



Investment Oversight

As at 31 May 2019



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Market Highlights

- US equities were significantly weaker in May after US-China trade talks broke down. The US government increased the tariff rate on \$200 billion of Chinese goods to 25% from 10% and China responded by hiking the tariffs on \$60 billion of imports from the US.
- Economic data released during the month was mixed with total nonfarm payroll employment increasing by 263,000 in April, sending the overall unemployment rate to 3.6%, from 3.8% a month earlier. Wage growth remained steady at 3.2% compared with a year earlier.
- The US 10-year Treasury yield was 38 basis points lower, finishing the month at close to 2.1%, levels not seen since late-2017. The difference between 10-year and three-month US Treasury yields fell below zero once more. This inversion in the yield curve (longer maturity yields are usually higher than shorter-dated) indicated bond investors' negative view of the economic outlook.
- The technology, energy and industrial sectors were among the weakest performers in May as investors became nervous about the prospects for global growth. Utilities, healthcare and consumer staples, whilst also lower, proved to be more resilient. The real estate sector outperformed.
- Eurozone equities experienced declines in May with the MSCI EMU index returning -6.4%. The outlook for global trade remained a primary concern. In the Eurozone the materials and financials sectors saw the steepest declines while perceived safe havens such as utilities and consumer staples fared better. Those industries most sensitive to global trade, such as autos and semiconductors, fell sharply. Data from Germany showed that the country avoided recession, with a GDP growth rate of 0.4% in Q1.
- German Bund 10-year yields were 21bps lower, moving back below zero, while French and Spanish yields also fell. Concerns around Italian politics and debt levels resurfaced resulting in 10-year yields increasing by nearly 10bps and two-year yields by 23bps.
- UK equities performed poorly over the month as economically-sensitive sectors, including financials, industrials and mining, lagged. Sterling retreated sharply amid renewed Brexit uncertainty, and fears of a disorderly exit from the EU were not soothed after Prime Minister Theresa May announced her resignation following a revolt within her own party.
- The Japanese equity market fell sharply at the beginning of the month and ended May with a total return of -6.5%. Global macroeconomic and political factors were again dominant. The yen strengthened against other major currencies, reflecting its perceived safe haven status, which tended to add to downward pressure on equity prices.
- Asia ex Japan equities slumped in May as the worsening US-China trade dispute triggered losses across global markets. Chinese stocks fared worst amid the deepening trade conflict and weaker-than-expected economic data for April. Markets in South Korea and Taiwan slid, dragged lower by steep declines in technology heavyweights. In comparison, Indian stocks outperformed as prime minister Narendra Modi and his party won a landslide victory in national elections. The industrials and financials sectors recorded the biggest gains and Turkey continued.

Portfolio Highlights

- In May, the SBCERA portfolio outperformed policy by 162 basis points for the month. It is also noteworthy that the portfolio is successfully mitigating a significant part of the market's volatility with a loss that is less than two-thirds of the policy benchmark during a very challenging month of May and a gain of 152 bps that is far greater than the policy index over the last three months.
- The Plan continues to show outperformance of its policy for the one-year period and has exceeded its policy performance benchmarks in all asset classes except for U.S. Equities, U.S Fixed Income, Real Estate and Absolute Return. Total portfolio performance has exceeded policy by a wide margin of 206 bps for the last year and has delivered a strong return of 3.26% relative to a policy return of 1.20%.
- The SBCERA portfolio has outperformed its policy benchmark by 3.11% on an annualized basis over the last 5 years. This strong outperformance has been delivered through a combination of dynamic rebalancing at the plan level, portable alpha and strong manager performance in credit and absolute return strategies. Over the last thirty years, the SBCERA portfolio has delivered an 8.1% annualized rate of return.
- During the month, the plan maintained an underweight allocation to US Equities, US and International Fixed Income, Real Assets and Real Estate. An overweight position was also held in International Equities, Private Equity, Absolute Return Strategies and Cash.
- Page 7 of the report illustrates that the Plan has outperformed its policy return 1, 2, 3, and 5 year periods with significantly less risk and has outperformed a 60/40 portfolio over same periods with approximately half of the risk as defined by volatility. For the FYTD period, the Plan showed a higher total return than the 60/40 portfolio and its policy.
- As shown in the scenario analysis chart on page 9, the portfolio remains well positioned to weather a potential bear market environment much better than a more volatile 60/40 type plan. The benefit of this diversified risk-focused approach was evident in the 2018 calendar year performance after a December that was very damaging to most other public pensions.

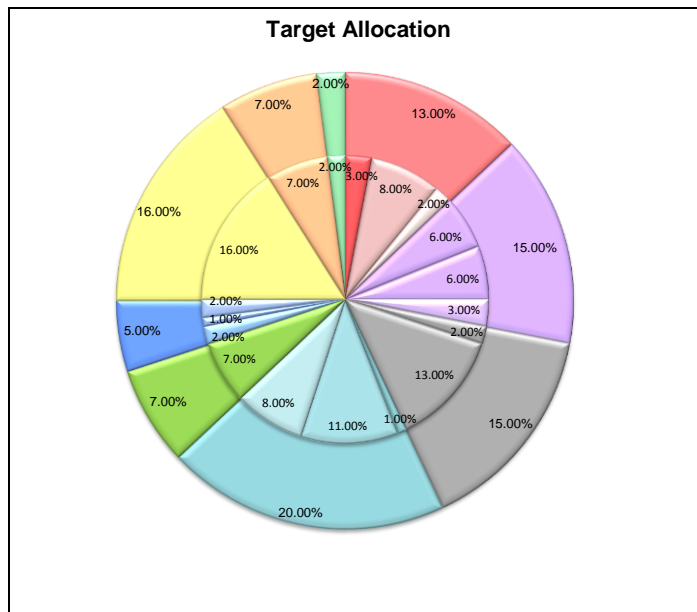
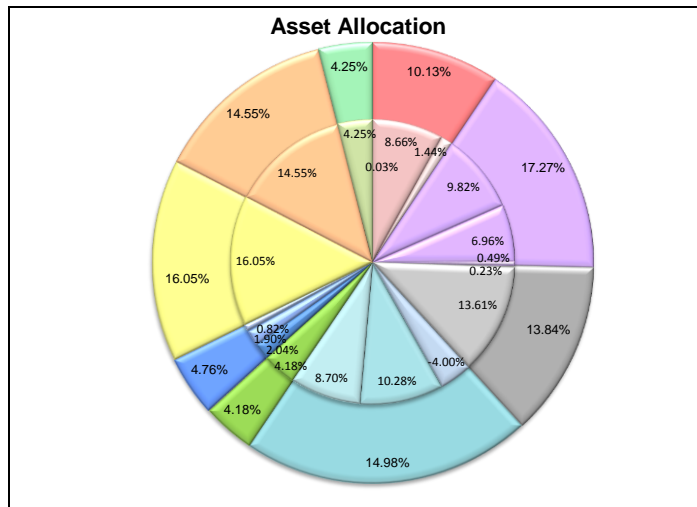
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Exhibit A: Page 5



Asset Class Allocation: Actual vs. Target



Asset Class	Sub-Asset Class	Actual \$ Allocation			Total % Allocation	Target % Allocation	Target Range
		Physical	Synthetic	Total			
US Equities	Volatility	3,356,159		3,356,159	0.03%	3.00%	0%-8%
	Passive Large Cap	1,093,550,816	-199,700,000	893,850,816	8.66%	8.00%	0%- 16%
	Passive Small Cap	0	148,600,000	148,600,000	1.44%	2.00%	-3%- 7%
	Sub-Total	1,096,906,975		1,045,806,975	10.13%	13.00%	8%-18%
International Equities	Developed Market	0	1,014,200,000	1,014,200,000	9.82%	6.00%	1% -11%
	Emerging Market Equity	428,774,117	289,900,000	718,674,117	6.96%	6.00%	1% -11%
	Volatility	50,269,262		50,269,262	0.49%	3.00%	0%-8%
	Sub-Total	479,043,379		1,783,143,379	17.27%	15.00%	10%-20%
US Fixed Income	US Core	0	23,600,000	23,600,000	0.23%	2.00%	-3%-7%
	High Yield/Credit	1,405,014,019		1,405,014,019	13.61%	13.00%	8%-18%
	Sub-Total	1,405,014,019		1,428,614,019	13.84%	15.00%	10%-20%
International Fixed Income	International Core	0	-413,008,998	-413,008,998	-4.00%	1.00%	-4%-6%
	International Credit	1,394,136,075	-332,291,002	1,061,845,072	10.28%	11.00%	6%-16%
	Emerging Market Debt	898,363,060		898,363,060	8.70%	8.00%	3%-13%
	Sub-Total	2,292,499,135		1,547,199,135	14.98%	20.00%	13%-23%
Real Estate	Real Estate	431,129,824		431,129,824	4.18%	7.00%	0%-14%
Real Assets	Commodities	210,892,241		210,892,241	2.04%	2.00%	-1%-7%
	Infrastructure	196,163,572		196,163,572	1.90%	1.00%	0%-6%
	Timber	84,575,279		84,575,279	0.82%	2.00%	0%-7%
	Sub-Total	491,631,092		491,631,092	4.76%	5.00%	0%-10%
Private Equity	Private Equity	1,656,817,858		1,656,817,858	16.05%	16.00%	6%-21%
Absolute Return	Absolute Return	2,033,730,774	-531,300,000	1,502,430,774	14.55%	7.00%	0%-12%
Cash	Cash	438,451,884		438,451,884	4.25%	2.00%	0%-10%
Total		10,325,224,940		10,325,224,940	100.00%	100.00%	0.00%

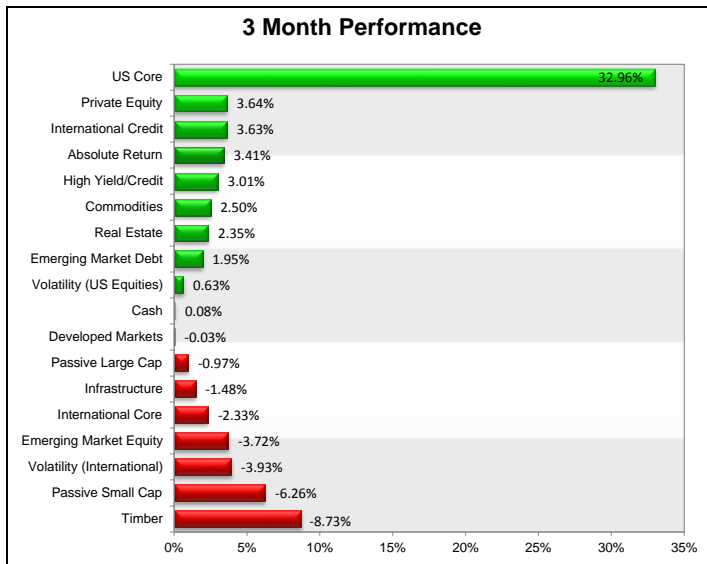
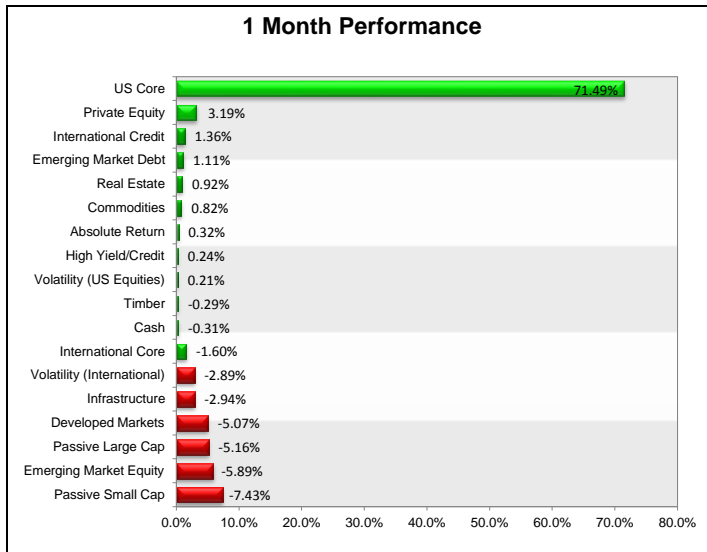
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Asset Class Performance: Actual vs. Policy



Asset Class	Sub-Asset Class	Month				3 Months			
		Physical Return	Synthetic Overlay Return	Total Return	Policy	Physical Return	Synthetic Overlay Return	Total Return	Policy
US Equities	Volatility	0.21%		0.21%		0.63%		0.63%	
	Passive Large Cap	-5.42%	6.24%	-5.16%		-1.06%	0.21%	-0.97%	
	Passive Small Cap		-7.43%	-7.43%			-6.26%	-6.26%	
	Sub-Total	-5.40%	-2.82%	-5.57%	-6.68%	-1.06%	-6.20%	-1.89%	-1.79%
International Equities	Developed Markets		-5.07%	-5.07%			-0.03%	-0.03%	
	Emerging Market Equity	-4.98%	-7.28%	-5.89%		-3.53%	-4.02%	-3.72%	
	Volatility	-2.89%		-2.89%		-3.93%		-3.93%	
	Sub-Total	-4.76%	-5.55%	-5.34%	-5.86%	-3.57%	-0.92%	-1.65%	-3.47%
US Fixed Income	US Core		71.49%	71.49%			32.96%	32.96%	
	High Yield/Credit	0.24%		0.24%		3.01%		3.01%	
	Sub-Total	0.24%	71.49%	1.41%	1.78%	3.01%	32.96%	3.05%	3.76%
International Fixed Income	International Core		-1.60%	-1.60%			-2.33%	-2.33%	
	International Credit	1.42%	-1.60%	1.36%		3.30%	-2.33%	3.63%	
	Emerging Market Debt	1.11%		1.11%		1.95%		1.95%	
	Sub-Total	1.30%	-1.60%	1.15%	1.04%	2.76%	-2.33%	2.97%	1.14%
Real Estate	Real Estate	0.92%		0.92%	0.00%	2.35%		2.35%	1.37%
Real Assets	Commodities	0.82%		0.82%	-3.56%	2.50%		2.50%	-4.53%
	Infrastructure	-2.94%		-2.94%	-6.68%	-1.48%		-1.48%	-1.79%
	Timber	-0.29%		-0.29%	0.00%	-8.73%		-8.73%	0.75%
	Sub-Total	-0.90%		-0.90%	-2.48%	-1.21%		-1.21%	-1.77%
Private Equity	Private Equity	3.19%		3.19%	-6.68%	3.64%		3.64%	-1.79%
Absolute Return	Absolute Return	-2.90%	12.73%	0.32%	1.78%	0.91%	6.19%	3.41%	3.76%
Cash	Cash	-0.31%		-0.31%	0.23%	0.08%		0.08%	0.64%
Total		-0.65%		-0.65%	-2.27%	1.52%		1.52%	0.18%

All returns consider both reporting and non-reporting managers

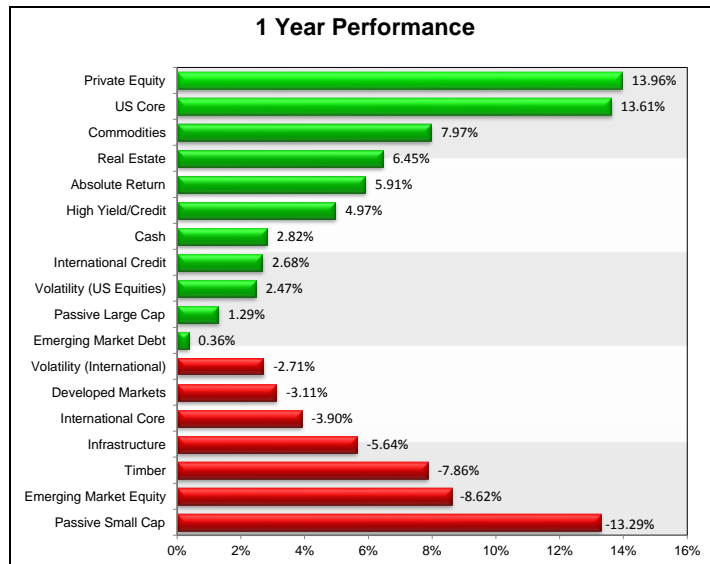
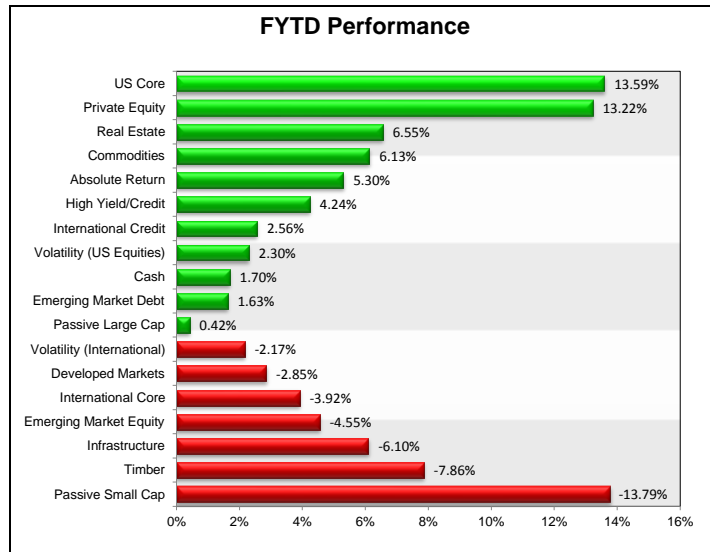
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Asset Class Performance: Actual vs. Policy (Cont'd)



Asset Class	Sub-Asset Class	FYTD				1 Year			
		Physical Return	Synthetic Overlay Return	Total Return	Policy	Physical Return	Synthetic Overlay Return	Total Return	Policy
US Equities	Volatility	2.30%		2.30%		2.47%		2.47%	
	Passive Large Cap	0.12%	7.30%	0.42%		1.09%	6.71%	1.29%	
	Passive Small Cap		-13.79%	-13.79%			-13.29%	-13.29%	
	Sub-Total	0.11%	-14.46%	-1.60%	0.05%	1.08%	-13.98%	-0.79%	0.56%
International Equities	Developed Markets		-2.85%	-2.85%			-3.11%	-3.11%	
	Emerging Market Equity	-4.30%	-5.13%	-4.55%		-8.25%	-9.38%	-8.62%	
	Volatility	-2.17%		-2.17%		-2.71%		-2.71%	
	Sub-Total	-3.15%	-3.22%	-3.27%	-6.88%	-6.42%	-4.43%	-5.15%	-8.85%
US Fixed Income	US Core		13.59%	13.59%			13.61%	13.61%	
	High Yield/Credit	4.24%		4.24%		4.97%		4.97%	
	Sub-Total	4.24%	13.59%	3.01%	6.53%	4.97%	13.61%	3.55%	6.40%
International Fixed Income	International Core		-3.92%	-3.92%			-3.90%	-3.90%	
	International Credit	3.15%	-3.92%	2.56%		3.21%	-3.90%	2.68%	
	Emerging Market Debt	1.63%		1.63%		0.36%		0.36%	
	Sub-Total	2.57%	-3.92%	1.85%	1.09%	2.14%	-3.90%	1.09%	0.39%
Real Estate	Real Estate	6.55%		6.55%	4.93%	6.45%		6.45%	6.71%
Real Assets	Commodities	6.13%		6.13%	-11.10%	7.97%		7.97%	-14.34%
	Infrastructure	-6.10%		-6.10%	0.05%	-5.64%		-5.64%	0.56%
	Timber	-7.86%		-7.86%	2.27%	-7.86%		-7.86%	3.21%
	Sub-Total	-1.23%		-1.23%	-3.65%	-0.39%		-0.39%	-4.70%
Private Equity	Private Equity	13.22%		13.22%	0.05%	13.96%		13.96%	0.56%
Absolute Return	Absolute Return	1.25%	8.56%	5.30%	6.53%	1.10%	9.61%	5.91%	6.40%
Cash	Cash	1.70%		1.70%	2.09%	2.82%		2.82%	2.26%
Total		3.27%		3.27%	1.39%	3.26%		3.26%	1.20%

All returns consider both reporting and non-reporting managers

Asset Allocations - Monthly Changes

The total NAV of the portfolio at May 31 2019 is \$10,325,224,940
The monthly value loss to the portfolio was \$67,564,794.78

- Value of the portfolio decreased by (▼0.65%) in May.
- Benefit payments of 25m were paid out in May.
- No new managers were added during the month.
- No managers left the platform during the month.

- The strategy with the largest cash inflow during the month was Liquidity (▲\$81million).
- The strategy with the largest cash outflow during the month was Opportunistic (▼\$13million).
- Over the past 12 months the largest increase in allocation was observed in Liquidity (▲\$326million).
- The largest decrease in allocation over the past 12 months was observed in Domestic PE (▼\$83million).

Assets by Strategy: Largest performance increases

Strategy	Global Strategy	Performance May	
		\$	%
Domestic PE	Private Equity	32,157,651	5.34%
European PE	Private Equity	12,577,486	4.65%
Beta Focus	Global Debt	11,386,496	1.14%

Assets by Strategy: Largest underperforming strategies

Strategy	Global Strategy	Performance May	
		\$	%
Overlay	Alpha Pool	-69,450,478	-12.88%
Long Equity	Global Equity	-86,523,878	-5.23%
Infrastructure	Real Assets & Real Estate	-5,960,133	-2.94%

Managers: Best performing

Manager	Strategy	Performance May	
		\$	%
Pathway	Domestic PE	32,157,651	5.34%
Partners Group	European PE	12,722,917	5.23%
Golden Tree Distressed	Special Situations	708,151	3.28%

Managers: Worst performing

Manager	Strategy	Performance May	
		\$	%
Russell (Interest Hedge)	Overlay	-2,690,427	-18.22%
Russell (Overlay)	Overlay	-66,760,052	-12.73%
Mondrian	Long Equity	-9,021,842	-6.17%

Performance History

Portfolio Returns (By Fiscal Quarter)

	Q1	Q2	Q3	Q4	Fiscal Year	5 Year Annualized Return
2019	2.00%	-3.94%	4.74%	0.63%	3.27%	6.52%
2018	3.04%	2.85%	0.94%	1.82%	8.92%	
2017	2.97%	3.51%	2.67%	2.88%	12.58%	
2016	-3.14%	-1.19%	4.14%	3.06%	2.72%	
2015	0.49%	-0.05%	1.79%	2.14%	4.42%	

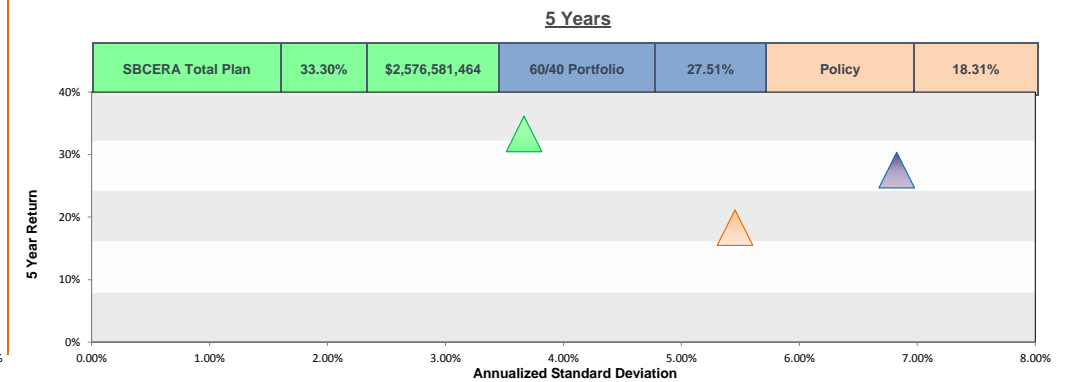
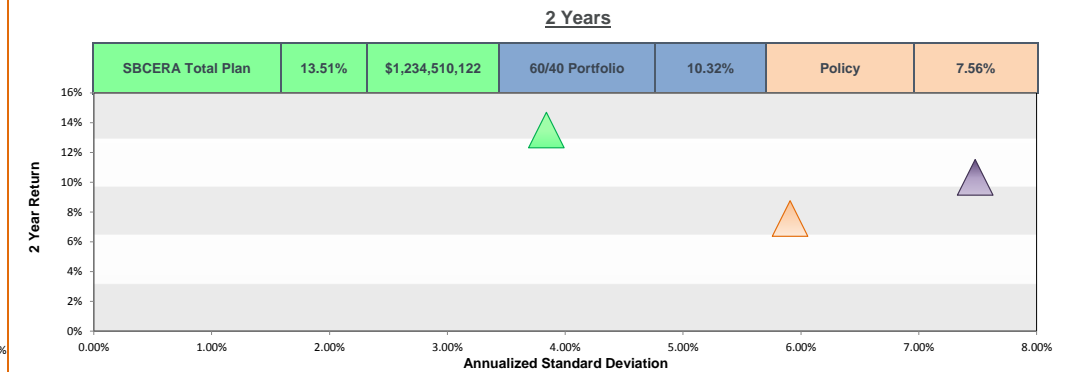
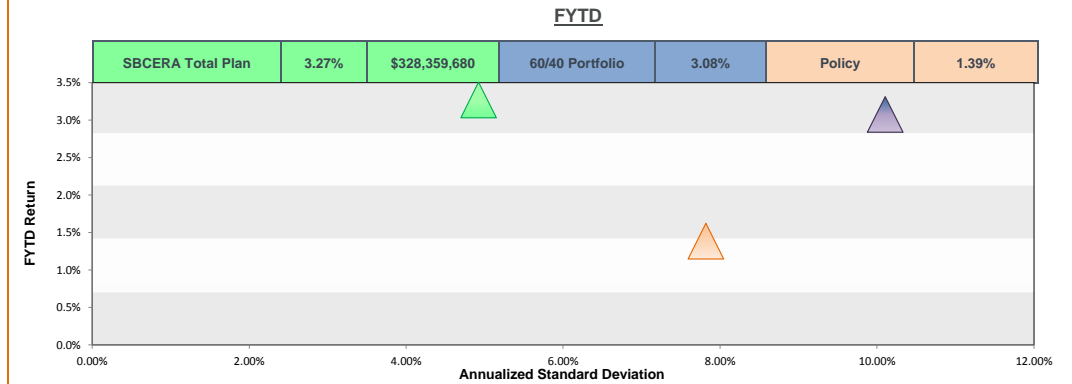
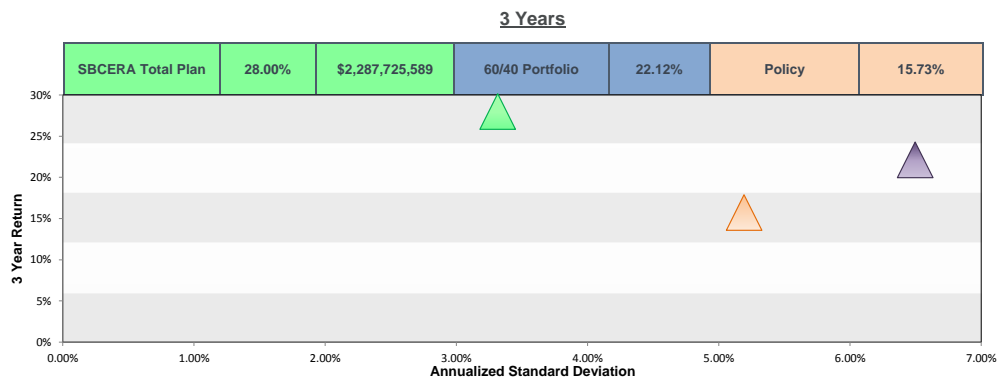
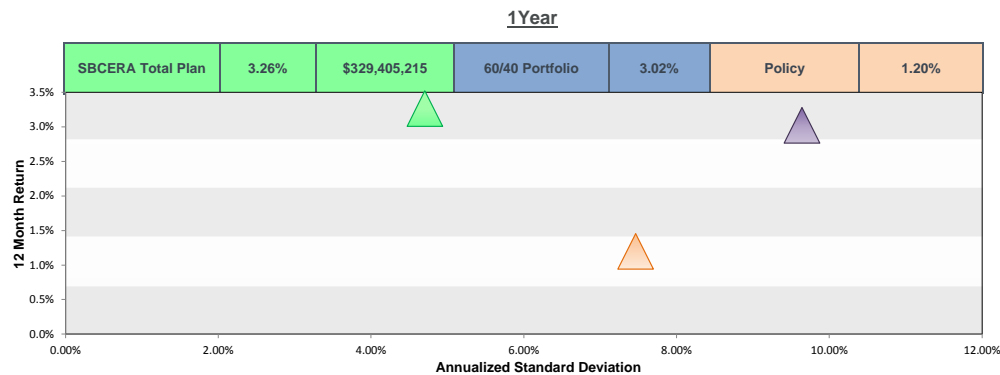
Policy Returns (By Fiscal Quarter)

	Q1	Q2	Q3	Q4	Fiscal Year	5 Year Annualized Return
2019	1.82%	-5.64%	6.53%	-0.94%	1.39%	3.41%
2018	2.80%	3.01%	-0.09%	-0.07%	5.72%	
2017	2.35%	-1.25%	3.21%	2.36%	6.78%	
2016	-3.77%	1.77%	2.44%	2.06%	2.39%	
2015	-1.79%	0.71%	0.73%	-0.15%	-0.51%	

Long Term Risk/Return of Plan vs. 60/40 Portfolio and Policy Returns

- The SBCERA Total Plan* is well positioned relative to the risk-adjusted returns of the Policy Index* and 60/40 Portfolio* over 1, 2, 3 and 5 year periods.
- Considering the longer term, SBCERA has for the last 30 years had an annualized return of **8.1%**.
- The 60/40 Portfolio has the most volatile return series over the FYTD, 1, 2, 3 and 5 year time frames.
- The SBCERA portfolio has generated both the highest return and the highest risk adjusted return over the 1 year, 2 year, 3 year and 5 year time horizon when compared with the 60/40 and policy portfolios.

* See Appendix III



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Portfolio Asset Class Returns (By Calendar Quarter)

2014 - Q3	2014 - Q4	2015 - Q1	2015 - Q2	2015 - Q3	2015 - Q4	2016 - Q1	2016 - Q2	2016 - Q3	2016 - Q4	2017 - Q1	2017 - Q2	2017 - Q3	2017 - Q4	2018 - Q1	2018 - Q2	2018 - Q3	2018 - Q4	2019 - Q1	2019 - Q2	Annualized
Private Equity	Real Estate	Absolute Return	Private Equity	Real Estate	Real Estate	Absolute Return	Portfolio Return	International Fixed Income	International Fixed Income	International Equities	International Fixed Income	International Equities	International Equities	International Fixed Income	Real Assets	Private Equity	Private Equity	US Equities	Private Equity	Private Equity
3.16%	4.07%	5.83%	6.38%	4.02%	3.25%	37.05%	9.36%	7.10%	6.78%	7.21%	5.82%	5.19%	5.70%	3.63%	7.55%	5.01%	4.12%	11.99%	4.03%	13.21%
Real Estate	Private Equity	Real Assets	Real Estate	Private Equity	US Fixed Income	Portfolio Return	Real Estate	International Equities	Absolute Return	Private Equity	Private Equity	International Fixed Income	Private Equity	Real Estate	US Equities	US Equities	Real Estate	International Equities	Absolute Return	Real Estate
2.89%	1.81%	5.25%	2.62%	3.43%	0.96%	4.14%	5.03%	5.85%	5.48%	3.78%	5.37%	3.92%	5.07%	3.39%	4.44%	4.32%	1.27%	10.30%	2.88%	9.57%
US Fixed Income	Real Assets	International Equities	International Fixed Income	Cash	International Equities	Real Estate	International Fixed Income	US Equities	US Equities	International Fixed Income	International Equities	Private Equity	US Equities	Private Equity	Private Equity	Portfolio Return	Cash	Real Assets	Real Estate	International Fixed Income
1.63%	1.71%	4.14%	2.23%	-0.18%	0.36%	3.96%	3.47%	3.65%	5.43%	3.38%	4.23%	3.90%	4.68%	2.50%	3.36%	2.00%	0.67%	6.16%	1.94%	8.24%
US Equities	Absolute Return	US Fixed Income	Portfolio Return	Real Assets	International Fixed Income	Private Equity	International Equities	Portfolio Return	Private Equity	Portfolio Return	Portfolio Return	Absolute Return	International Fixed Income	US Fixed Income	Absolute Return	International Fixed Income	US Fixed Income	Portfolio Return	US Fixed Income	Portfolio Return
0.54%	0.48%	3.27%	2.14%	-1.36%	0.21%	3.61%	3.30%	2.97%	3.97%	2.67%	2.88%	3.65%	3.32%	1.90%	2.23%	1.72%	0.50%	4.74%	1.62%	6.52%
Portfolio Return	US Fixed Income	Portfolio Return	US Fixed Income	International Fixed Income	Private Equity	International Fixed Income	Portfolio Return	Private Equity	Portfolio Return	Real Estate	US Equities	Portfolio Return	Real Assets	Absolute Return	Portfolio Return	Absolute Return	Absolute Return	International Fixed Income	International Fixed Income	US Equities
0.49%	0.40%	1.79%	2.00%	-2.69%	-0.29%	3.03%	3.06%	2.43%	3.51%	1.94%	1.88%	3.04%	3.17%	1.82%	1.62%	1.53%	-1.75%	3.78%	0.97%	4.94%
Absolute Return	Portfolio Return	US Equities	International Equities	US Equities	US Equities	International Equities	US Fixed Income	Real Estate	International Equities	US Equities	Absolute Return	US Equities	Portfolio Return	Portfolio Return	Real Estate	Real Assets	Portfolio Return	Absolute Return	Portfolio Return	International Equities
-0.30%	-0.05%	1.78%	1.40%	-2.94%	-0.47%	2.87%	2.61%	2.07%	2.56%	1.61%	1.75%	3.03%	2.85%	0.94%	1.49%	1.28%	-3.94%	2.60%	0.63%	4.57%
Real Assets	International Equities	Real Estate	Absolute Return	Portfolio Return	Cash	Real Assets	US Equities	Real Assets	Real Assets	US Fixed Income	US Fixed Income	Real Assets	Cash	US Equities	US Fixed Income	Real Estate	International Fixed Income	Real Estate	Cash	Absolute Return
-0.39%	-0.36%	0.83%	-3.14%	-1.04%	2.66%	2.34%	1.01%	2.52%	1.02%	1.64%	1.90%	0.40%	0.24%	1.05%	1.16%	-4.45%	2.03%	0.02%	4.36%	
International Fixed Income	International Fixed Income	International Fixed Income	US Equities	US Fixed Income	Portfolio Return	US Equities	Cash	US Fixed Income	Real Estate	Absolute Return	Real Assets	Real Estate	Real Estate	Cash	Cash	International Equities	Real Assets	US Fixed Income	Real Assets	US Fixed Income
-0.58%	-1.22%	0.52%	0.50%	-3.30%	-1.19%	1.80%	-0.09%	0.47%	0.59%	0.53%	0.97%	1.80%	0.32%	0.23%	0.72%	0.78%	-6.14%	1.40%	-2.13%	3.94%
International Fixed Income	US Equities	Private Equity	Cash	Absolute Return	Real Assets	US Fixed Income	Real Assets	Cash	US Fixed Income	Cash	Cash	US Fixed Income	US Fixed Income	International Equities	International Fixed Income	Cash	International Equities	Cash	US Equities	Real Assets
-0.93%	-1.35%	-0.16%	-0.48%	-10.08%	-6.35%	1.00%	-0.10%	-0.75%	0.37%	-0.11%	0.54%	1.15%	-0.16%	-1.33%	-0.74%	0.59%	-10.49%	0.42%	-2.76%	1.64%
Cash	Cash	Cash	Real Assets	International Equities	Absolute Return	Cash	Private Equity	Absolute Return	Cash	Real Assets	Real Estate	Cash	Absolute Return	Real Assets	International Equities	US Fixed Income	US Equities	Private Equity	International Equities	Cash
-5.19%	-5.65%	-4.89%	-1.85%	-13.19%	-27.63%	0.66%	-0.56%	-3.10%	-0.12%	-2.19%	-2.08%	0.27%	-1.32%	-4.52%	-1.17%	-0.53%	-13.38%	-0.46%	-2.78%	-3.06%

Policy Asset Class Returns (By Calendar Quarter)

2014 - Q3	2014 - Q4	2015 - Q1	2015 - Q2	2015 - Q3	2015 - Q4	2016 - Q1	2016 - Q2	2016 - Q3	2016 - Q4	2017 - Q1	2017 - Q2	2017 - Q3	2017 - Q4	2018 - Q1	2018 - Q2	2018 - Q3	2018 - Q4	2019 - Q1	2019 - Q2	Annualized
Real Estate	US Equities	Real Estate	Real Estate	Real Estate	US Equities	International Fixed Income	Real Assets	International Equities	US Equities	International Equities	International Equities	International Equities	US Equities	International Fixed Income	US Equities	US Equities	Real Estate	US Equities	US Fixed Income	Real Estate
2.91%	4.74%	3.04%	3.57%	3.14%	5.72%	8.26%	5.56%	6.26%	3.67%	7.21%	4.80%	5.51%	5.84%	3.62%	3.41%	6.64%	1.67%	13.49%	1.80%	9.33%
US Fixed Income	Private Equity	International Equities	Real Assets	US Fixed Income	Private Equity	US Fixed Income	International Fixed Income	US Equities	Private Equity	US Equities	International Fixed Income	US Equities	Private Equity	Real Estate	Private Equity	Private Equity	US Fixed Income	Private Equity	Absolute Return	US Equities
0.17%	4.74%	2.90%	2.74%	1.23%	5.72%	3.03%	3.40%	3.88%	3.67%	5.24%	3.55%	4.08%	5.84%	1.80%	3.41%	6.64%	1.64%	13.49%	1.80%	7.14%
Absolute Return	Real Estate	US Fixed Income	Cash	Absolute Return	Real Estate	Absolute Return	US Fixed Income	Private Equity	Real Assets	Private Equity	US Equities	Private Equity	International Equities	Cash	Real Estate	Portfolio Policy Return	Absolute Return	International Equities	International Fixed Income	Private Equity
0.17%	2.63%	1.61%	0.01%	1.23%	3.09%	3.03%	2.21%	3.88%	1.91%	5.24%	2.52%	4.08%	4.66%	0.35%	1.70%	1.82%	1.64%	9.55%	0.43%	7.14%
Cash	US Fixed Income	Absolute Return	Portfolio Policy Return	International Fixed Income	International Equities	Real Estate	Absolute Return	Portfolio Policy Return	Real Estate	Portfolio Policy Return	Private Equity	Portfolio Policy Return	Portfolio Policy Return	Real Assets	Real Assets	Real Estate	International Fixed Income	Portfolio Policy Return	Cash	Portfolio Policy Return
0.01%	1.79%	1.61%	-0.15%	0.64%	2.88%	2.91%	2.21%	2.35%	1.77%	3.21%	2.52%	2.80%	3.01%	0.18%	0.88%	1.81%	0.91%	6.53%	0.42%	3.41%
US Equities	Absolute Return	US Equities	US Equities	Cash	Portfolio Policy Return	Portfolio Policy Return	Real Estate	Real Estate	Cash	International Fixed Income	Portfolio Policy Return	International Fixed Income	Real Assets	Portfolio Policy Return	Cash	Cash	Cash	Real Assets	Real Estate	US Fixed Income
-0.46%	1.79%	1.32%	-0.34%	0.01%	1.77%	2.44%	2.21%	2.03%	0.09%	2.48%	2.36%	2.48%	2.97%	-0.09%	0.45%	0.49%	0.56%	4.76%	0.00%	2.70%
Private Equity	Portfolio Policy Return	Private Equity	Private Equity	Portfolio Policy Return	Cash	Real Assets	US Equities	International Fixed Income	Portfolio Policy Return	Real Estate	Real Estate	Real Assets	Real Estate	US Equities	Portfolio Policy Return	Real Assets	Portfolio Policy Return	US Fixed Income	Portfolio Policy Return	Absolute Return
-0.46%	0.71%	1.32%	-0.34%	-3.77%	0.03%	1.04%	2.10%	1.03%	-1.25%	1.73%	1.55%	1.85%	1.70%	-1.09%	-0.07%	0.06%	-5.64%	2.94%	-0.94%	2.70%
Portfolio Policy Return	Cash	Portfolio Policy Return	International Equities	Real Assets	US Fixed Income	US Equities	Private Equity	US Fixed Income	International Equities	US Fixed Income	US Fixed Income	Real Estate	International Fixed Income	Private Equity	US Fixed Income	International Equities	Real Assets	Absolute Return	Real Assets	Cash
-1.79%	0.00%	0.73%	-0.42%	-7.16%	-0.57%	0.42%	2.10%	0.46%	-1.61%	0.82%	1.45%	1.75%	1.63%	-1.09%	-0.16%	0.03%	-6.01%	2.94%	-2.20%	0.83%
Real Assets	International Fixed Income	Real Assets	International Fixed Income	US Equities	Absolute Return	Private Equity	Portfolio Policy Return	Absolute Return	US Fixed Income	Absolute Return	Absolute Return	US Fixed Income	US Fixed Income	US Fixed Income	US Fixed Income	US Fixed Income	International Equities	International Fixed Income	US Equities	International Fixed Income
-4.78%	-2.99%	0.23%	-0.83%	-7.71%	-0.57%	0.42%	2.06%	0.46%	-2.98%	0.82%	1.45%	0.85%	0.39%	-1.46%	-0.16%	0.02%	-11.82%	1.52%	-3.05%	-0.47%
International Fixed Income	Real Assets	Cash	US Fixed Income	Private Equity	International Fixed Income	Cash	Cash	Cash	Absolute Return	Real Assets	Cash	Absolute Return	Absolute Return	Absolute Return	International Equities	Absolute Return	US Equities	Real Estate	Private Equity	International Equities
-5.38%	-4.02%	0.00%	-1.68%	-7.71%	-1.26%	0.07%	0.08%	0.10%	-2.98%	0.19%	0.20%	0.85%	0.39%	-1.46%	-3.59%	0.02%	-14.73%	1.37%	-3.05%	-1.30%
International Equities	International Equities	International Fixed Income	Absolute Return	International Equities	Real Assets	International Equities	International Equities	Real Assets	International Fixed Income	Cash	Real Assets	Cash	Cash	International Equities	International Fixed Income	International Fixed Income	Private Equity	Cash	International Equities	Real Assets
-5.84%	-4.19%	-4.63%	-1.68%	-12.71%	-3.47%	-1.03%	-1.75%	-0.69%	-10.26%	0.10%	-0.71%	0.27%	0.28%	-1.76%	-4.76%	-1.74%	-14.73%	0.60%	-3.64%	-1.30%

Investment Oversight

As at 31 May 2019
San Bernardino County Employees' Retirement Association

Exhibit A: Page 11

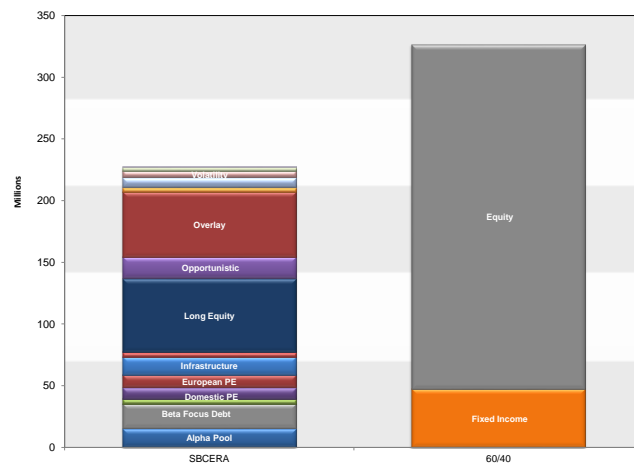


Risk Profile (VaR)

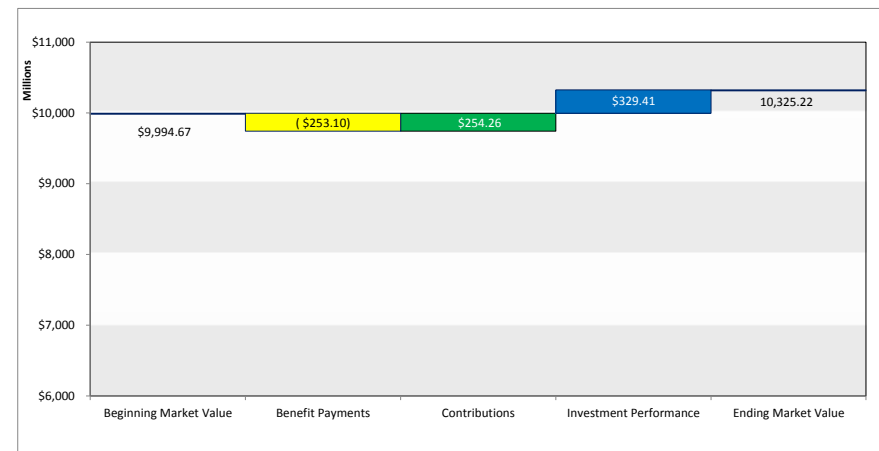
- The portfolio has a 5% chance of losing \$228 million (or more) in a month.
- The portfolio has a 1% chance of losing \$350 million (or more) in a month.

Strategy	5% chance of losing \$
Long Equity	59,735,842
Overlay	52,530,951
Beta Focus	20,010,391

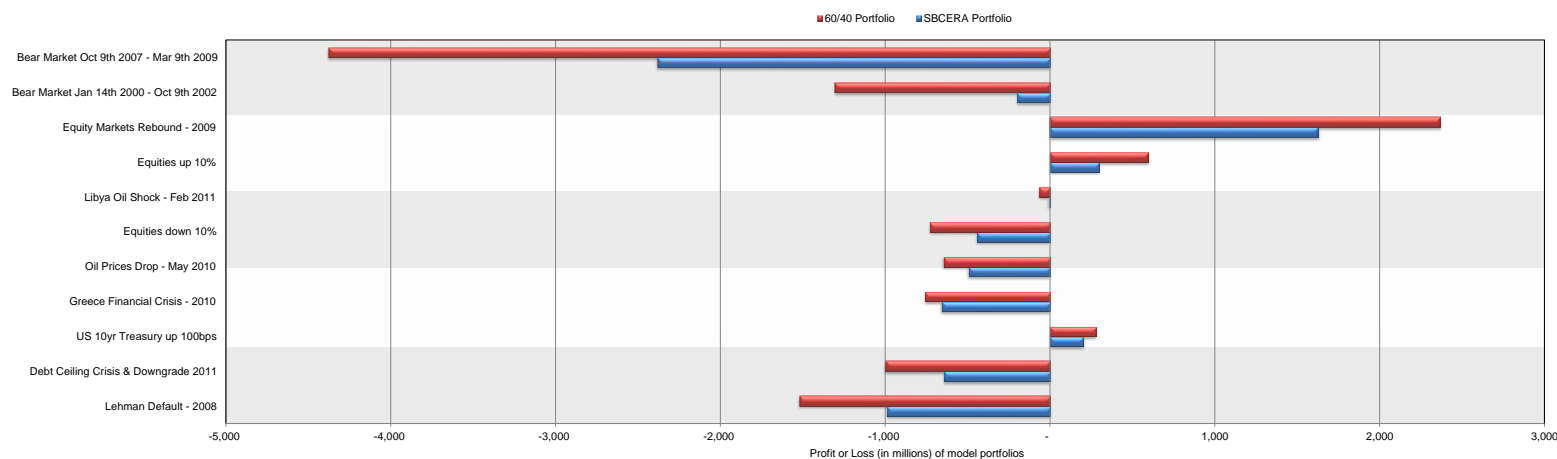
Strategy	5% chance of losing \$
Volatility	701,474
Timber	2,616,321
Liquidity	3,581,276



Contribution to Plan (1Year)

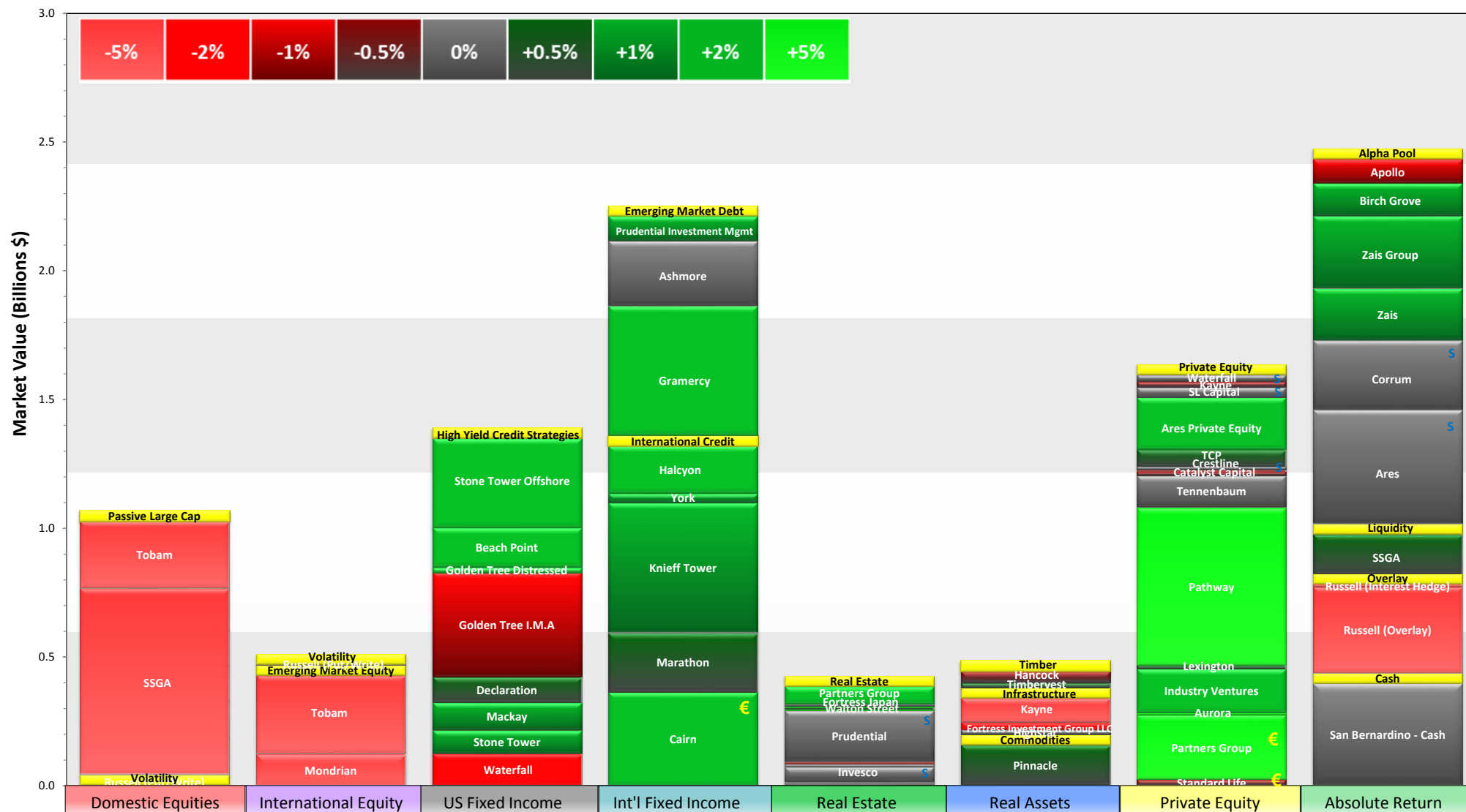


Scenario Analysis

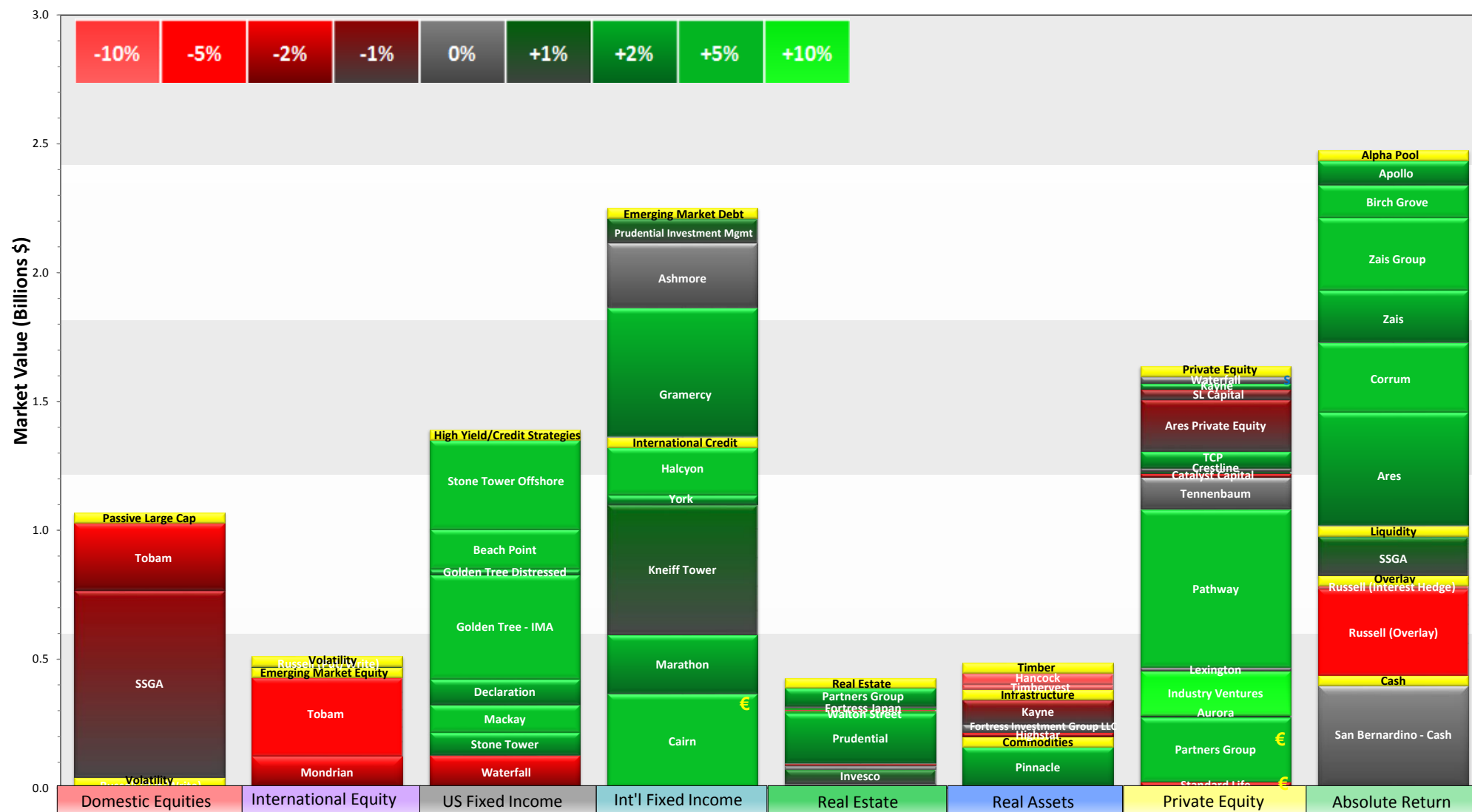


- The above graphic shows the results of a range of scenario analysis's performed. The analysis simulates potential performance of the SBCERA portfolio (in blue) and a hypothetical 60/40 portfolio (in red) based upon specific market conditions (e.g. Equity markets move down 10% or if there is a repeat of the Bear Market of 2007 - 2009).
- The models used for this analysis use a range of proxies and indices that are highly correlated to the performance of the various SBCERA asset classes and investments to create a model portfolio that is then tested across various market conditions.

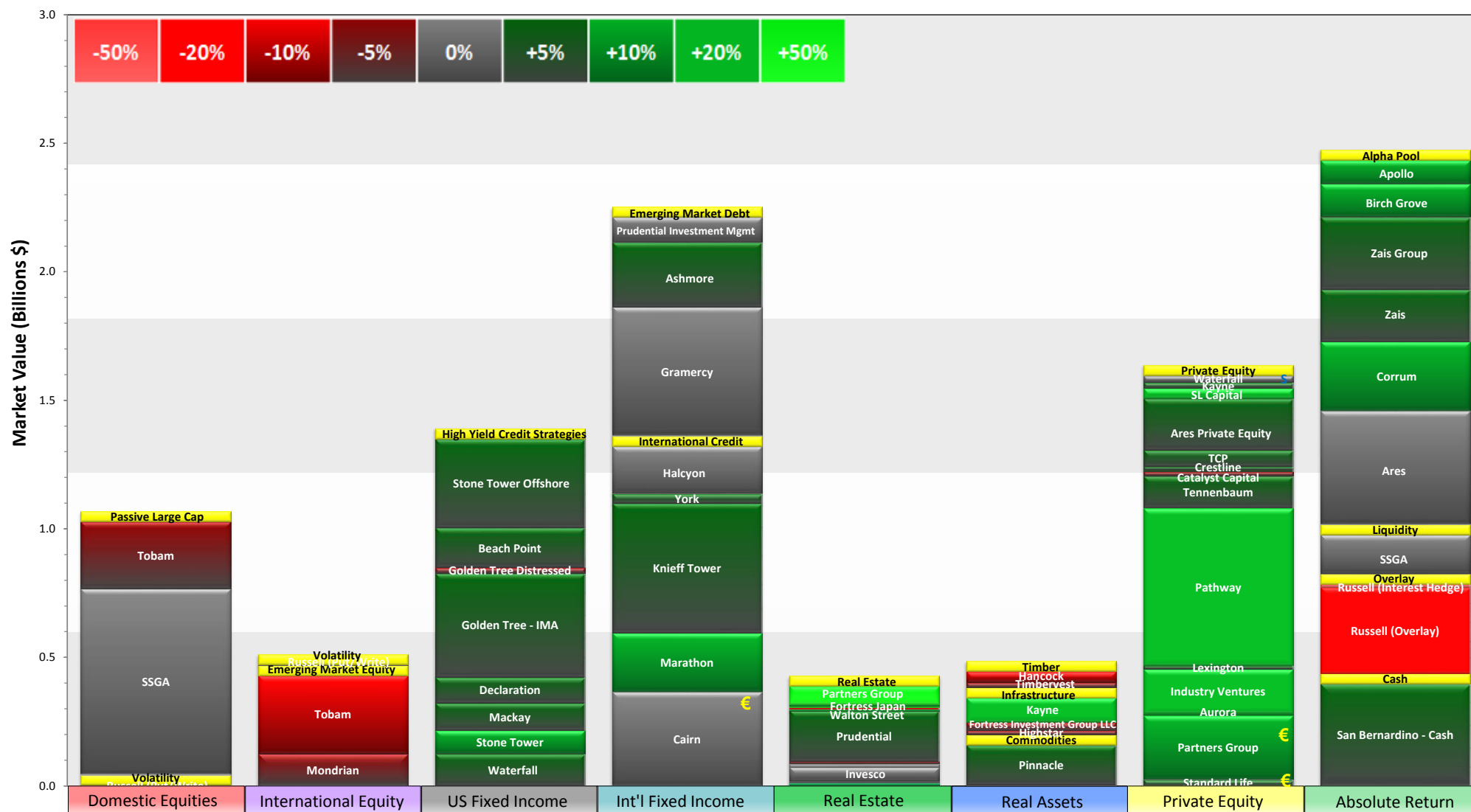
Monthly Performance Heat Map (showing physical assets only)



3 Month Performance Heat Map (showing physical assets only)



12 Month Performance Heat Map (showing physical assets only)



Notes

 Current month valuations not available from Custodian

 Performance impacted by currency movements

Global Debt

Overview and Risk Profile by Strategy and Manager

- The Global Debt portfolio is composed of Beta Focus Debt, Opportunistic Credit and Special Situations.
- Beta Focus Debt focuses on exposure to attractively priced assets. Opportunistic Credit takes advantage of perceived mispricing in securities, asset classes and investment structures. Special Situations tends to be comprised of investment structures that face a liquidity crisis or critical event.

Commentary *Graphical representation can be found in the appendix

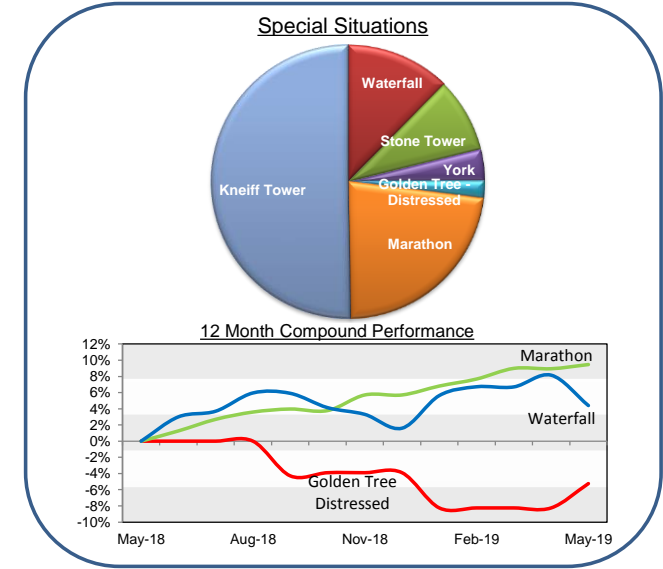
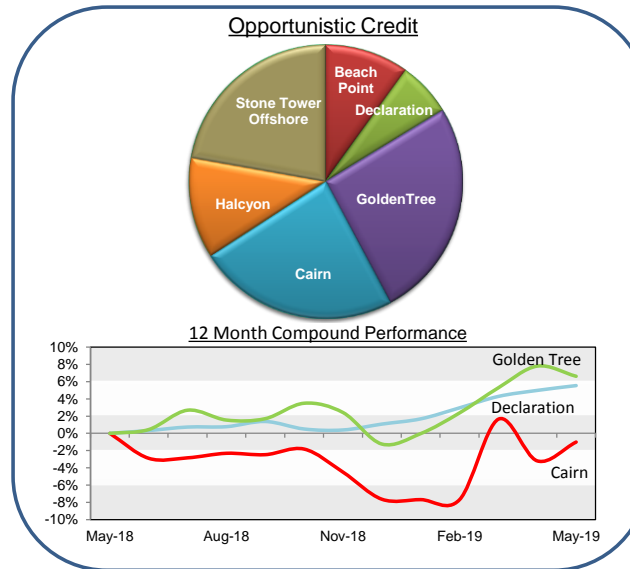
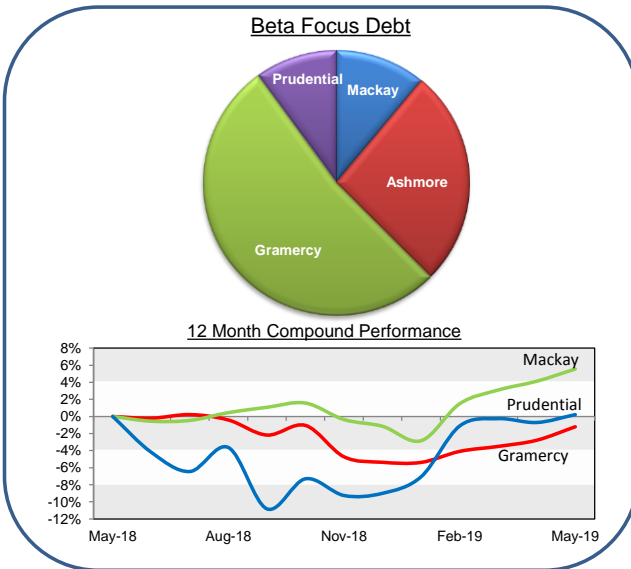
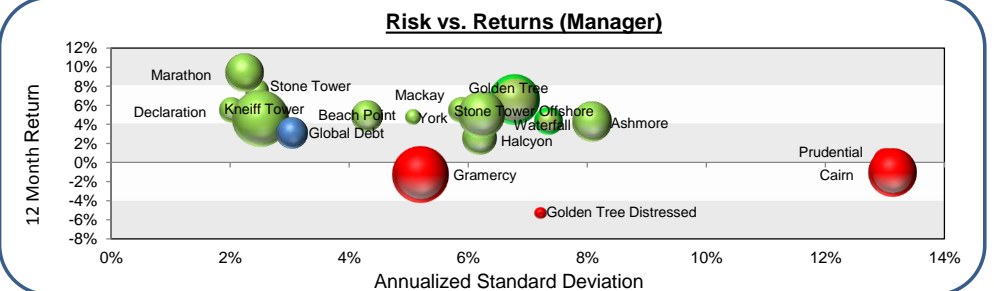
- Negative-yield debt issuances became increasingly popular in 2015 when the amount of debt issued rose to more than \$3 trillion, from \$773 billion the year before. Issues reached their peak in 2016 at \$4.9 trillion before slowly receding in subsequent years. But declines don't suggest that the trend is over - so far in 2019 about \$1.7 trillion has been issued.
 - The appeal to investors is primarily twofold: The first is as bond yields fall, these holdings only increase in price, and the second follows the logic that the negative yields will still leave investors in a better place than equities.
- Source: Bloomberg LP -

Value at Risk

- The portfolio has a 5% chance of losing \$43m in a month. Special Situations has the lowest value at risk.

Sharpe Ratio

- The managers with the highest Sharpe are Marathon, Stone Tower followed by Declaration. The managers with the lowest Sharpe are Golden Tree Distressed, Gramercy and Cairn.



Key: Best Performing Manager* Worst Performing Manager* Most Volatile* Least Volatile* * Relative to sub-Strategy only

Private Equity

Overview and Risk Profile by Strategy and Manager

- The Private Equity portfolio is comprised of a core allocation to Standard Life and Pathway Capital Management (exposure to domestic private equity) and Partners Group (exposure to European private equity).
- In addition, the allocation is complemented by a direct investment program that focuses on generating cash flows in the shorter term.

Commentary *Graphical representation can be found in the appendix

- Forward capital market assumptions reported by the largest investment consultants show overall improved expectations for most major asset classes and a minimal change in inflation.
- The data, aggregated by eVestment, show private assets leading the group, returning 8.7% and 8.8% on an annualized basis in the intermediate-term (<10 years) and long-term (>10 years), respectively.

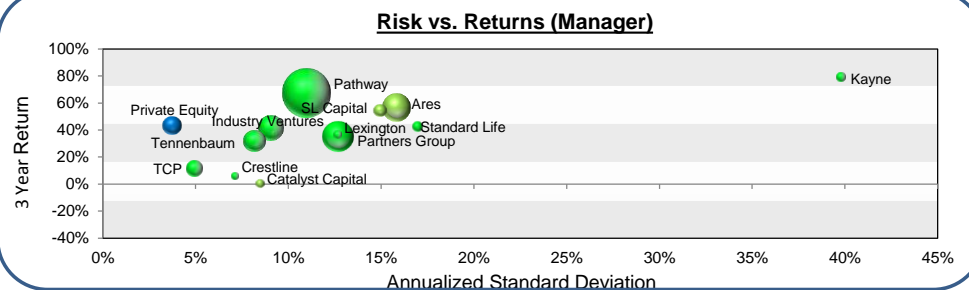
- Source: eVestment LLC -

Value at Risk

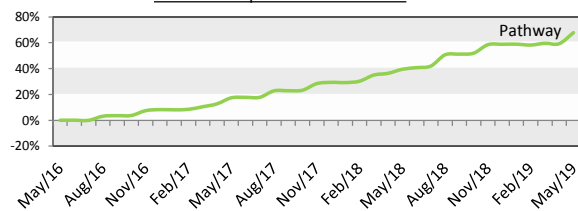
- The portfolio has a 5% chance of losing \$27mm in a month with the European Mandate responsible for most of the VaR.

Sharpe Ratio

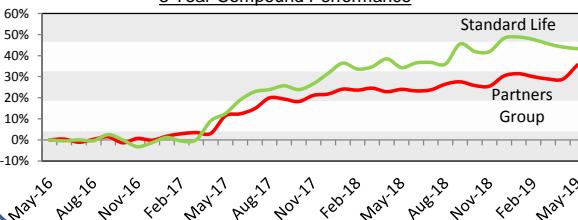
- The manager with the highest Sharpe over the last 3 Years is Pathway. The manager with the lowest Sharpe is Catalyst Capital.



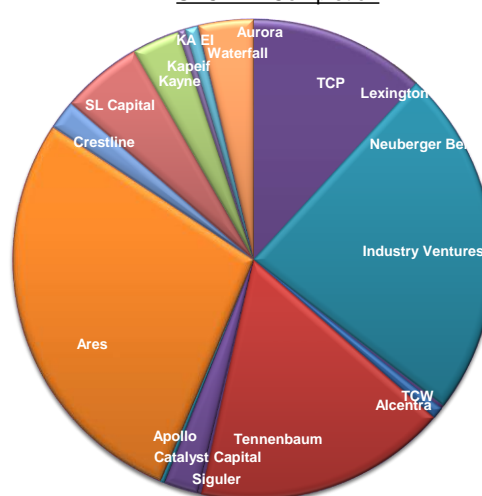
Domestic Mandate 3 Year Compound Performance



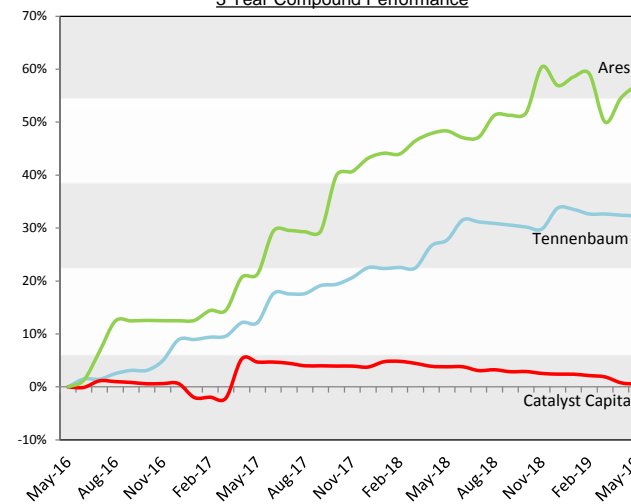
European Mandate 3 Year Compound Performance



SBCERA Completion



3 Year Compound Performance



Alpha Pool

Overview and Risk Profile by Strategy and Manager

- The Alpha Pool core strives to develop a low volatility pool of assets with the objective of consistently outperforming cash returns.
- The Liquidity Strategy should be comprised of cash plus return positions that may be tapped for liquidity if needed for other parts of the portfolio.
- The objective of the Alpha Pool Core is to provide returns of 200-300 basis points above cash or LIBOR based returns.

Commentary *Graphical representation can be found in the appendix

- The global hedge fund industry, according to the EurekaHedge Hedge Fund index, returned 5.1% year-to-date through April 30 and added \$75 billion to investor accounts in the process.
- Total assets were estimated at \$2.32 trillion, up from \$2.29 trillion at the end of 2018. Whether the gains will attract new commitments, however, is yet to be seen.
- 2019's performance-based growth was partially offset by \$48.2 billion in client redemptions, and industry client flows have been a net negative each month since April 2018.

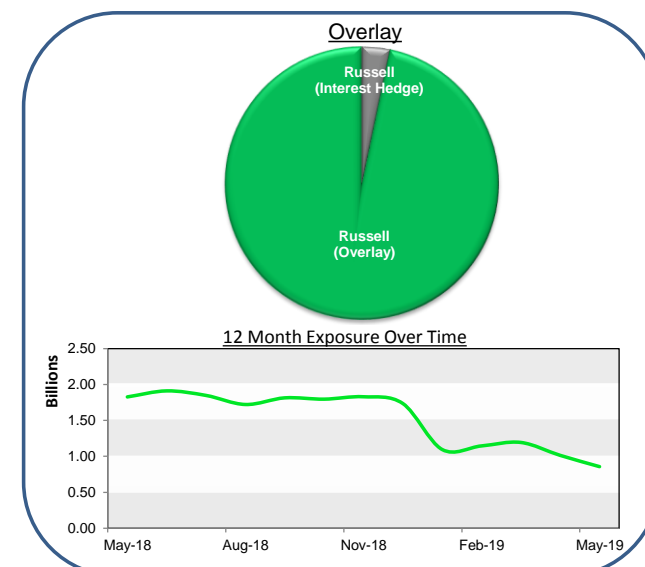
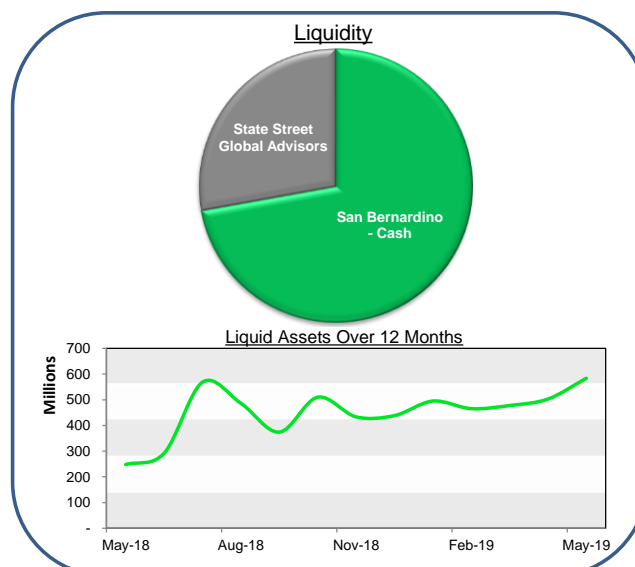
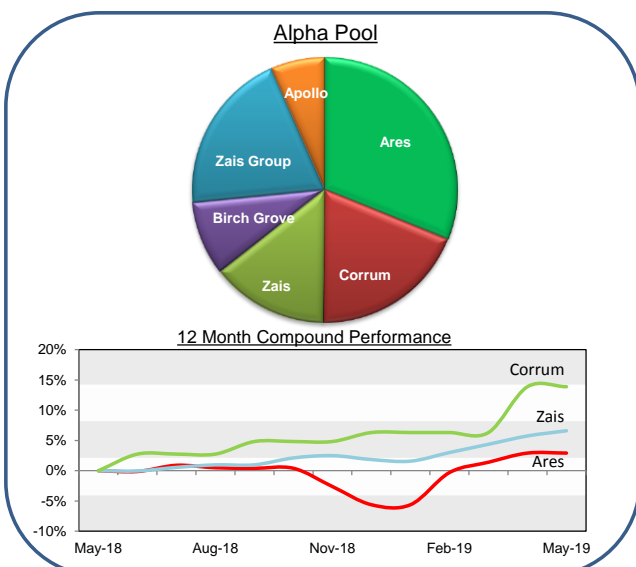
- Source: EurekaHedge Ltd -

Value at Risk

- The Alpha Pool Portfolio has a 5% chance of losing \$71mm in a month.

Sharpe Ratio

- The manager with the highest Sharpe over the last 12 months is State Street Global Advisors. Russell (Interest Hedge) has the lowest risk adjusted returns.



Global Equity

Overview and Risk Profile by Strategy and Manager

- The Global Equity portfolio is comprised of volatility strategies, long equity strategies and hedged equity strategies.
- Volatility seeks to take advantage of excessively high or low price levels in index based option.
- Long Equity strategy holds assets or asset classes without hedging or holding offsetting short exposures.
- Hedged Equity strategy involves holding a stock with an offsetting short exposure. The offsetting short exposure may be for alpha generation purposes rather than for risk management.

Commentary *Graphical representation can be found in the appendix

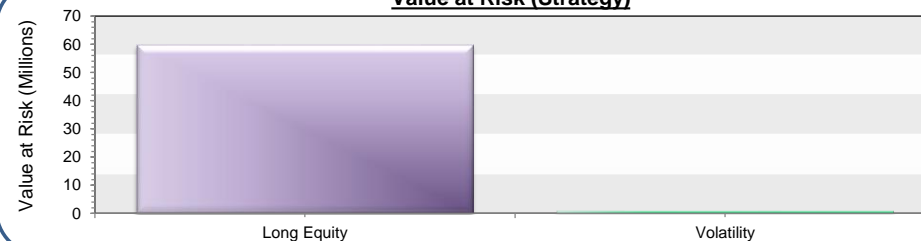
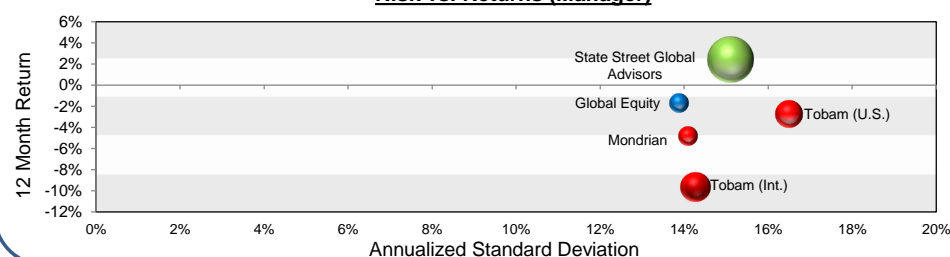
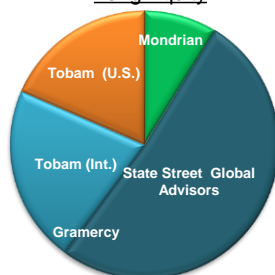
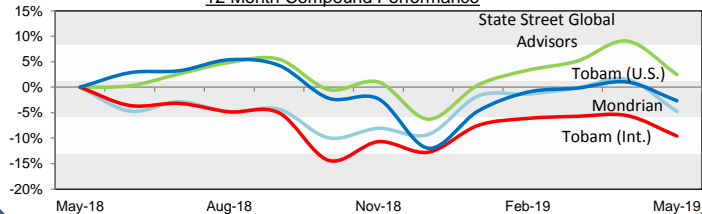
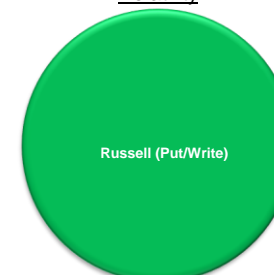
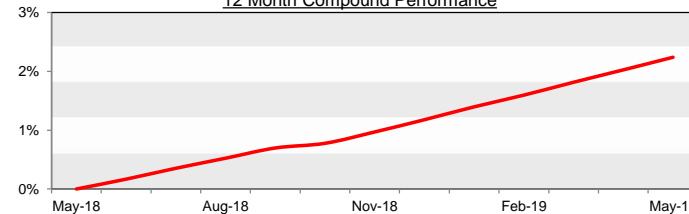
- Preliminary data from the Organization for Economic Cooperation and Development show that the collective pension assets of its member countries fell 3.9% in 2018. Much of the decline was attributed to negative real returns on investments.
- The average return across the 25 countries was -3.1%; and -2.5% when weighted by assets. Australia and Israel led the group with real returns of 5.9% and 3%, respectively, while plans in Poland and Turkey fell 11.6% and 11.3%, respectively. U.S. pension plans returned -3.9% in 2018 and ended the year with about \$15.6 trillion in pension assets, or 76.3% of GDP, according to the OECD.
- **Source:** Organization for Economic Cooperation and Development-

Value at Risk

- The Global Equity Portfolio has a 5% chance of losing \$60mm in a month.

Sharpe Ratio

- The best performing manager from a risk adjusted returns perspective is State Street Global Advisors. Tobam (Int.) has the lowest Sharpe within Global Equity.

Value at Risk (Strategy)Risk vs. Returns (Manager)Long Equity12 Month Compound PerformanceVolatility12 Month Compound Performance

Real Assets and Real Estate

Overview and Risk Profile by Strategy and Manager

- The Real Asset Portfolio is made up of investments in Timber, Infrastructure, Commodities and Real Estate.
- Timber is designed as an inflation hedge and an asset class that delivers a consistent yield.
- Infrastructure takes on a more Private Equity approach to the asset class as opposed to an income oriented structure.
- Commodities are designed as an inflation hedge and diversifier.

Commentary * Graphical representation can be found in the appendix

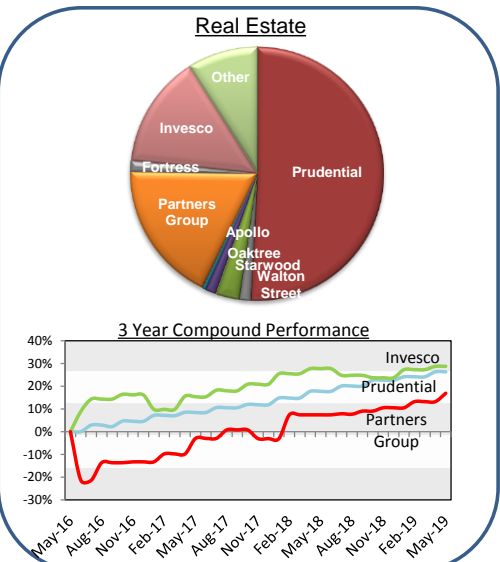
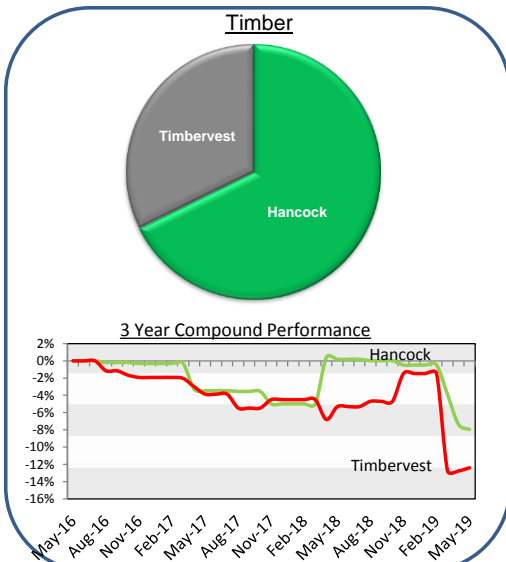
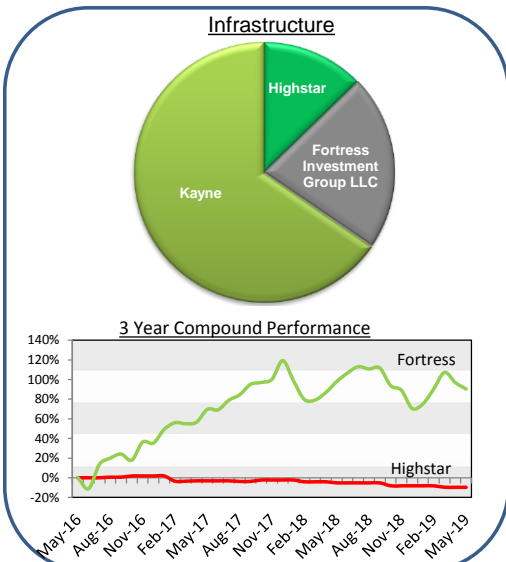
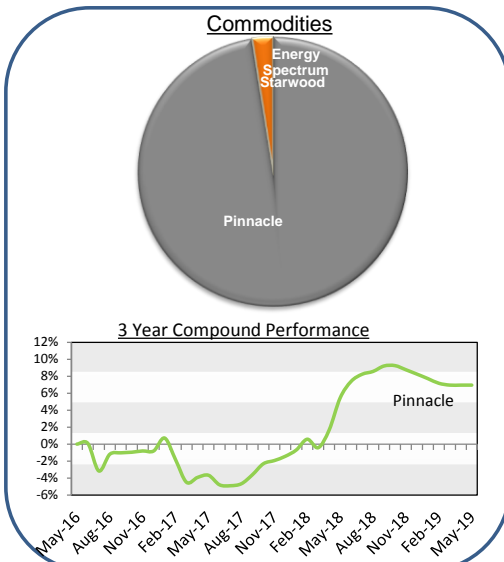
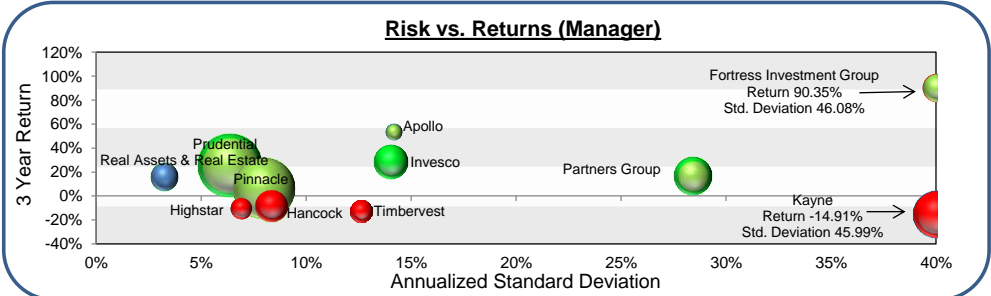
- The price per barrel of West Texas Intermediate crude oil has risen as much as 56% since its 2018 decline, which bottomed out at \$42.53 per barrel on December 24. Producers increased production as the higher price made doing so relatively more profitable. However, they might have gone too far as oil refinery inventories appear to overrun demand.
 - As of May 31, the U.S. Energy Information Administration reported its days-of-supply figure, or how many days their current inventory can meet demand before running out, at 28.9 days, its highest mark since Oct. 6, 2017.
 - The U.S. Department of Energy recently reported that as of the end of May, U.S. crude production reached a record 12.4 million barrels per day, up from about 10.9 million barrels 12 months earlier.
- Source: U.S. Energy Information Administration -

Value at Risk

- The Real Assets and Real Estate Portfolio has a 5% chance of losing \$25mm in a month.

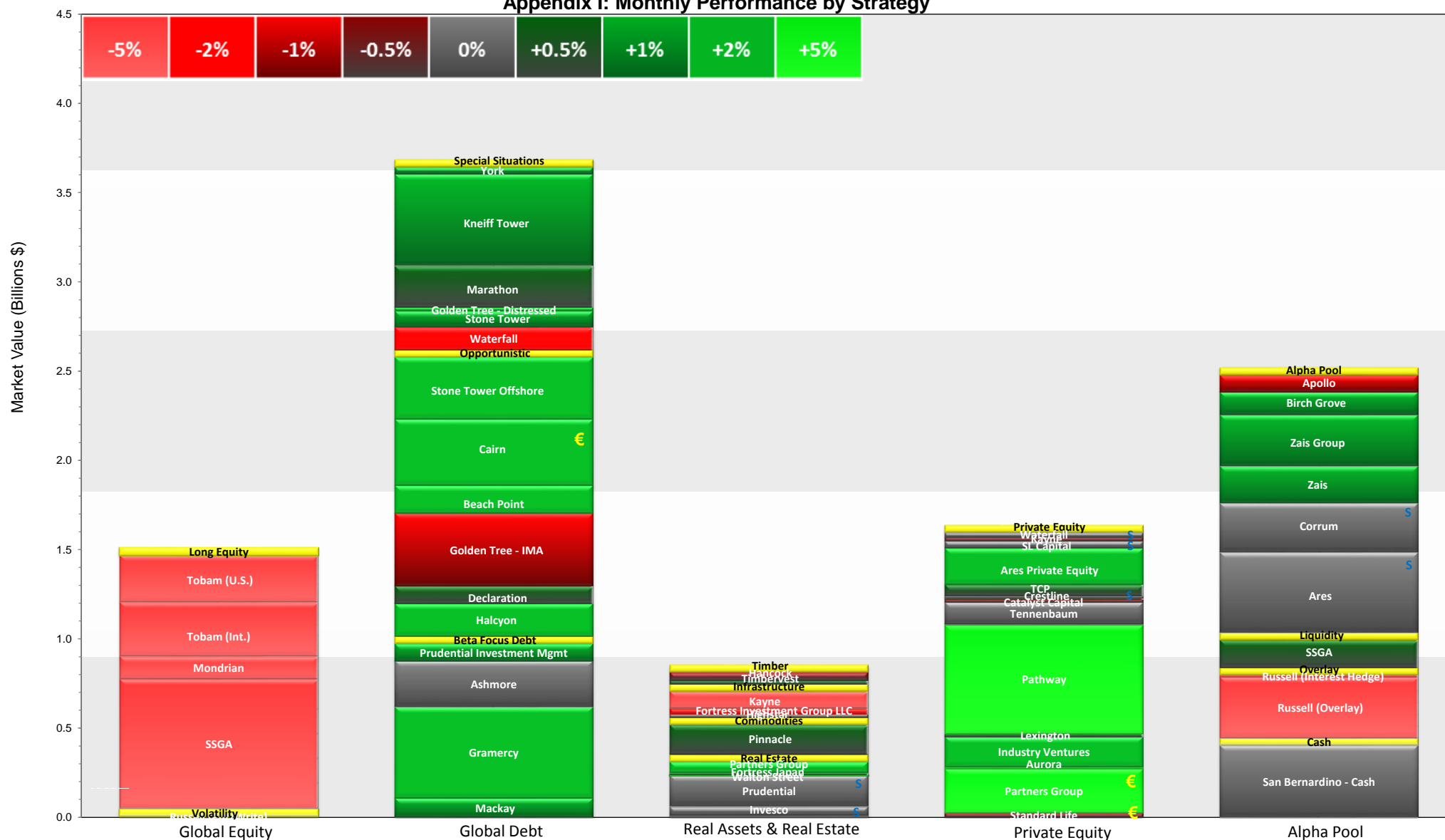
Sharpe

- The best performing manager from a risk adjusted returns perspective is Prudential.
- The worst performing manager from a risk adjusted returns perspective is Highstar.



Key:  Best Performing Manager*  Worst Performing Manager*  Most Volatile*  Least Volatile* * Relative to sub-Strategy only

Appendix I: Monthly Performance by Strategy



Notes

 Current month valuations not available from Custodian

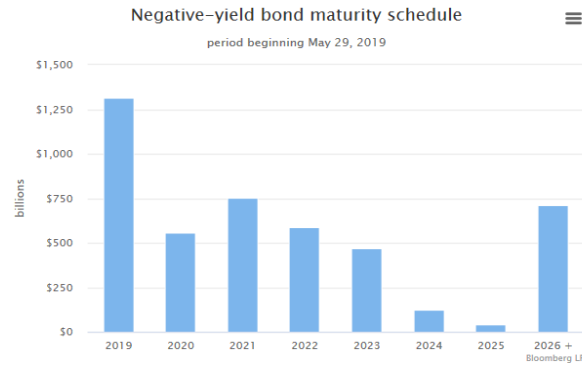
 Performance impacted by currency movements

Appendix II: Strategy Commentary Graphical Representations

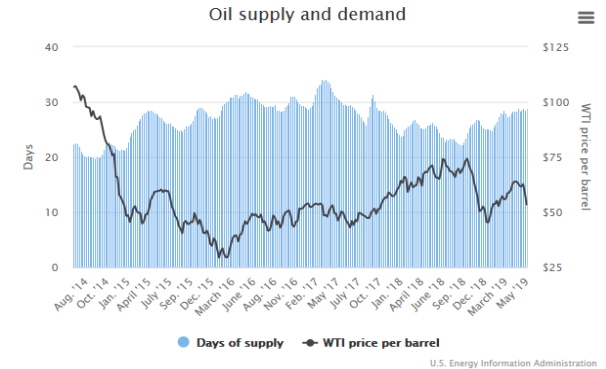
Global Equity



Global Debt

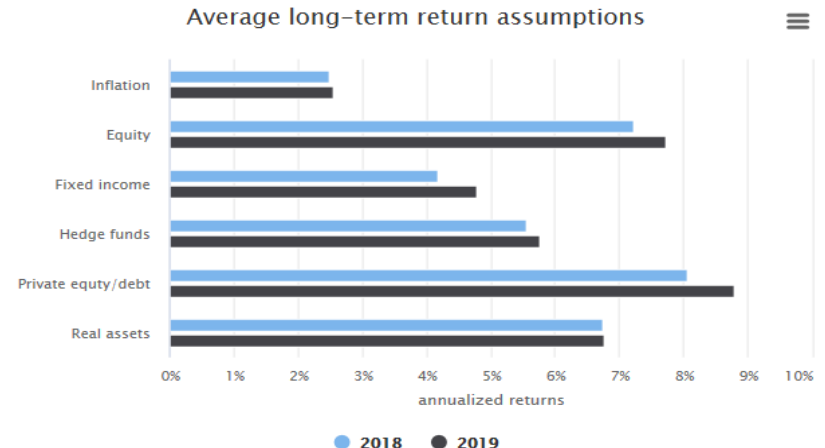
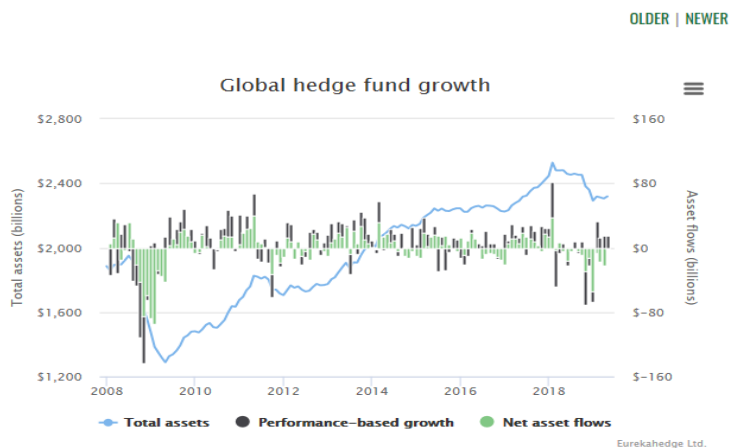


Real Assets and Real Estate



Alpha Pool

Private Equity



Appendix III: Calculation Methodologies**Synthetic Calculation Methodology**

- 1) Calculate absolute returns to calculate synthetic benefit.
- 2) Input benefit to all sub-asset classes with a synthetic exposure.
- 3) Calculate an adjusted weighted net return for sub-asset class and asset class.

SBCERA Total Plan

The SBCERA Total Plan performance calculation uses the monthly returns as calculated by Maples for the 1 year time period. For the 2, 3 and 5 year time horizons, the performance returns have been sourced from the monthly State Street Summary of Manager Performance reports.

60/40 Portfolio

The 60/40 Portfolio is a weighted average of 2 indices that have been chosen to benchmark the Equity and Fixed Income asset classes. The MSCI AC World Daily Total Return Gross Index is used as the Equity benchmark with an allocation weighting of 60%. The Barclays Capital U.S. Aggregate Bond Index is used as the Fixed Income benchmark with an allocation weighting of 40%.

Policy Index

The Policy Index return is composed of a weighted basket of Asset Class benchmarks - R3000 (29%), Barclays Aggregate (22%), Global Aggregate (ex US) (18%), MSCI AC World (ex US) (15%), NCREIF (9%), NCREIF timber (2.5%), DJ/UBS Commodity Index (2.5%) and 91 day T-Bill (2 %).

Performance Calculation Methodology

- Performance returns over all time horizons have been calculated by geometrically compounding the monthly returns series.
- SBCERA \$ value added figures are taken directly from State Street and are not calculated by Maples.

Stress/Scenario Test Methodology

- The SBCERA portfolio is a model portfolio comprised of SBCERA policy indices. The weightings are determined based on current asset allocation amounts. The methodology incorporates the protection gained from the Put Options positions.

As at 31 May 2019

San Bernardino County Employees' Retirement Association

Appendix III: Calculation Methodologies (cont'd)**Stress/Scenario Test Methodology**

• The following table gives some background to the events that have had significant impact on markets over the past decade:

Scenario/Stress	Calculation Period	Description
Lehman Default - 2008	Scenario: 09/15/2008 to 10/14/08	Month immediately following default of Lehman brothers in 2008.
Russian Financial Crisis - 2008	Scenario: 08/07/2008 to 10/06/2008	War with Georgia and rapidly declining oil prices raise fears of an economic recession within the region.
US 10yr Treasury up 100bps	Stress Test	This scenario shocks the US Treasury Curves Parallel + 100bps and uses the Bloomberg multi asset factor model to propagate that shock to other curves and asset classes.
Debt Ceiling Crisis & Downgrade 2011	Scenario: 07/22/2011 to 08/08/2011	Debt ceiling crisis that led to USA credit downgrade. This stress scenario describes a 17 day period starting from 7/22/2011 when market began to react to debt ceiling impasse. 8/8/2011 is the first business day after downgrade announcement.
Greece Financial Crisis - 2010	Scenario: 04/26/2010 to 06/08/2010	Greece was one of the fastest growing economies in the Eurozone from 2000-2007. The cost of financing this growth however resulted in alarming high government deficits and debt levels relative to GDP. On April 27th, 2010 the Greek Debt rating was downgraded.
Oil Prices Drop - May 2010	Scenario: 05/03/2010 to 05/20/2010	The price of oil drops 20% due to concerns over how European countries would reduce budget deficits in the wake of the European economic crisis.
Equities down 10%	Stress Test	Global market factors down 10%.
Libya Oil Shock - Feb 2011	Scenario: 02/14/2011 to 02/23/2011	Civil war in Libya breaks out on February 15th 2011, causing oil prices to surge.
Equities up 10%	Stress Test	Global market factors up 10%.
Equity Markets Rebound - 2009	Scenario: 03/04/2009 to 06/01/2009	Global equity markets rebound following 2008 drawdown.
Bear Market Jan 14 th 2000 – Oct 9 th 2002	Scenario: 01/14/2000 to 10/09/2002	The Dot-com crash was followed by major accounting scandals such as Enron, and the 9/11 attacks which shook investor confidence leading to a prolonged mild recession.
Bear Market Oct 9 th 2007 – Mar 9 th 2009	Scenario: 10/09/2007 to 03/09/2009	A debt- fuelled housing bubble collapsed as millions of Americans defaulted on their mortgages. Liquidity dried up forcing governments to enact enormous stimulus measure to prop up their economies.