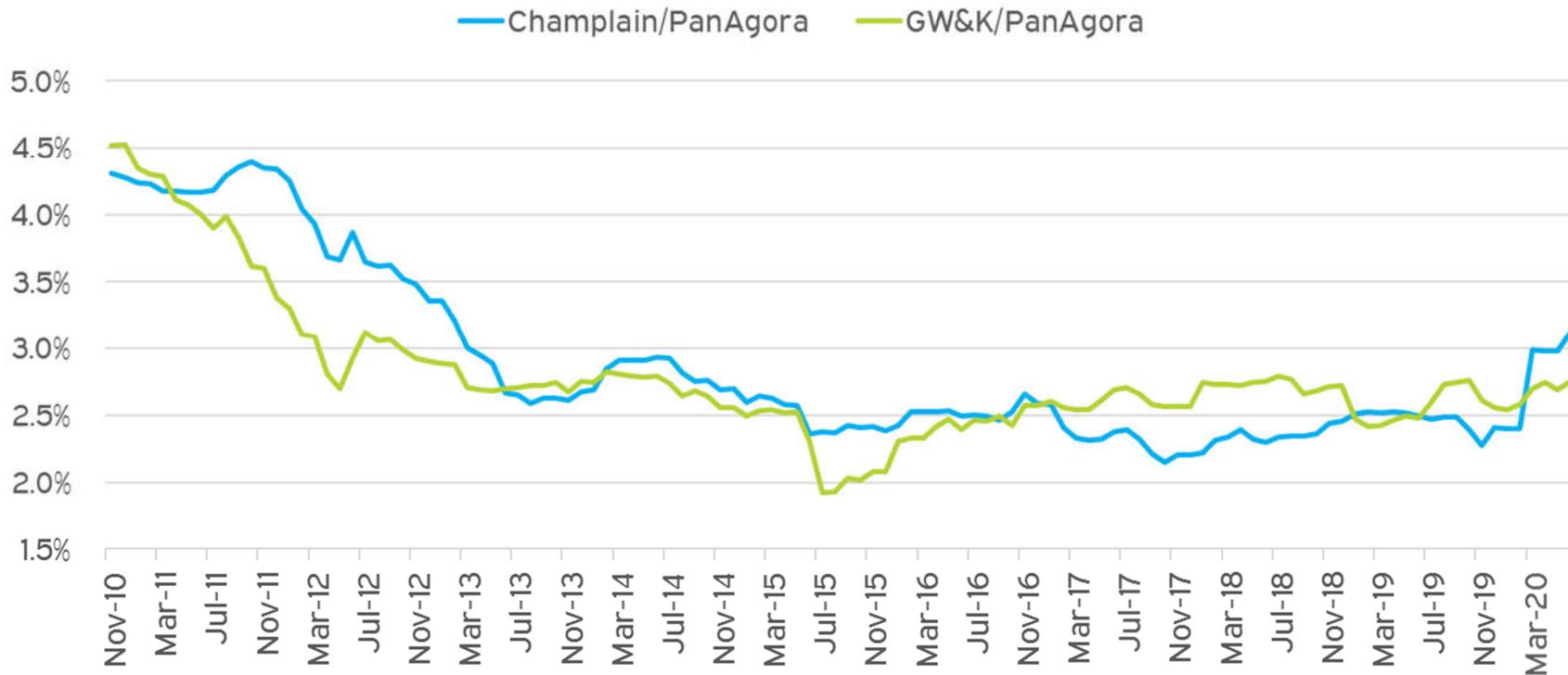
Three-Year Rolling Tracking Error (net of fees)
(December 1, 2007 – June 30, 2020)



- Over the trailing common period¹ that began in December 2007, PanAgora’s tracking error has consistently been less than the tracking errors of both Champlain and GW&K.

¹ PM Jeffrey Thibault took sole lead of the GW&K Small Cap Core strategy in December 2007. The entire track record dates back to January 2000.

Three-Year Rolling Tracking Error (net of fees)
(December 1, 2007 – June 30, 2020)



- Over the trailing common period¹ that began in December 2007, both of the combined portfolios have tracking errors that are typically above 2.0%.

¹ PM Jeffrey Thibault took sole lead of the GW&K Small Cap Core strategy in December 2007. The entire track record dates back to January 2000.

Portfolio Characteristics¹
 (As of June 30, 2020)

	Champlain	GW&K	PanAgora	Russell 2000
Price-Earnings Ratio	26.5	23.3	14.7	17.5
Price-Book Value Ratio	2.6	2.5	1.8	1.7
Dividend Yield	0.9%	1.2%	1.4	1.8%
Return-On-Equity	-1.1%	9.0%	2.2	2.0%
Historical Earnings Growth	10.3%	15.2%	21.8	16.8%
Projected Earnings Growth	19.3%	15.8%	12.5	10.8%
Weighted Average Market	\$3.1B	\$3.6B	\$2.0B	\$2.1B
Median Market Cap	\$2.2B	\$2.7B	\$817M	\$641M
Market Cap > \$5bn	8.5%	17.3%	2.6%	2.3%
Market Cap \$2bn - \$5bn	58.0%	53.0%	39.5%	44.8%
Market Cap < \$2bn	32.0%	27.8%	57.5%	52.9%
Cash	1.5%	1.9%	0.4%	--
Number of Holdings	71	84	324	2,005
Annual Expected Holdings Range	65 - 100	55 - 85	300-350	2,000
Active Share	94.0%	92.2%	81.2%	--
Top Sector Weightings	Technology 23% Health Care 21% Cons. Staples 16%	Health Care 20% Technology 17% Industrials 15%	Health Care 24% Financials 17% Technology 15%	Health Care 21% Financials 17% Industrials 15%
% of Portfolio in Top 10 Holdings:	26.8%	19.2%	13.0%	2.8%

¹ Source: FactSet. Champlain's holdings were sourced from eVestment Alliance.

Portfolio Characteristics¹
 (As of June 30, 2020)

	Champlain/PanAgora 50%/50%		GW&K/PanAgora 50%/50%		Russell 2000	
Price-Earnings Ratio	18.5		18.3		17.5	
Price-Book Value Ratio	2.1		2.1		1.7	
Dividend Yield	1.2%		1.3%		1.8%	
Return-On-Equity	0.5%		5.8%		2.0%	
Historical Earnings Growth	16.4%		18.2%		16.8%	
Projected Earnings Growth	16.1%		14.2%		10.8%	
Weighted Average Market	\$2.6B		\$2.8B		\$2.1B	
Median Market Cap	\$1.0B		\$1.1B		\$641M	
Market Cap > \$5bn	5.5%		9.9%		2.3%	
Market Cap \$2bn - \$5bn	48.7%		46.2%		44.8%	
Market Cap < \$2bn	44.8%		42.7%		52.9%	
Cash	1.0%		1.2%		--	
Number of Holdings	385		401		2,005	
Annual Expected Holdings Range	365 - 450		355 - 435		2,000	
Active Share	77.8%		75.7%		--	
Top Sector Weightings	Health Care	22%	Health Care	20%	Health Care	21%
	Financials	15%	Industrials	15%	Financials	17%
	Industrials	15%	Financials	15%	Industrials	15%
% of Portfolio in Top 10 Holdings:	14.1%		9.4%		2.8%	

¹ Source: FactSet. Champlain's holdings were sourced from eVestment Alliance.

Common Period Returns and Risk Statistics (net of fees)
(December 1, 2007 – June 30, 2020)

	Champlain	GW&K ¹	PanAgora	Russell 2000
Performance:				
Common Period Performance (%)	9.8	8.9	8.6	6.6
% of Periods above Index (%)	54.3	47.7	57.7	---
Best 3 Months (%)	22.7	24.9	26.3	29.6
Worst 3 Months (%)	-32.2	-27.9	-34.4	-35.7
Risk Measures²:				
Standard Deviation (%)	17.8	18.5	20.7	20.8
Tracking Error (%)	5.6	5.1	2.7	---
Beta	0.83	0.86	0.99	---
Correlation to Benchmark	0.97	0.97	0.99	---
Downside Deviation (%)	12.4	12.9	14.4	15.0
Upside Capture (%)	89.2	88.5	102.6	---
Downside Capture (%)	82.6	84.8	96.5	---
Risk-Adjusted Performance²:				
Jensen's Alpha (%)	3.8	2.5	2.8	---
Sharpe Ratio	0.51	0.43	0.44	0.29
Information Ratio	0.57	0.39	0.44	---

- All of the managers have outperformed the Russell 2000 index over the common period. Champlain has generated the highest returns over this period with a lowest standard deviation and beta.
- PanAgora has the lowest tracking error. GW&K has the most favorable worst 3 months metric.

¹ PM Jeffrey Thibault took sole lead of the GW&K Small Cap Core strategy in December 2007

² The benchmark used for all calculations is the Russell 2000 index.

Common Period Returns and Risk Statistics (net of fees)
(December 1, 2007 – June 30, 2020)

	Champlain/PanAgora 50%/50%	GW&K ¹ /PanAgora 50%/50%	Russell 2000
Performance:			
Common Period Performance (%)	9.2	8.7	6.6
% of Periods above Index (%)	58.9	52.3	---
Best 3 Months (%)	24.1	25.4	29.6
Worst 3 Months (%)	-33.3	-30.8	-35.7
Risk Measures²:			
Standard Deviation (%)	19.0	19.3	20.8
Tracking Error (%)	3.2	3.2	---
Beta	0.90	0.92	---
Correlation to Benchmark	0.99	0.99	---
Downside Deviation (%)	13.3	13.5	15.0
Upside Capture (%)	95.5	94.7	---
Downside Capture (%)	89.5	90.3	---
Risk-Adjusted Performance²:			
Jensen's Alpha (%)	2.9	2.3	---
Sharpe Ratio	0.45	0.42	0.29
Information Ratio	0.83	0.66	---

- Both of the combination portfolios have outperformed the Russell 2000 index over the common period. The Champlain/PanAgora portfolio has a higher return and higher information ratio.

¹ PM Jeffrey Thibault took sole lead of the GW&K Small Cap Core strategy in December 2007

² The benchmark used for all calculations is the Russell 2000 index.

Historical Trailing Risk¹ (net of fees)
(As of June 30, 2020)

	Champlain				GW&K				PanAgora			
	3 Yr.	5 Yr.	7 Yr.	10 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.
Information Ratio	0.77	0.96	0.65	0.58	0.45	0.44	0.28	0.47	0.18	-0.07	0.25	0.88
Tracking Error (%)	5.1	4.9	4.9	5.0	4.5	4.9	4.4	4.3	2.7	2.6	2.6	2.7
Sharpe Ratio	0.21	0.43	0.57	0.79	0.11	0.28	0.44	0.70	0.03	0.14	0.37	0.65
Standard Deviation (%)	20.3	18.2	16.7	16.2	21.8	18.7	17.2	17.0	23.3	20.4	18.8	18.9
- S. D. Index (%) ²	-2.6	-2.1	-2.0	-2.4	-1.1	-1.6	-1.4	-1.6	0.4	0.2	0.1	0.3
Jensen's Alpha (%)	3.6	4.7	3.7	4.0	1.9	2.3	1.7	2.8	0.5	-0.2	0.6	2.1
Beta	0.87	0.87	0.86	0.84	0.93	0.90	0.90	0.89	1.01	1.00	1.00	1.01
Correlation Coefficient	0.98	0.97	0.97	0.97	0.98	0.97	0.97	0.97	0.99	0.99	0.99	0.99
Upside Market Capture (%)	92.4	97.2	93.4	91.4	94.4	89.9	89.3	90.8	104.2	100.8	102.2	105.7
Downside Market Capture (%)	86.0	83.9	83.5	81.1	92.0	86.2	86.8	83.7	101.2	101.1	99.6	97.0

- PanAgora has generated the highest 10-year information ratio (IR). Champlain has the highest IR over all other trailing periods measured. PanAgora has the highest upside market capture metrics over all periods.
- Champlain and GW&K capture less than 90% of the downside over the trailing 5, 7, and 10-year periods. PanAgora has captured between 97% to 101% of the downside over those periods.

¹ The benchmark used for all calculations is the Russell 2000 index.

² The “- S.D. Index” metric measures the difference between the annualized standard deviation of the portfolio’s returns and the index returns. For example, Champlain’s 3-year standard deviation of returns was 2.6% lower than that of the Russell 2000 index (20.3% - 22.9%), which indicates a lower risk profile than the benchmark.

Historical Trailing Risk¹ (net of fees)
(As of June 30, 2020)

	Champlain/PanAgora 50%/50%				GW&K/PanAgora 50%/50%			
	3 Yr.	5 Yr.	7 Yr.	10 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.
Information Ratio	0.73	0.82	0.71	0.97	0.48	0.37	0.37	0.82
Tracking Error (%)	3.1	2.8	2.7	2.7	2.8	2.8	2.6	2.7
Sharpe Ratio	0.12	0.28	0.47	0.72	0.07	0.22	0.41	0.68
Standard Deviation (%)	21.6	19.1	17.5	17.3	22.4	19.3	17.8	17.7
- S. D. Index (%) ²	-1.3	-1.2	-1.2	-1.3	-0.5	-0.9	-0.9	-0.9
Jensen's Alpha (%)	2.1	2.3	2.2	3.0	1.2	1.1	1.2	2.5
Beta	0.94	0.93	0.93	0.92	0.97	0.94	0.94	0.94
Correlation Coefficient	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Upside Market Capture (%)	98.1	98.7	97.6	98.3	98.9	94.9	95.2	97.5
Downside Market Capture (%)	93.6	92.5	91.6	89.0	96.4	93.3	92.9	89.9

- The Champlain/PanAgora portfolio has the highest IR of all of the portfolios over all periods.
- Both combination portfolios have impressive downside capture ratios (<90%) over the trailing 10-year period.

¹ The benchmark used for all calculations is the Russell 2000 index.

² The “- S.D. Index” metric measures the difference between the annualized standard deviation of the portfolio’s returns and the index returns. For example, Champlain/PanAgora’s 3-year standard deviation of returns was 1.3% lower than that of the Russell 2000 index (21.6% - 22.9%), which indicates a lower risk profile than the benchmark.

Peer Rankings^{1,2} (net of fees)
(As of June 30, 2020)

	Champlain				GW&K				PanAgora			
	3 Yr.	5 Yr.	7 Yr.	10 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.
Excess Returns	14	4	7	7	25	16	23	13	40	54	36	10
Standard Deviation	87	87	88	93	70	76	79	84	49	41	42	40
Sharpe Ratio	11	4	5	2	24	15	19	7	39	55	43	17
Beta	84	83	86	91	66	75	73	78	39	33	30	23
Jensen's Alpha	17	4	6	3	25	16	21	10	39	57	46	15
Tracking Error	47	49	44	42	61	50	58	57	98	99	99	99
Information Ratio	16	3	6	6	23	15	20	11	35	56	23	1

- Champlain's excess returns rank in the top decile of the peer group over the 5, 7, and 10-year trailing periods. GW&K's excess returns consistently rank in the top quartile of the peer group.
- PanAgora's information ratio (IR) ranks in the top percentile over the trailing 10-year period. Champlain's IR ranks in the top decile over the trailing 7- and 10-year periods while GW&K ranks in the top quintile.
- PanAgora's tracking error is consistently toward the bottom of the peer group. GWK's tracking error is consistently slightly lower than the peer group median while Champlain's tracking is consistently higher than the median.

¹ The peer group is the eVestment US Small Cap Core Equity universe.

² All characteristics are ranked high to low. A 1st percentile ranking corresponds to the highest absolute number in the peer group.

Peer Rankings^{1,2} (net of fees)
(As of June 30, 2020)

	Champlain/PanAgora 50%/50%				GW&K/PanAgora 50%/50%			
	3 Yr.	5 Yr.	7 Yr.	10 Yr.	3 Yr.	5 Yr.	7 Yr.	10 Yr.
Excess Returns	24	15	12	8	31	30	29	13
Standard Deviation	74	70	70	79	61	65	65	70
Sharpe Ratio	23	15	14	5	30	32	26	10
Beta	66	59	59	67	54	56	57	64
Jensen's Alpha	25	16	13	9	31	33	30	13
Tracking Error	90	98	98	99	97	97	99	99

- The combined Champlain/PanAgora portfolio's excess returns rank in the top decile of the peer group while those of the GW&K/PanAgora portfolio rank in the top quintile.
- The betas of the combined portfolios are higher than their respective individual portfolios for both Champlain and GW&K. The tracking errors are lower in both combined portfolios.

¹ The peer group is the eVestment US Small Cap Core Equity universe.

² All characteristics are ranked high to low. A 1st percentile ranking corresponds to the highest absolute number in the peer group.

Fees and Terms

	Champlain	GW&K	PanAgora
Investment Vehicle Type	Mutual Fund	Commingled Fund	Commingled Fund
Fee	0.99%	0.80%	0.80%
Peer Group Percentile Rank ¹	83	56	56

- PanAgora and GW&K offer commingled funds at a fee that is slightly higher than the peer group median of 0.75%.
- Champlain’s mutual fund is more expensive than the other manager’s offerings. The net expense ratio ranks in the bottom quintile of the peer group.
- GW&K also offers a separate account and a mutual fund with higher fees.

¹ The peer group is the eVestment US Small Cap Core Equity universe.

Comparative Manager Assessment

	Champlain	GW&K	PanAgora
Organization	<ul style="list-style-type: none"> Champlain was founded in September 2004 by Scott Brayman, Judy O'Connell, and three former employees. The firm is 100% employee-owned. Total firm assets under management are \$14.4B. Small Cap Core has \$5.1 billion. 	<ul style="list-style-type: none"> Founded in 1974. AMG owns 70% of the firm., GW&K employees own the remaining 30%, but revenue is split 50/50. Total firm AUM of \$44.3B, including \$2.1B in Small Cap Core. 	<ul style="list-style-type: none"> PanAgora was founded in 1985. Power Financial owns 80%. PanAgora employees own the remaining 20%. As of June 30, 2020, PanAgora had \$34.2 billion in AUM. The US Small Cap Core Stock Selector strategy had \$1.1 billion.
Investment Team	<ul style="list-style-type: none"> CIO Scott Brayman, CFA, has 34 years of investment experience. Champlain has a 10-person investment staff. The experience of the fundamental analysts is between 10 and 35 years. 	<ul style="list-style-type: none"> Led by PM Jeffrey Thibault with 23 years of investment experience. Mr. Thibault has the ultimate decision-making authority. Supported by DOR Daniel Miller and four sector-focused analysts who average 21 years of investment experience. This team supports five other strategies. 	<ul style="list-style-type: none"> The Stock Selector team is led by Director Richard Tan. Mr. Tan's team includes Wayne Qian, Mike Chen, Ph.D. and Lei Liu, CFA. The team also has four analysts, all of whom conduct research to support the Stock Selector strategies.
Investment Philosophy	<ul style="list-style-type: none"> Core approach The investment team believes that investing in high quality companies with strong business models and managements at a discount to their estimated intrinsic value is the highest probability path to wealth creation. Absolute and relative return oriented. REITs, Utilities, Telecomm Services, and pure Biotech are excluded from the investable universe. 	<ul style="list-style-type: none"> Core approach. Mr. Thibault believes that businesses with long-term, sustainable earnings growth will demonstrate superior stock price performance over time. The team favors companies with recurring revenue (e.g. subscription services, consumables, contracts). They tend to avoid biotech due to non-earners. 	<ul style="list-style-type: none"> Panagora believes that systematically evaluating a business using quantitative techniques is the best way to capitalize on investment opportunities that arise from mispriced fundamentals. Quantitative techniques allow a manager to evaluate and process vast amounts of data with greater speed in order to form a more complete picture of a company's business.

Comparative Manager Assessment

	Champlain	GW&K	PanAgora
Investment Process	<ul style="list-style-type: none"> • Fundamentally driven, bottom-up approach. • The team reviews the S&P 600. Ideas also come from screens, brokers, trade shows, and investment conferences. • The team looks for businesses with high returns on capital, strong balance sheets, credible managements, strong operating cash flows, superior growth, and predictable business models. • Portfolio will hold 65 to 100 stocks (currently 71). • Annual portfolio turnover is 30%-60%. 	<ul style="list-style-type: none"> • Fundamentally driven, bottom-up approach. • Analysts source the majority of ideas, utilizing their experience and knowledge of the investment universe along with quantitative screens. • Fundamental analysis focuses on identifying leading companies in niche markets. Speaking and visiting with company management is required in order to purchase a stock. Due diligence is thorough. • Portfolio will own 55 to 85 stocks (currently 84). • Historical turnover averages 20% to 30%. 	<ul style="list-style-type: none"> • Quantitatively driven, bottom up approach. • PanAgora combines industry specific signals (factors), fundamental signals, and event driven signals to derive an alpha score for each stock. • The team has developed more than 10 models for specific industries, such as banks, insurance, and biotech. The fundamental signals work across all companies. Event driven signals are episodic and tend to be rare. • The portfolio holds 300 to 350 stocks (currently 329). Annual portfolio turnover is in the 60% to 100% range.
Investment Performance (December 2007 –June 2020)	<ul style="list-style-type: none"> • 9.8% net-of-fees annualized return and 3.2% excess return. • Highest information ratio (0.57). • Highest Jensen's alpha (3.8%). 	<ul style="list-style-type: none"> • 8.9% net-of-fees annualized return and 2.3% excess return. • Most favorable worst 3 months (-27.9%), • Lowest Jensen's alpha (2.5%) 	<ul style="list-style-type: none"> • 8.6% net-of-fees annualized return and 2.0% excess returns. • Lowest tracking error (2.7%). • Highest upside capture (103%).
Fees	<ul style="list-style-type: none"> • 0.99% 	<ul style="list-style-type: none"> • 0.80% 	<ul style="list-style-type: none"> • 0.80%

Appendix

Information Ratio: This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

Standard Deviation: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

Tracking Error: This statistic measures the standard deviation of excess returns relative to a benchmark. Tracking error is calculated by multiplying the standard deviation of the monthly excess returns of a portfolio relative to a benchmark by the square root of twelve in order to annualize. The higher the tracking error, the greater the volatility of excess returns relative to a benchmark.

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INVESTMENT ADVISORY SERVICES

Los Angeles • New York

Hedge Fund Investment Portfolio Review
Merced County Employees' Retirement Association

September 10, 2020

MCERA Hedge Fund Implementation Plan

MCERA transitioned from HFoFs to a direct program in 2017

Absolute return target increased from 5% to 10% in fall of 2018; managers were upsized and several managers were added

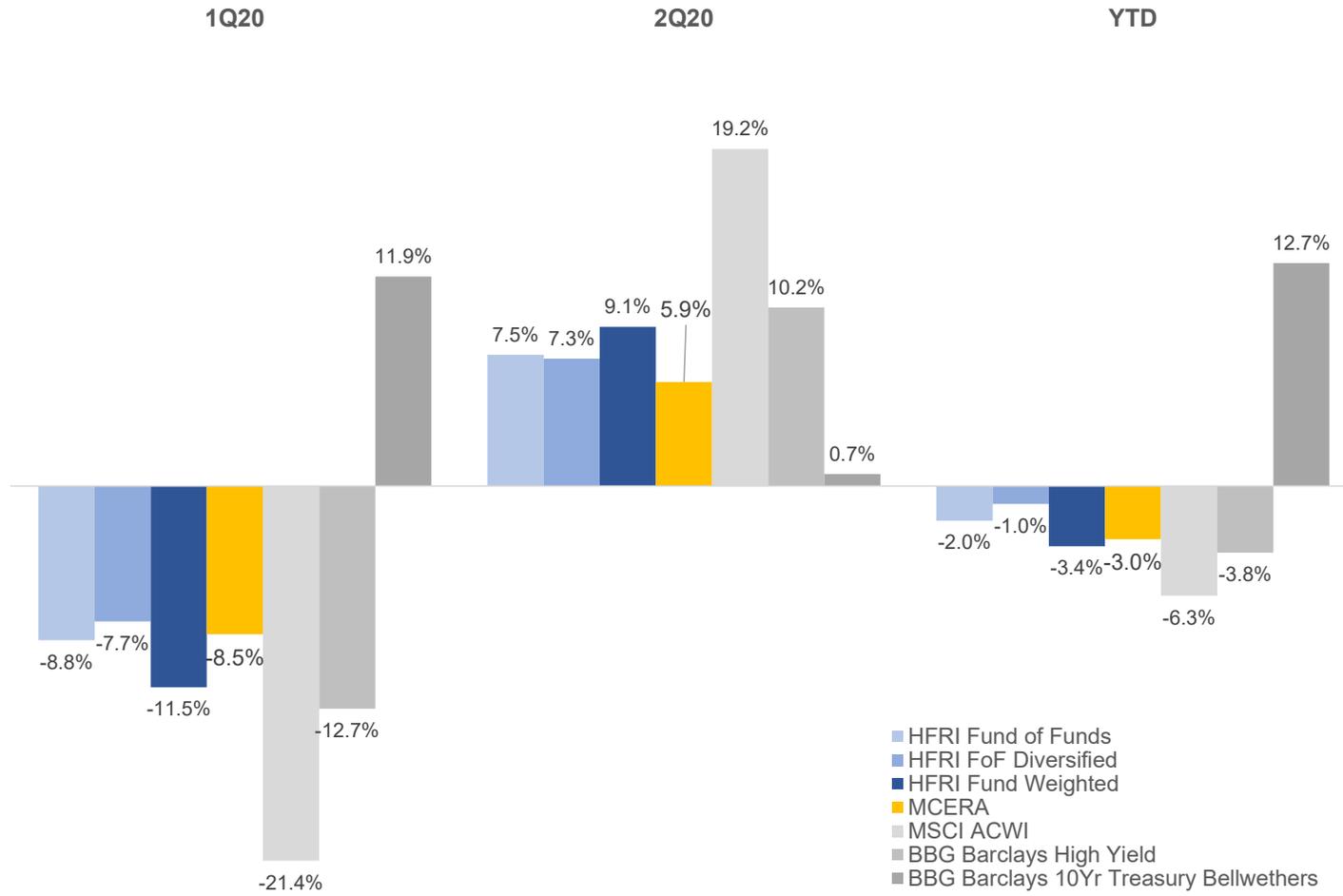
- Investment objective: LIBOR + 4%
- Asset class benchmark: HFRI FoF Index

Hedge Fund Portfolio Allocations

Manager	Strategy	Jul-20 MV (\$000)	%
KLS	Mkt Neutral	7,796	8%
Laurion	Mkt Neutral	10,937	12%
Taconic	Credit/Event	12,035	13%
Silver Point Capital	Credit/Event	12,299	13%
Archipelago Holdings Ltd	Eq L/S	12,587	14%
MW Eureka	Eq L/S	3,491	4%
MW Global Opps	Eq L/S	9,229	10%
Graham Absolute Return	Global Macro	7,170	8%
Winton	Global Macro	5,185	6%
Sculptor	Multi-Strat	11,700	13%
TOTAL ABSOLUTE RETURN		92,429	100%
Total Fund Est - Jul 31, 2020		928,415	
Absolute Return Target %		10%	
Absolute Return Target (\$000)		92,842	

YTD Jun 2020 Hedge Fund Performance

Hedge Fund, MCERA and Market Returns



As of June 30, 2020
 Source: Hedge Fund Research, Inc., Bloomberg, Cliffwater

MCERA Hedge Fund Performance – As of Jul 31, 2020

Fund	Market Value	Actual %	Jul	QTD	YTD	Returns 1 Year	3 Year	5 Year	Incep	Std Dev	Sharpe Ratio	Incep Date
Market Neutral												
KLS Diversified Fund LP	7,796,228	8.4%	1.03%	1.03%	-14.24%	-15.33%	-	-	-4.56%	11.97%	-0.49	Oct-17
Laurion Capital, Ltd.	10,937,229	11.8%	0.48%	0.48%	24.31%	24.11%	-	-	14.60%	7.90%	1.51	Jul-18
Market Neutral - HF Total	18,733,457	20.3%	0.71%	0.71%	0.52%	-0.35%	-	-	2.49%	5.89%	0.12	Oct-17
HFRI Relative Value (Total) Index			2.11%	2.11%	-2.62%	-1.14%	-	-	1.83%	6.96%	0.02	Oct-17
Credit/Distressed												
Silver Point Capital Fund, L.P.	12,298,791	13.3%	0.60%	0.60%	-0.36%	-0.02%	-	-	1.09%	7.98%	-0.07	Dec-17
Credit/Distressed - HF Total	12,298,791	13.3%	0.60%	0.60%	-0.36%	-0.02%	-	-	1.09%	7.98%	-0.07	Dec-17
HFRI ED: Distressed/Restructuring Index			1.89%	1.89%	-0.65%	-2.11%	-	-	0.70%	8.78%	-0.10	Dec-17
Event Driven												
Taconic Opportunity Fund L.P.	12,035,137	13.0%	0.30%	0.30%	-4.50%	-3.90%	-	-	-0.22%	7.55%	-0.23	Dec-18
Event Driven - HF Total	12,035,137	13.0%	0.30%	0.30%	-4.50%	-3.90%	-	-	-0.22%	7.55%	-0.23	Dec-18
HFRI Event-Driven (Total) Index			2.65%	2.65%	-3.70%	-2.08%	-	-	0.67%	11.99%	-0.03	Dec-18
Equity Long/Short												
Archipelago Partners, L.P.	12,586,668	13.6%	2.65%	2.65%	0.94%	4.59%	-	-	5.20%	8.57%	0.41	Sep-17
Marshall Wace Funds LP - MW Eureka (US) Fund	3,490,725	3.8%	3.37%	3.37%	2.82%	7.89%	-	-	5.85%	6.39%	0.61	Dec-17
Marshall Wace Funds LP - MW Global Opportunities (US) Fu	9,229,248	10.0%	1.33%	1.33%	-	-	-	-	2.55%	3.70%	-	Apr-20
Equity Long/Short - HF Total	25,306,641	27.4%	2.26%	2.26%	-0.63%	3.25%	-	-	4.81%	7.54%	0.40	Sep-17
HFRI Equity Hedge (Total) Index			3.68%	3.68%	0.31%	4.21%	-	-	3.64%	10.75%	0.21	Sep-17
Global Macro-Discretionary												
Graham Absolute Return Trading Ltd.	7,169,982	7.8%	4.02%	4.02%	-5.80%	-2.90%	-	-	0.89%	10.18%	-0.05	Sep-17
Global Macro-Discretionary - HF Total	7,169,982	7.8%	4.02%	4.02%	-5.80%	-2.90%	-	-	0.89%	10.18%	-0.05	Sep-17
HFRI Macro (Total) Index			3.48%	3.48%	2.87%	3.11%	-	-	2.24%	4.86%	0.08	Sep-17
Global Macro-Systematic												
Winton Fund Limited	5,185,338	5.6%	0.03%	0.03%	-16.82%	-16.54%	-	-	-4.84%	8.81%	-0.74	Nov-17
Global Macro-Systematic - HF Total	5,185,338	5.6%	0.03%	0.03%	-16.82%	-16.54%	-	-	-4.84%	8.81%	-0.74	Nov-17
HFRI Macro (Total) Index			3.48%	3.48%	2.87%	3.11%	-	-	1.98%	4.85%	0.03	Nov-17
Multi-Strategy												
Sculptor Domestic Partners II, L.P.	11,700,191	12.7%	1.30%	1.30%	7.56%	11.86%	8.15%	6.67%	7.00%	7.08%	0.81	Jul-14
Multi-Strategy - HF Total	11,700,191	12.7%	1.30%	1.30%	7.56%	11.86%	8.15%	6.67%	7.00%	7.08%	0.81	Jul-14
HFRI Relative Value (Total) Index			2.11%	2.11%	-2.62%	-1.14%	1.92%	2.81%	2.57%	5.13%	0.28	Jul-14
MCERA Hedge Fund Portfolio	92,429,537	100.0%	1.35%	1.35%	-1.66%	-0.06%	2.93%	2.53%	3.25%	5.44%	0.39	Jul-14
Benchmarks												
HFRI Fund of Funds Composite Index			2.83%	2.83%	1.20%	3.05%	2.86%	2.02%	2.34%	5.17%	0.23	Jul-14
Market Indices												
Libor3Month			0.02%	0.02%	0.51%	1.34%	1.92%	1.47%	1.26%	0.25%	-	Jul-14
Bloomberg Barclays US Aggregate Bond Index			1.49%	1.49%	7.72%	10.12%	5.70%	4.48%	4.10%	3.11%	0.91	Jul-14
Bloomberg Barclays US High Yield Bond Index			4.69%	4.69%	0.71%	4.13%	4.53%	5.88%	4.64%	7.63%	0.47	Jul-14
S&P 500 TR			5.64%	5.64%	2.38%	11.96%	12.01%	11.49%	11.02%	13.98%	0.73	Jul-14
MSCI AC World Index Free - Net			5.29%	5.29%	-1.29%	7.20%	6.99%	7.37%	6.30%	13.74%	0.42	Jul-14
MSCI EAFE - Net			2.33%	2.33%	-9.28%	-1.67%	0.63%	2.10%	1.35%	13.70%	0.08	Jul-14
MSCI EMF (Emerging Markets Free) - Net			8.94%	8.94%	-1.72%	6.55%	2.84%	6.15%	2.90%	17.45%	0.18	Jul-14

Second Quarter and YTD 2020 – Summary of What Worked & What Didn't

Significant dispersion by strategy

- Market neutral and discretionary macro outperformed (Laurion and part of Graham portfolio)
- Fundamental and certain quant-based strategies underperformed (Winton)

Wide dispersion of performance within strategies

- Certain highly levered strategies & some volatility arbitrage strategies (sub-component of Graham) underperformed in market neutral
- Value underperformed growth in equities
- US outperformed non-US
- Structured credit underperformed in credit/distressed (part of KLS & Sculptor portfolios)
- Managers that actively managed hedges and risk profile performed well (Laurion & Sculptor)

Hedge fund alpha recovered in the first quarter but declined slightly in the second quarter

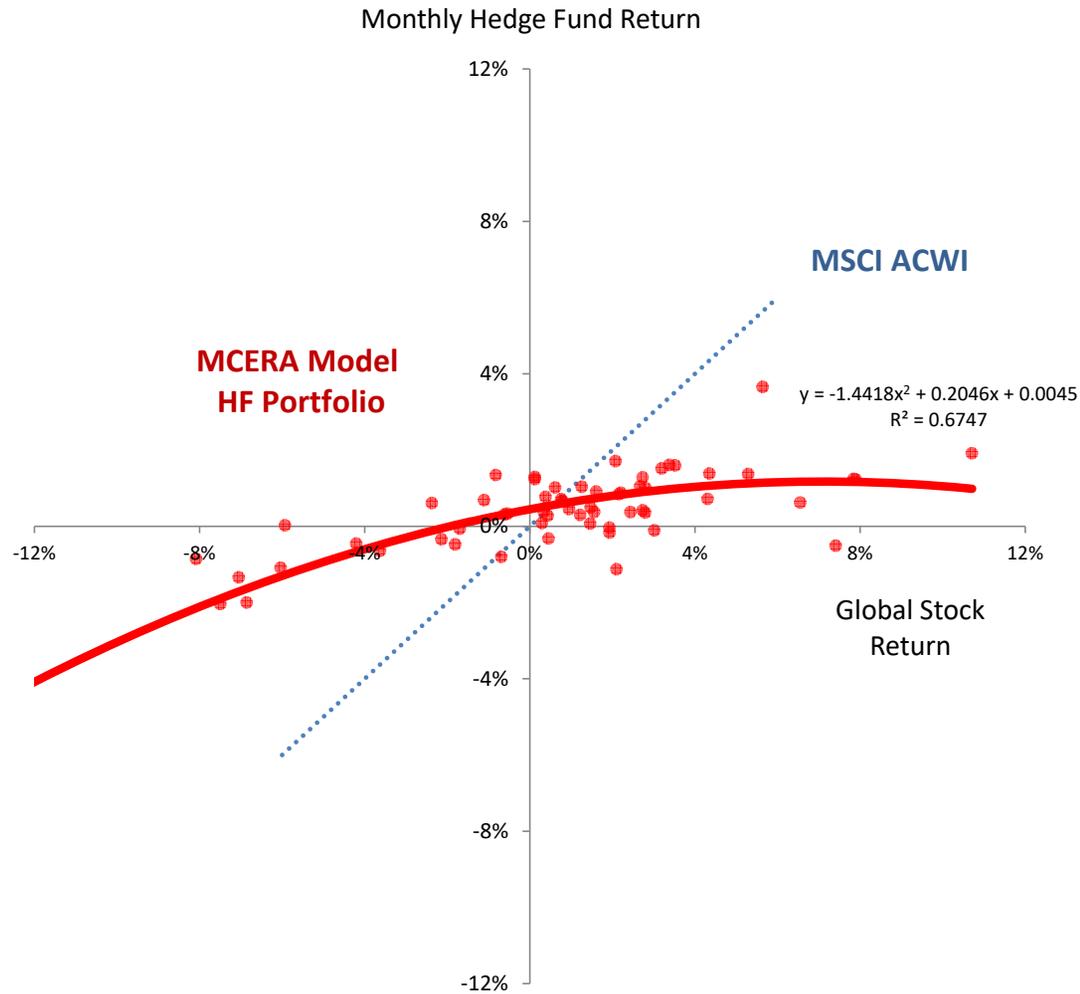
- Positive YTD for hedge fund portfolios (FoFs index)

Funds increasing leverage after March deleveraging

Liquidity has come back for higher rated credits and large/mid cap stocks; pricing still depressed in parts of the bond market that did not have Fed Reserve support

There has not been significant redemption pressure on most funds

Representative MCERA Hedge Fund Model Portfolio – Pro Forma Performance 5 years as of July 2020



This presentation may include sample or pro forma performance. Such information is presented for illustrative purposes only and is based on various assumptions, not all of which are described herein. Such assumptions, data, or projections may have a material impact on the returns shown. Nothing contained in this presentation is, or shall be relied upon as, a representation as to past or future performance, and no assurance, promise, or representation can be made as to actual returns. Past performance does not guarantee future performance.

MCERA Model Hedge Fund Portfolio – Pro Forma 5 Yrs as of Jul 31, 2020

	Historical Return and Volatility*				Breakdown of Historical Return & Risk by Beta and Alpha								Asset vs. Risk Weights		
	Return	Risk	Sharpe Ratio	Sharpe Ratio Rank	Beta	Beta Return	Beta Risk	Alpha Return	Alpha Risk	Convexity	Info Ratio	Info Ratio Rank	Asset Weights	Risk Weights	Diff
KLS Diversified Fund Ltd.	-1.90%	9.51%	-0.30	9	0.32	1.87%	4.72%	-5.06%	8.26%	-10.88	-0.61	10	8%	13%	5%
Laurion Capital, LP	10.12%	6.46%	1.30	1	-0.11	-0.64%	-1.60%	9.15%	6.26%	5.64	1.46	1	12%	-2%	-14%
Silver Point Capital Offshore Fund, Ltd.	3.27%	6.11%	0.32	7	0.22	1.29%	3.25%	0.45%	5.17%	-5.44	0.09	6	13%	14%	1%
Taconic	3.48%	5.29%	0.40	5	0.24	1.38%	3.49%	0.50%	3.98%	-3.81	0.13	5	13%	13%	-0%
Archipelago Partners, L.P.	4.03%	8.46%	0.34	6	0.49	2.85%	7.20%	-0.46%	4.43%	-0.94	-0.10	7	13%	20%	7%
Marshall Wace Global Opportunities	6.80%	6.32%	0.84	2	0.01	0.07%	0.18%	5.25%	6.31%	-1.23	0.83	2	10%	4%	-6%
Marshall Wace Funds LP - MW Eureka (US) Fund	5.18%	5.39%	0.69	3	0.20	1.18%	2.99%	2.36%	4.48%	-2.58	0.53	3	4%	4%	-0%
Graham Absolute Return Trading Ltd.	0.32%	8.68%	-0.09	8	0.32	1.84%	4.63%	-2.90%	7.34%	-4.90	-0.39	8	8%	10%	3%
Winton Fund Limited	-2.21%	8.61%	-0.39	10	0.17	0.98%	2.48%	-4.47%	8.24%	-7.08	-0.54	9	6%	5%	-1%
Sculptor Domestic Partners II, L.P.	5.96%	7.56%	0.61	4	0.40	2.31%	5.84%	1.94%	4.80%	-1.90	0.40	4	12%	19%	6%
HFRI Fund of Funds Composite Index	1.93%	5.55%	0.38		0.34	1.97%	4.98%	-1.69%	2.43%	-2.14	-0.69				
Portfolio	2.69%	5.40%	0.25		0.27	1.60%	4.03%	-1.27%	3.60%	-3.90	-0.35				
Group Average	0.90%	5.94%	-0.10		0.24	1.39%	3.50%	-2.02%	4.68%	-3.75	-0.43				

This presentation may include sample or pro forma performance. Such information is presented for illustrative purposes only and is based on various assumptions, not all of which are described herein. Such assumptions, data, or projections may have a material impact on the returns shown. Nothing contained in this presentation is, or shall be relied upon as, a representation as to past or future performance, and no assurance, promise, or representation can be made as to actual returns. Past performance does not guarantee future performance.

Market Environment – More Favorable for Active Management

Volatility remains elevated

- Relative value and arbitrage funds can capture greater deviations from short to medium-term fair value

Greater equity dispersion

- In high upside dispersion months, equity long/short funds capture more upside in positive markets and less downside in negative markets

Liquidity support

- Lower borrowing costs
- Tightening of spreads and greater risk taking

Growing distressed opportunities

- Greater opportunity set for event driven and credit funds as large parts of the market have not recovered
- Dislocations in various sectors

As of June 30, 2020	End of Quarter	Beginning of Quarter	Beginning of Year	1 Year Ago	1 Year Low	1 Year High
Spreads (bps, unless noted)						
TED Spread	17	139	36	22	17	151
10Y US Swap Spreads	-1.76	4.50	-2.44	-3.88	-13.50	9.62
US Treasury 30yr - 10yr	75	65	47	52	42	81
US Breakeven Inflation 10yr (%)	1.34	0.93	1.79	1.69	0.55	1.81
Tail Risk Proxies (% , unless noted)						
VIX (Implied S&P 500 Volatility)	30.43	53.54	13.78	14.06	11.54	82.69
VIX 6m Futures Volatility	29.07	30.10	17.87	16.63	16.37	37.47
5x10 Swaption Implied Volatility	67.27	77.16	29.16	26.98	24.85	129.30
MOVE (Implied US Treasury Volatility) (bps)	54.13	83.87	58.28	66.53	48.11	163.70
Equity Return Dispersion (%)						
S&P 500 3m Return Dispersion	19.79	19.02	11.31	10.55	19.79	9.62
Credit Risk (%)						
HY Spread (ICE BofA US HY Index OAS)	6.44	8.77	3.60	4.07	3.38	10.87
HY Default Rate	6.61	3.12	2.86	1.55	1.55	6.61
Leverage Loans Spread (3yr takeout)	6.90	10.01	4.63	4.71	4.57	13.25
Leverage Loans Default Rate	4.18	1.75	2.06	1.38	1.38	4.18

Summary

MCERA's hedge fund portfolio was transitioned to a direct portfolio at end of 2017

- Managers upsized and additional managers added in 2018; now at target allocation
- Limited time period to evaluate overall portfolio effectiveness

Portfolio has performed in-line with comparable market indices in 2020

- Portfolio beta in 0.20-0.25 range; lower than HFRI FoF's 0.35
- Historical analysis shows downside protection but upside is also limited in large market increases

Mixed performance across strategies and managers

- Laurion, Sculptor and Marshall Wace have performed well
- Credit/event managers have added value but not all segments of credit market have recovered
- Winton, KLS and Graham had disappointing performance during market decline

Forward looking market conditions are more favorable for active management

Performance Disclosures

The Cliffwater Model Portfolio (both overall and strategy-specific) performance results presented are unaudited and have been prepared for informational purposes only. The Cliffwater Model Portfolio performance results reflect the hypothetical, back-tested results of a model portfolio of all Cliffwater approved open-ended commingled hedge funds that are weighted to the target strategy weights of the model determined by Cliffwater over time. The performance results for each strategy-specific Cliffwater Model Portfolio (e.g., Cliffwater Model Portfolio - Market Neutral) reflect the hypothetical, back-tested results of an equal-weighted model portfolio of all Cliffwater approved open-ended commingled hedge funds that use the strategy. Closed-ended hedge funds are excluded since they are not available for investment on an ongoing basis. Approved funds are added to the model portfolios the month following the month in which they are approved, and funds are removed from the model portfolios on the month that they are no longer Cliffwater approved funds. However, the historical performance for funds removed from the model portfolios are kept in the historical performance of the model portfolios. For funds with multiple investment structures (e.g., an onshore fund and an offshore fund), the performance results of only one of the investment structures is selected for inclusion in the model portfolios. Generally, the master fund is selected, if available, and, if the master fund is not available, the onshore fund is selected, unless the offshore fund has a longer track record.

The model returns are based on the returns reported by the sponsor and/or administrator of the fund. The returns rely upon the accuracy and completeness of financial information provided to Cliffwater by such sponsors and/or administrators and, therefore, Cliffwater has not conducted an independent verification of this information. The returns are net of (i) all underlying fund or account expenses, management fees, and performance-based fees and (ii) Cliffwater's actual fees, determined based on an allocation of Cliffwater's compensation to assets under advisement by strategy.

The hypothetical, back-tested performance results of the model portfolios do not represent actual trading, and may not reflect the impact material economic and market factors might have had on Cliffwater's decision-making if it were actually managing clients' money. The actual performance of Cliffwater's clients may have been materially different from the results portrayed in the model portfolio. The model portfolio includes hedge funds that Cliffwater no longer recommends to its clients. Past performance is not indicative of future returns, which may vary. Future returns are not guaranteed, and a loss of principal may occur.

"Beta" is derived from a regression of each return series (less the 3-month Libor return) against the return of the MSCI All Country World Index (MSCI ACWI).

"Alpha" is the annualized intercept of the regression (see Beta, above) and "Alpha Risk" is the annualized standard deviation of the residuals from the regression (see Beta, above).

"Information Ratio" is Alpha divided by Alpha Risk.

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