Contra Costa County Employees' Retirement Association

MEMORANDUM

Date: February 26, 2020

To: CCCERA Board of Retirement

From: Timothy Price, Chief Investment Officer

Subject: Investment Staff Report – Q4 2019

Overview
On a quarterly basis CCCERA's Board receives a report which details critical elements of CCCERA's Functionally Focused Portfolio's sub-portfolios. The purpose of the report is to highlight elements of the sub-portfolios which are good indicators to the Board of the program's efficient and effective operation.

Summary
CCCERA's Total Fund is performing as expected, exhibiting returns above expectations for the amount of risk taken. This is measured by the Sharpe Ratio (risk-adjusted return), and a comparison to the Simple Target Index. The Simple Target Index is the most basic index which could replicate CCCERA's Total Fund, and is made up of 68% MSCI ACWI, 24% Bloomberg 1-3 Year Gov/Credit, and 8% 3-Month Treasury Bills (please see the Total Fund pages in the appendix for additional details). CCCERA's portfolio is much more complex, especially as it relates to allocations to private equity, private credit, and real estate.

CCCERA has been rewarded for implementing a more complex portfolio, and has outperformed the Simple Target Index over the trailing five years, while experiencing less risk (volatility). Details on performance relative to this index are included in the appendix. It is worth noting that CCCERA's Total Fund return is an aggregate of the performance of the Liquidity, Growth, and Risk Diversifying sub-portfolios.

1) **Liquidity**
   The purpose of the liquidity program is to match four years of benefit payments with high credit quality, low duration assets. The liquidity sub-portfolio is made up of three fixed income managers, all of whom pursue a high quality, low duration investment approach. Through the fourth quarter of 2019, all managers held high quality (as measured by credit ratings), low duration portfolios. The average credit quality for the entire liquidity program is AA- (AAA is the highest rating), and the duration is 1.7 years, which is considered short.

2) **Growth**

The Growth portfolio is designed to take advantage of capital appreciation and income opportunities globally. To achieve this, the Growth portfolio includes a variety of assets, from stocks and growth-oriented bonds to private equity, real estate, and private credit.

One notable change from the prior quarter is the Growth portfolio's 5-year annualized performance relative to the MSCI ACWI. For the trailing five-year period ending September 30, 2019, the Growth portfolio returned 7.6% relative to the index return of 6.6%, for an excess return of 1%. During the fourth quarter of 2019, the public equity markets rallied strongly with the MSCI ACWI Index returning 9% and CCCERA's diversified Growth portfolio returning 5.5%. This single quarter had an outsized impact on the trailing five-year period ending December 31, 2019, where CCCERA's Growth portfolio returned 8.2% (a 0.6% increase from the prior quarter) but the MSCI ACWI Index returned 8.4% (a 1.8% increase from the prior quarter). This shifted our five-year excess return from +1.0% as of September 30 to -0.2% as of December 31. We expect this relative return to increase as the valuations for our private market investments are reappraised over the next quarter.

3) **Risk Diversifying**

The Risk Diversifying mandate holds assets that are expected to diversify the growth portfolio's volatility while offering moderate growth. The mandate as a whole seeks to be highly liquid, have a low beta to the growth market, and produce positive real returns. In the fourth quarter, the Risk Diversifying mandate fulfilled most of these goals. The entire mandate is able to be liquidated within 90 days, meeting the requirement of high liquidity. The correlation of the mandate to growth markets is 0.5, which shows good diversification. Trailing real (net of inflation) returns over the past five years is -0.7%, an improvement from last quarter's -0.8%, but which remains below expectations. We continue to explore additional mandates that can strengthen this sub-portfolio.

The Liquidity, Growth, and Risk Diversifying sub-portfolios are largely functioning well and within expectations. The product teams and asset managers are stable, and at this time we have no organizational concerns with our investment managers. CCCERA's Total Fund in aggregate is performing in line with expectations, having a higher return and a lower level of volatility compared to the Simple Target Index. Enclosed are additional details on CCCERA's Total Fund, sub-portfolios, and individual investment strategies.

CCCERA Portfolio Report Card

Below we have itemized those elements of each of CCCERA's sub-portfolios and Total Fund which we believe the Board should pay particular attention to. Additional details on each of the sub-portfolios are available in the appendix. All CCCERA performance is stated on a net of fees basis.

Liquidity

Objective	Measurement	Current Period Data	Status
High Quality	Credit Quality	AA-	Meeting Expectations
Low Risk	Duration	1.7 years	Meeting Expectations
Appropriately Sized	Months of Benefit Payments Invested	43 Months	Meeting Expectations

Growth

Objective	Measurement	Current Period Data	Status
Growth of Plan Assets	Absolute Returns	Trailing 5 yr return of 8.2%	Meeting Expectations
	Benchmark Relative Returns	-0.2% over ACWI over trailing 5 years	Slightly Below Expectations
Efficient Capital Deployment	Sharpe Ratio	CCCERA: 1.1 MSCI ACWI: 0.6 (over trailing 5 years)	Meeting Expectations

Risk Diversifying

Objective	Measurement	Current Period Data	Status
Offset Volatility in Growth Portfolio	Correlation	0.5 over trailing 5 years	Meeting Expectations
Positive Real Returns	Returns	Trailing 5 yr real return of -0.7%	Below Expectations
High Liquidity	% of Portfolio that can be liquidated within 90 days	100%	Meeting Expectations

Total Fund

Objective	Component/Measurement	Status
Store 4 Years of Benefit Payments	Liquidity Sub-portfolio	Meeting Expectations
Participate in Growth Opportunities	Growth Sub-portfolio	Meeting Expectations
Provide an offset to Growth volatility	Risk Diversifying Sub-portfolio	Meeting Expectations
Produce superior risk adjusted returns	Total Fund Sharpe Ratio	Meeting Expectations

Appendix – Liquidity Sub-Portfolio

Manager Reviews

Organizational Stability

	Portfolio Management Assessment	1 Year Product Asset Growth	1 Year Firm Asset Growth	Regulatory Action in Last Year?
Insight	Good	32%	11%	N
Sit	Good	6%	7%	N
DFA	Good	18%	18%	N

Performance

	Portfolio Average Credit Quality	Portfolio Average Duration	Portfolio Average Yield	1 Year Total Return
Insight	A+	1.5	2.0	4.8%
Sit	AAA	2.6	2.6	4.9%
DFA	A+	1.1	2.1	4.8%

Manager Notes:

None

Manager Theses:
The Liquidity Portfolio is a combination of three managers which work together to match four years of CCCERA's liabilities. The portfolio is refreshed every year during the annual funding plan.

Insight: Insight plays a completion role in the liquidity program, matching out liabilities with short duration government and corporate fixed income securities.

DFA: Dimensional Fund Advisors runs a strategy that focuses on obtaining fixed income exposures via the most liquid securities available. DFA contributes to the Liquidity Program by selling securities at regular intervals to pay a portion of CCCERA's monthly benefit payment.

Sit: Sit invests in high yielding government backed mortgages. The cash flow from these securities is harvested monthly to make up a portion of CCCERA's monthly benefit payment.

Appendix – Growth Sub-Portfolio

Manager Reviews

Organizational Stability

	Portfolio Management Assessment	1 Year Product Asset Growth	1 Year Firm Asset Growth	Regulatory Action in Last Year?
Boston Partners	Good	13%	10%	N
Jackson Square	Good	20%	28%	N
BlackRock Index Fund	Good	27%	24%	N
Emerald Advisors	Good	19%	14%	N
Ceredex	Good	-11%	18%	N
Pyrford (BMO)	Good	14%	12%	N
William Blair	Good	15%	20%	N
First Eagle	Good	8%	6%	N
Artisan Global	Good	30%	26%	N
PIMCO/RAE EM	Good	48%	15%	N
TT EM	Good	56%	23%	N
Adelante	Good	14%	17%	N
Allianz	Good	-9%	NA	N
AQR	Good	-5%	-5%	N
PanAgora	Good	13%	1%	N
Private Equity	Good	--	--	N
Private Credit	Good	--	--	N
Real Estate	Good	--	--	N

Performance

	Trailing 1 Year Return	Trailing 5 Year Return	Performance in Line with Expectations?
Boston Partners	24%	8%	Y
Jackson Square	27%	10%	Y
BlackRock Index Fund	31%	12%	Y
Emerald Advisors	29%	10%	Y
Ceredex	19%	8%	Y
Pyrford (BMO)	21%	5%	Y
William Blair	31%	6%	Y
First Eagle	20%	7%	Y
Artisan Global	36%	13%	Y
PIMCO/RAE EM	14%	6%	Y
TT EM	25%	9%	Y
Adelante	28%	7%	Y
Allianz	14%	4%	Y
AQR	22%	5%	Y
PanAgora	22%	7%	Y
	1Yr Premium	5 Year Premium	
Private Equity	-18%	2%	Y
Private Credit	-19%	1%	Y
Real Estate	-19%	0%	Y

Manager Notes:

Boston Partners:

Mark Donovan stepped down from his role as co-CEO at the end of 2019 to focus on portfolio management responsibilities; Joseph "Jay" F. Feeney Jr., co-CEO since 2008, became the sole CEO on December 31st.

TT International Emerging Markets:

TT announced in Q3 2019 that they will be acquired by Sumitomo Mitsui Financial Group. All emerging markets team members are expected to remain with the firm for at least the next several years. The transaction is expected to close in the first half of 2020.

Manager Theses:
The growth portfolio includes all managers in public and private equity, real estate, and private credit. These managers grow CCCERA's assets for future benefit payments (beyond the four years already covered by the Liquidity program).

Boston Partners: Large cap domestic equity which follows a value discipline. Boston Partners will buy out of favor companies and sell them when their intrinsic values are reflected in the market. Expected to outperform in flat to falling markets.

Jackson Square: Domestic equity large cap growth portfolio concentrated in companies with sustainable long-term growth characteristics. This portfolio should outperform in rapidly rising markets.

BlackRock Index Fund: Large cap domestic equity portfolio which should follow the Russell 1000 Index.

Emerald Advisors: Small cap growth equity seeking companies with high growth rates. Expected to produce strong returns in rising markets, and weak returns in falling markets.

Ceredex: Domestic equity small cap value portfolio of companies with dividend yields and low valuations. This portfolio should outperform flat markets.

Pyrford (BMO): International equity value portfolio of non-US companies with low valuations at the country and stock level. This portfolio should outperform in flat markets.

William Blair: International equity growth portfolio of non-US companies with high growth rates constructed from the security level. This portfolio should outperform in rapidly rising markets.

First Eagle: Global equity portfolio that is benchmark agnostic comprised of companies with low valuations.

Artisan Global Opportunities: Global equity portfolio of companies that is benchmark agnostic with accelerating profit cycles and a focus on capital allocation.

PIMCO/RAE Emerging Markets: Quantitative equity with a value orientation. This portfolio follows the fundamental indexing approach (ranking companies by metrics other than market capitalization), resulting in a diversified, low turnover portfolio. This portfolio underperforms in momentum driven markets.

TT International Emerging Markets: Concentrated, growth oriented manager which invests in small and mid-cap emerging market companies. TT employs both a top-down and a bottom-up research approach, and seeks to outperform by identifying companies that have a catalyst to drive future growth.

Adelante: Diversified portfolio of U.S. REITs with a focus on the underlying real estate assets. Adelante is a public market proxy of the core real estate market.

Allianz High Yield Fixed Income: Domestic high yield fixed income portfolio with a focus on security selection. Allianz will focus on the higher quality segment of the high yield universe. Allianz should provide a steady income stream, and provide downside protection in falling markets.

Private Equity: CCCERA invests in private equity to generate returns above those available in the public equity markets.

Private Credit: CCCERA invests in private credit to generate cash flow streams above those available in the public debt markets.

Real Estate: CCCERA invests in value-add, distressed, and opportunistic real estate to generate returns from the capital appreciation and cash flow associated with commercial real estate investment.

Risk Parity: Multi-asset approach that strives for balanced contributions to total portfolio risk from multiple asset classes.

Appendix – Risk Diversifying Sub-Portfolio

Organizational Stability

	Portfolio Management Assessment	1 Year Product Asset Growth	1 Year Firm Asset Growth	Regulatory Action in Last Year?
Wellington	Satisfactory	-60%	15%	N
AFL-CIO	Good	11%	NA	N
Parametric	Good	27%	119%	N

Performance

	Trailing 1 Year Correlation to Growth	Trailing 3 Year Correlation to Growth	1 Year Return	5 Year Return	% of Portfolio Liquid in 90 Days
Wellington	1.0	0.9	9.6%	0.3%	100%
AFL-CIO	-0.3	0.0	7.8%	2.8%	100%
Parametric	1.0	0.9	3.0%	7.2%	100%

Manager Notes:

None.

Manager Theses:
Managers in the risk diversifying allocation seek to have a low correlation with the growth portfolio, positive returns in flat and falling equity markets, and a high degree of liquidity. These managers work together to offset some of the risks in the growth portfolio.

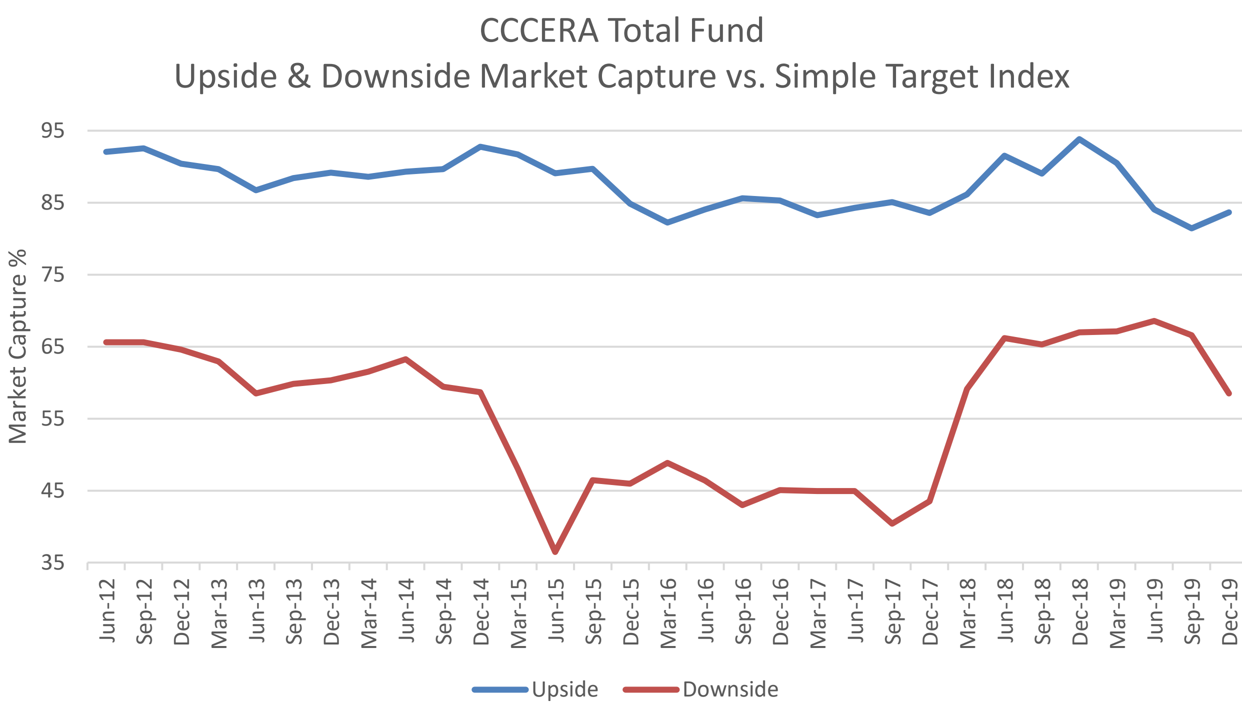
AFL-CIO: Portfolio of domestic, high quality fixed income securities which are backed by commercial and residential mortgages.

Parametric: Portfolio of paired options selling intended to collect insurance premiums by selling puts and calls on the S&P 500 with collateral invested in US Treasury portfolio.

Wellington: Multi-strategy fund which tactically rotates between assets to produce returns. Approximately 50% of underlying strategies pursue an inflation-hedging goal.

Appendix Data – Total Fund

Rolling 3-Year Total Fund Upside/Downside Market Capture



*The composition of the Simple Target Index has mirrored changes in CCCERA's asset allocation over time: from 2008 to 2012 the benchmark was 73% MSCI ACWI, 23% Bloomberg 1-3 Year Gov/Credit, and 4% 3-Month Treasury Bills. From 2012 to 2016 the composition was 74% MSCI ACWI, 18% Bloomberg 1-3 Year Gov/Credit, and 9% 3-Month Treasury Bills. From 2016 to 2017 the composition was 63% MSCI ACWI, 25% Bloomberg 1-3 Year Gov/Credit, and 12% 3-Month Treasury Bills, from 2017 to June 2018 the composition was 61% MSCI ACWI, 27% Bloomberg 1-3 Year Gov/Credit, and 12% 3-Month Treasury Bills, from July 2018 to June 2019 the composition is 69% MSCI ACWI, 23% Bloomberg 1-3 Year Gov/Credit, and 8% 3-Month Treasury Bills, and from July 2019 to the present the composition is 68% MSCI ACWI, 24% Bloomberg 1-3 Year Gov/Credit, and 8% 3-Month Treasury Bills.

Total Fund Quarterly Attribution

	CCCERA Total Fund			Simple Target Index			Analysis		
	Allocation	Return	Return Contribution	Allocation	Return	Return Contribution	Allocation Difference	Return Difference	Total Effect
Liquidity	24.3%	0.5%	0.1%	24.0%	0.6%	0.1%	0.3%	-0.1%	0.0%
Growth	67.6%	5.5%	3.7%	68.0%	9.0%	6.1%	-0.4%	-3.4%	-2.3%
Risk Diversifying	8.1%	0.5%	0.0%	8.0%	0.5%	0.0%	0.1%	0.1%	0.0%
Total Fund	100%		3.9%	100%		6.3%	-0.1%		-2.3%

CCCERA Total Fund Performance vs. Simple Target Index

	One Year		Three Years		Five Years		Ten Years	
	CCCERA	STI	CCCERA	STI	CCCERA	STI	CCCERA	STI
Return	14.6	19.1	8.3	8.7	6.8	5.9	8.5	6.6
Volatility	5.0	7.5	5.8	8.5	5.4	7.7	7.2	9.5
Sharpe	**2.5**	**2.2**	**1.1**	**0.8**	**1.1**	**0.6**	**1.1**	**0.6**

The Simple Target Index is made up of 68% MSCI ACWI, 24% Bloomberg 1-3 Year Gov/Credit, and 8% 3-Month Treasury Bill. This purpose of this index is to examine whether CCCERA is being rewarded for pursuing a more nuanced portfolio versus a very simple representative portfolio.

CCCERA's Total Fund has produced strong risk adjusted returns over most trailing periods. Additionally, the CCCERA Portfolio trailed the Simple Target Index over the past one- and three-year periods but has exceeded the STI over longer trailing periods. This would indicate that CCCERA has been rewarded for engaging in more complex investments which target outperformance versus investing passively in the publicly traded market.

The Sharpe ratio is a measure of risk adjusted returns which shows the amount of return a portfolio earns above the risk free rate per unit of volatility. Over all trailing periods, the Total Fund has produced a better Sharpe ratio relative to the Simple Target Index, indicating that CCCERA is being favorably rewarded for the risk taken in the portfolio.