



**SWAN** GLOBAL  
INVESTMENTS

## The Swan Defined Risk Global Portfolio

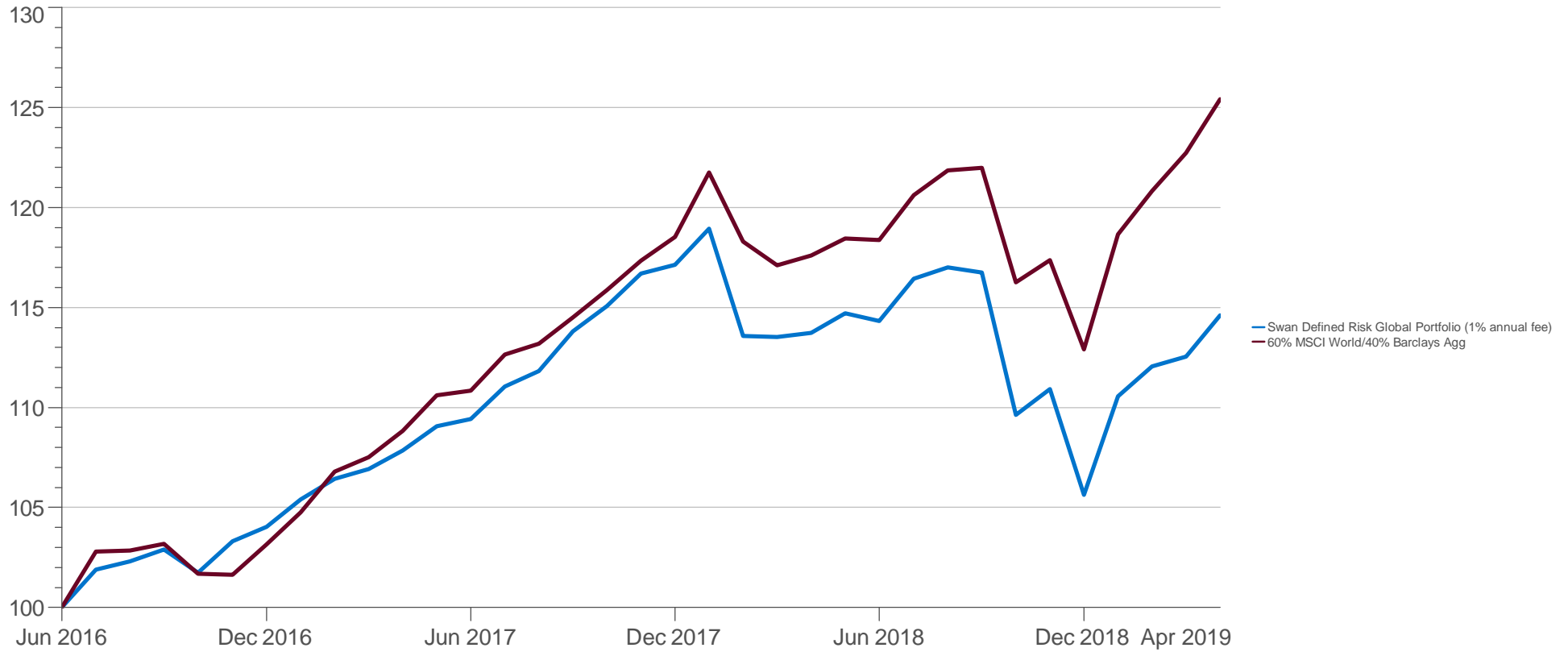
Global Hedged Equity Portfolio - Performance Analysis

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March, 2019

### Manager Performance

July 2016 - April 2019 (Single Computation)



### Multi-Statistic (Custom Table)

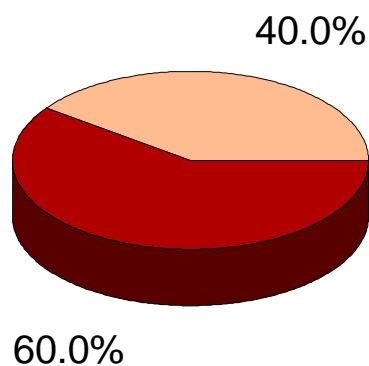
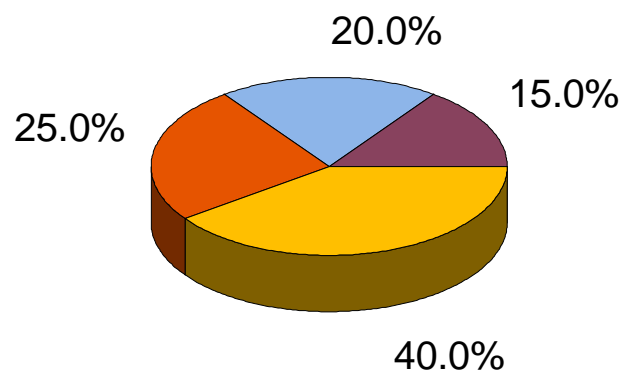
July 2016 - April 2019: Summary Statistics

	Return	Cumulative Return	Standard Deviation (Population)	Beta vs. Market	Excess Return vs. Market	Sharpe Ratio
Swan Defined Risk Global Portfolio (1% annual fee)	4.93%	14.61%	6.83%	1.02	-3.39%	0.53
60% MSCI World/40% Barclays Agg	8.32%	25.41%	6.28%	1.00	0.00%	1.10

### Blend Weights

As of July 1, 2016

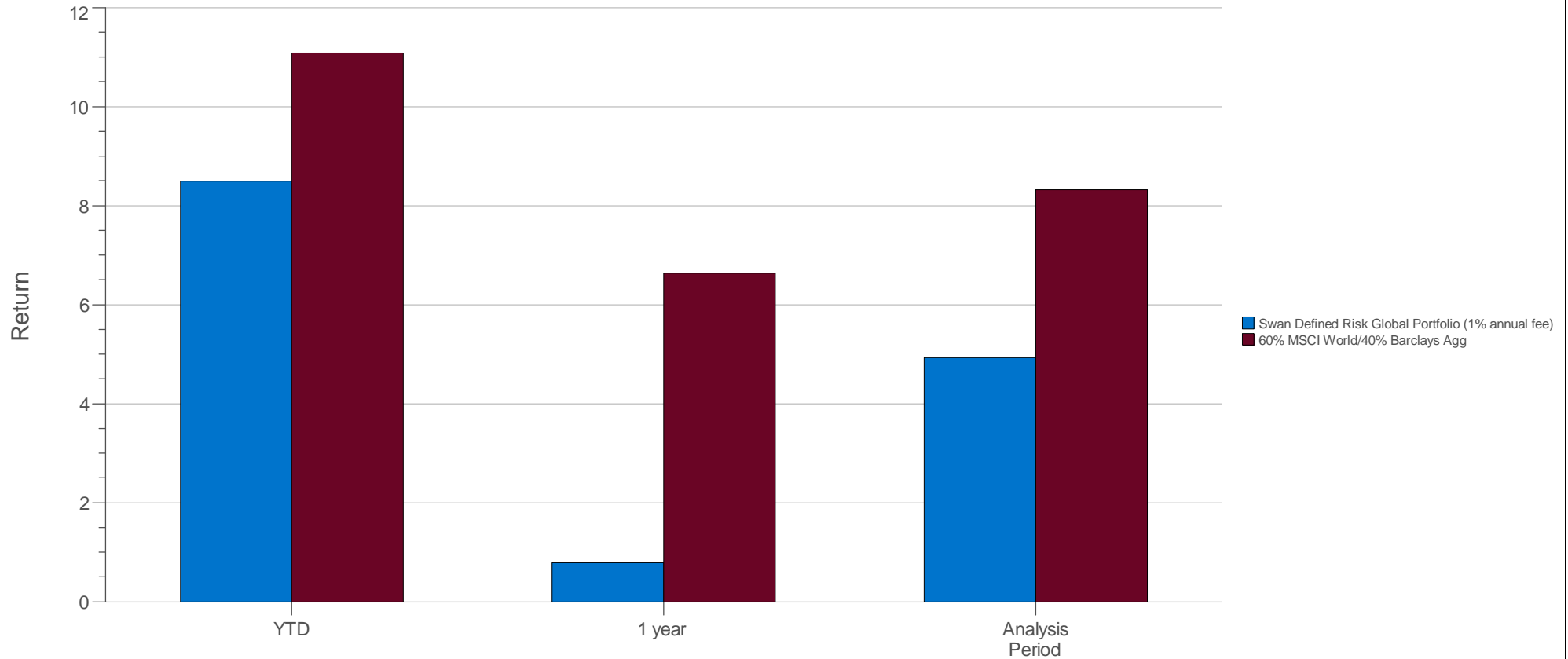
#### Swan Defined Risk Global Portfolio 60% MSCI World/40% Barclays Agg



- Swan Defined Risk Composite (Actual)
- Swan Defined Risk Small Cap Composite (Actual)
- Swan Defined Risk Foreign Developed Composite (Actual)
- Swan Defined Risk Emerging Markets Composite (Actual)
- Swan Defined Risk Small Cap Composite (Actual)
- MSCI World Index
- Bloomberg Barclays U.S. Aggregate

### Manager vs Benchmark: Return

July 2016 - April 2019 (not annualized if less than 1 year)



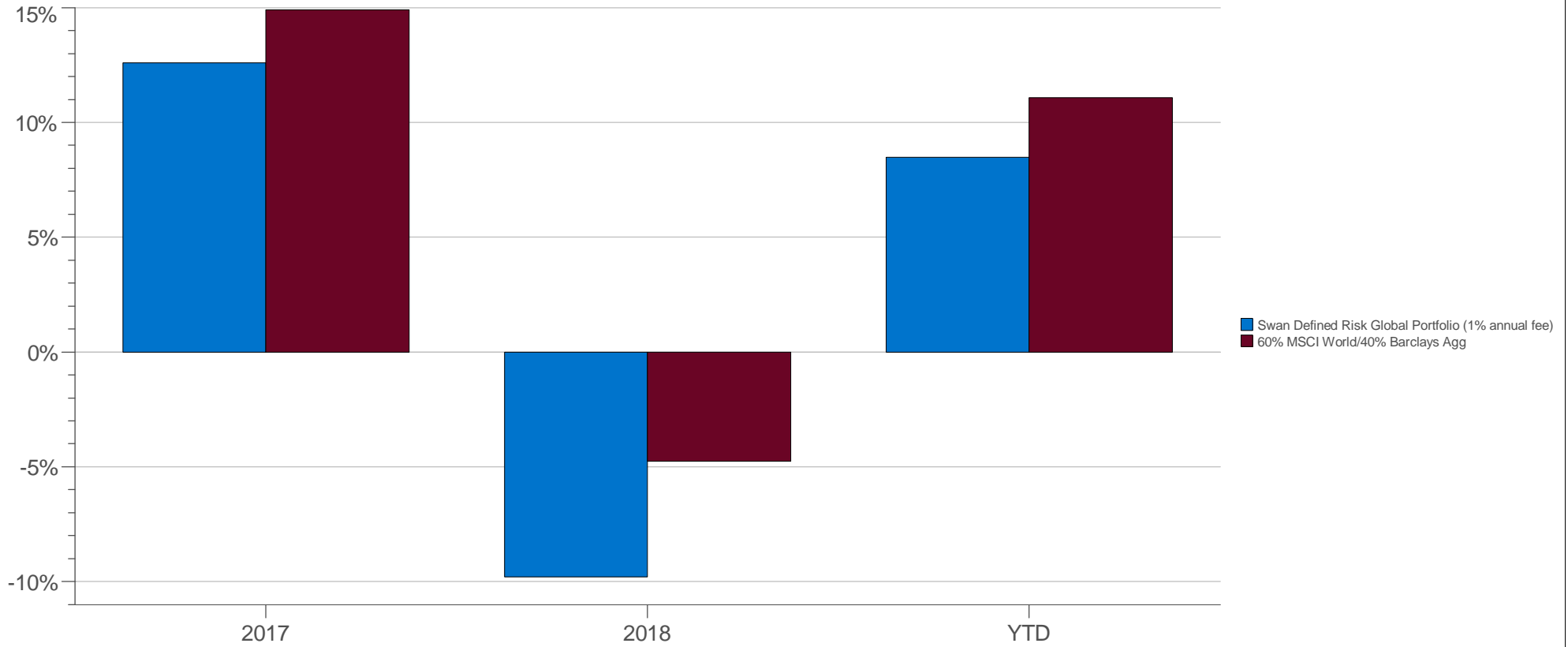
### Manager vs Benchmark: Return

July 2016 - April 2019 (not annualized if less than 1 year)

	YTD	1 year	Analysis Period
Swan Defined Risk Global Portfolio (1% annual fee)	8.49%	0.78%	4.93%
60% MSCI World/40% Barclays Agg	11.09%	6.64%	8.32%

### Calendar Year Return

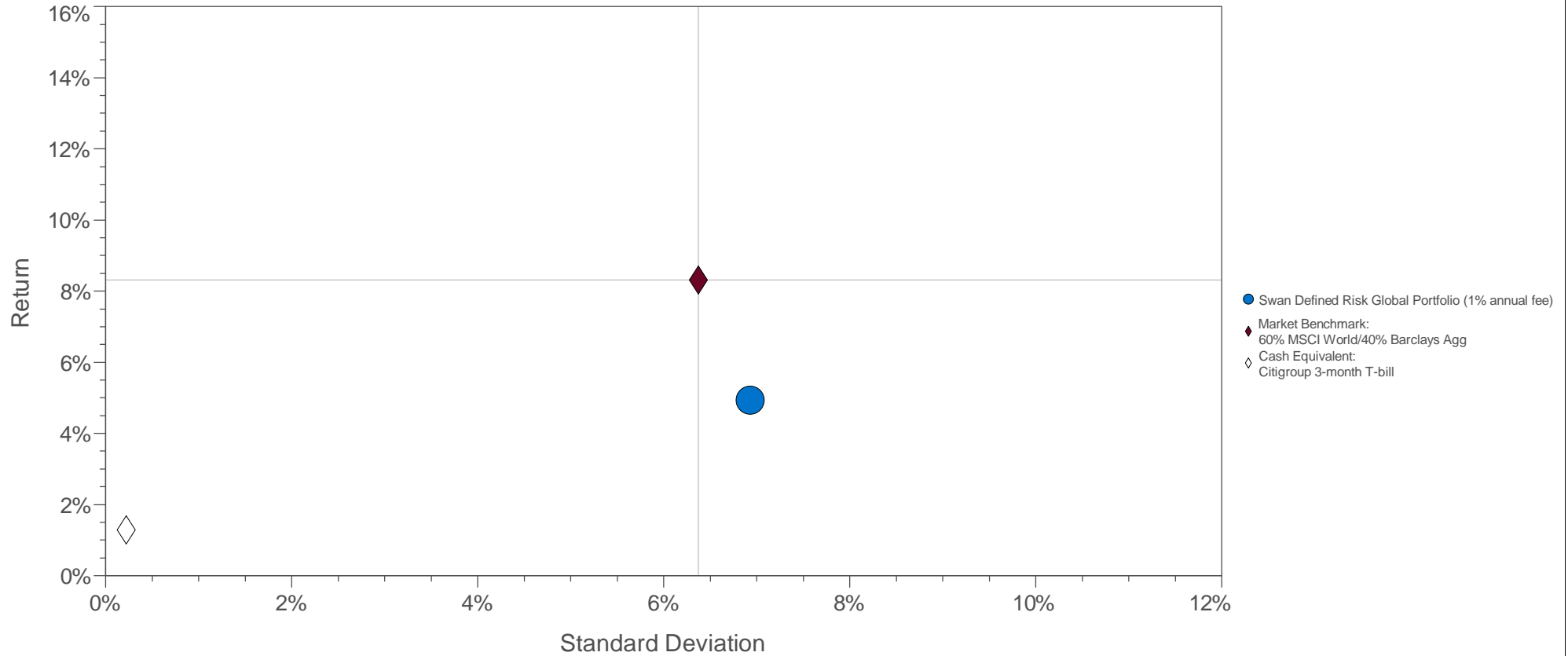
As of April 2019



	2017	2018	YTD
Swan Defined Risk Global Portfolio (1% annual fee)	12.60%	-9.81%	8.49%
60% MSCI World/40% Barclays Agg	14.90%	-4.76%	11.09%

### Risk / Return

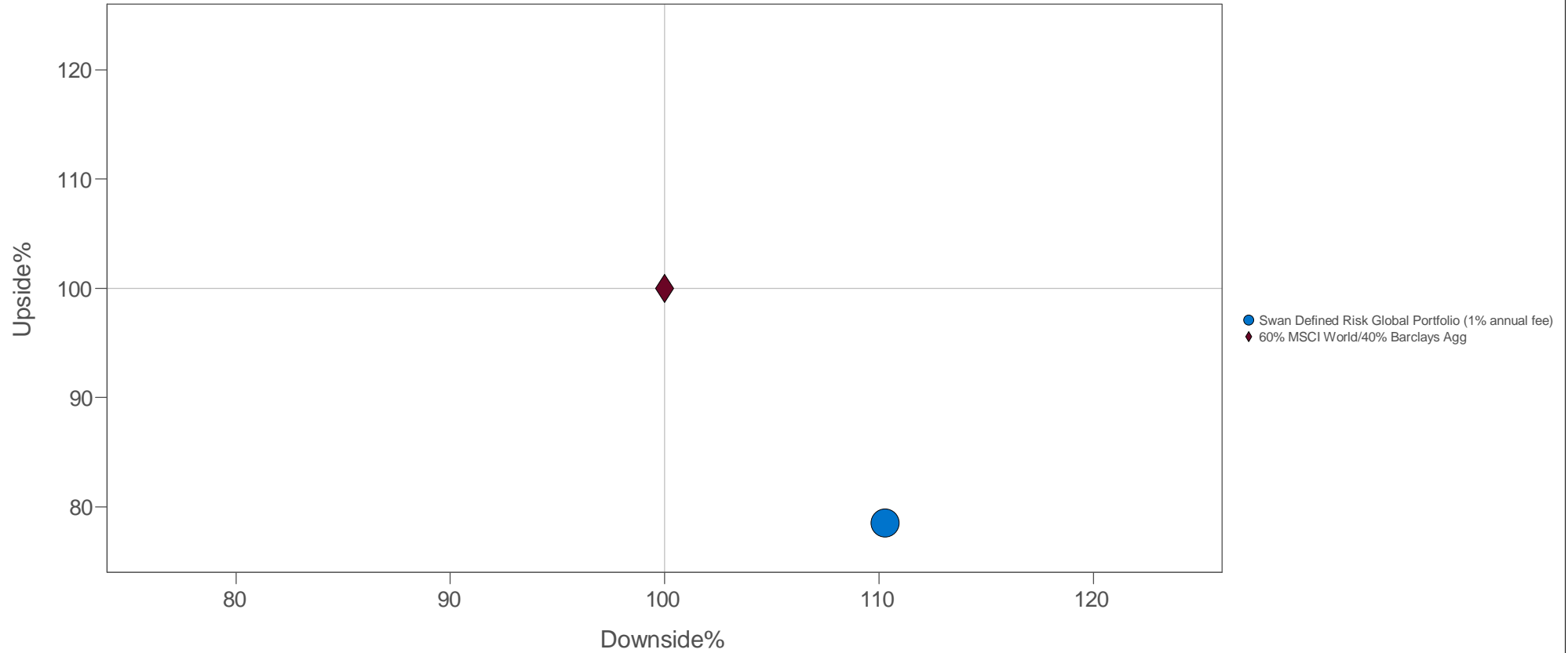
July 2016 - April 2019 (Single Computation)



	Return (%)	Std Dev (Pop.) (%)	Downside Risk (%)	Beta vs. Market	Alpha vs. Market	R-Squared vs. Market (%)	Sharpe Ratio
Swan Defined Risk Global Portfolio (1% annual fee)	4.93	6.83	5.86	1.0248	-3.31	88.82	0.5253
60% MSCI World/40% Barclays Agg	8.32	6.28	5.02	1.0000	0.00	100.00	1.1028

### Upside / Downside

July 2016 - April 2019 (Single Computation)



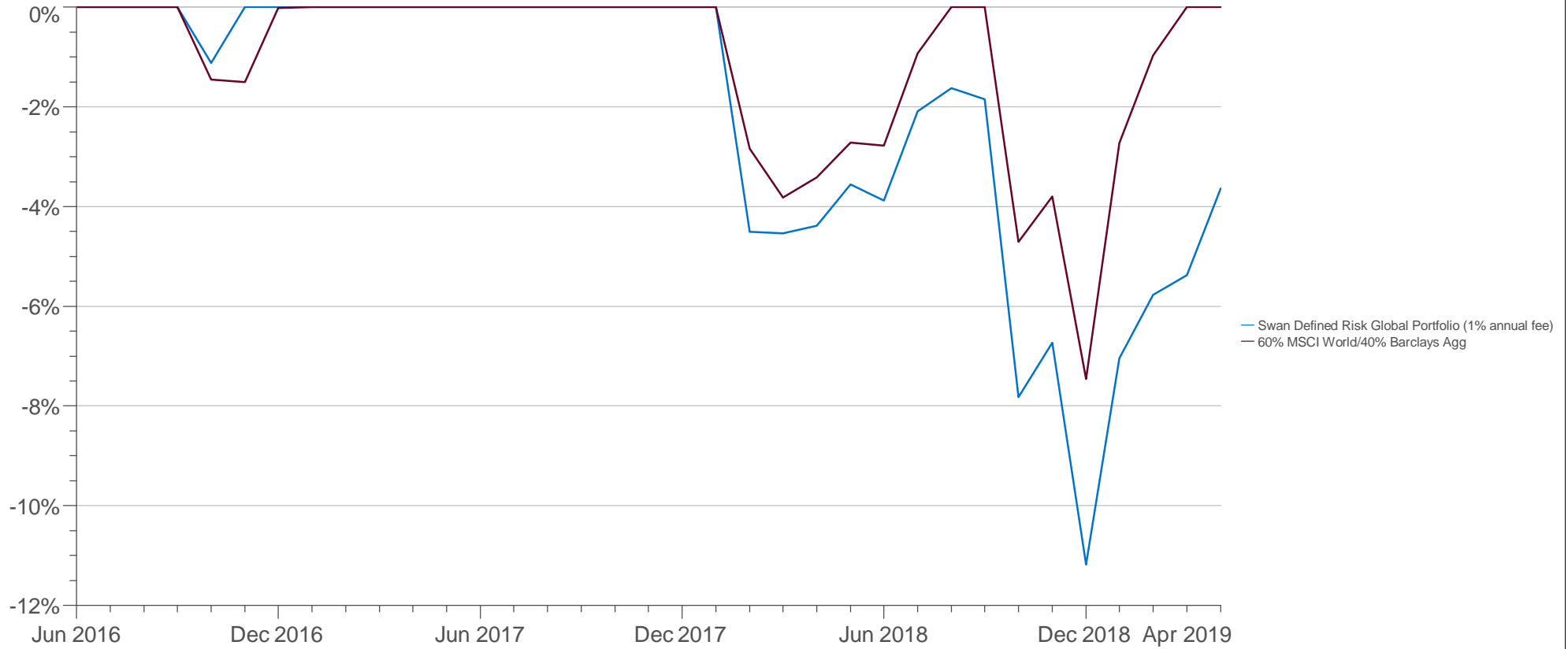
### Upside / Downside Table

July 2016 - April 2019 (Single Computation)

	# of Months		Average Return (%) vs. Market		Month (%)		1-Year (%)		Market Benchmark (%)		
	Up	Down	Up Market	Down Market	Best	Worst	Best	Worst	Up Capture	Down Capture	R-Squared
Swan Defined Risk Global Portfolio (1% annual fee)	27	7	1.10	-2.19	4.66	-6.10	13.09	-9.81	78.5	110.3	88.82
60% MSCI World/40% Barclays Agg	27	7	1.38	-1.99	5.11	-4.71	16.24	-4.76	100.0	100.0	100.00

### Drawdown

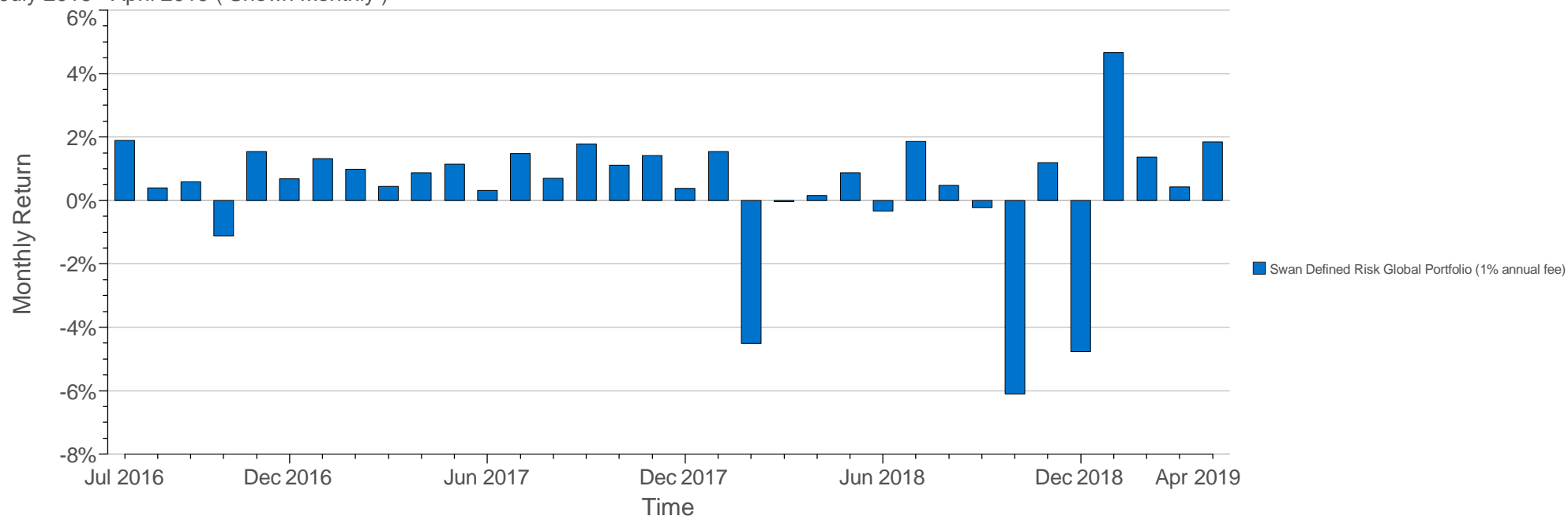
July 2016 - April 2019



	Max Drawdown	Max Drawdown Begin Date	Max Drawdown End Date	Max Drawdown Length	Max Drawdown Recovery Date	Max Drawdown Recovery Length	Longest Drawdown	Longest Drawdown Begin Date	Longest Drawdown End Date	Longest Drawdown Length	Longest Drawdown Recovery Date	Longest Drawdown Recovery Length	Pain Index	Pain Ratio
Swan Defined Risk Global Portfolio (1% annual fee)	-11.18%	Feb 2018	Dec 2018	11	N/A	N/A	-11.18%	Feb 2018	Dec 2018	11	N/A	N/A	2.21%	1.65
60% MSCI World/40% Barclays Agg	-7.46%	Oct 2018	Dec 2018	3	Mar 2019	3	-7.46%	Oct 2018	Dec 2018	3	Mar 2019	3	1.15%	6.11



Monthly Return / Time  
July 2016 - April 2019 ( Shown Monthly )



Periodic Returns  
January 2016 - April 2019

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Swan Defined Risk Global Portfolio (1% annual fee)	2019	4.66	1.36	0.42	1.84	-	-	-	-	-	-	-	-	8.49
	2018	1.54	-4.51	-0.03	0.16	0.87	-0.33	1.86	0.47	-0.22	-6.10	1.19	-4.77	-9.81
	2017	1.32	0.99	0.45	0.87	1.14	0.32	1.48	0.71	1.77	1.11	1.42	0.38	12.60
	2016	-	-	-	-	-	-	1.89	0.40	0.58	-1.12	1.54	0.69	-
60% MSCI World/40% Barclays Agg	2019	5.11	1.81	1.60	2.17	-	-	-	-	-	-	-	-	11.09
	2018	2.72	-2.84	-1.01	0.43	0.72	-0.06	1.90	1.03	0.10	-4.71	0.95	-3.80	-4.76
	2017	1.54	1.96	0.66	1.23	1.64	0.21	1.63	0.47	1.18	1.17	1.28	1.01	14.90
	2016	-	-	-	-	-	-	2.80	0.03	0.32	-1.45	-0.05	1.51	-

## Market Cycles Defined

### **March 2009 - present: "New Heights"**

Massive government intervention in the form of government guarantees and monetary and fiscal stimulus trigger a sharp rally. Much of the market losses are regained, although investors still bear the psychological scars of the Credit Crisis. The economic performance of many countries badly lags capital market performance.

### **August 2007 - February 2009: "Credit Crisis"**

Years of cheap money, excess liquidity, overborrowing, and sloppy securitizations come to a head and plunge the markets in to their worst period since the Great Depression. The financial landscape is changed in ways previously unimaginable and trillions of dollars of wealth disappear.

	<u>What Is It?</u>	<u>What Is Considered Good?</u>
Alpha	Alpha measures the risk-adjusted added value an active manager adds above and beyond the passive benchmark.	Alphas should be positive. A negative alpha suggests the manager failed to add value over the benchmark on a risk-adjusted basis.
Beta	Beta measures the sensitivity of the manager to movements in an underlying benchmark.	Conservative investors prefer a beta less than 1.0, suggesting the investment moves less than the market. Aggressive investors prefer a beta greater than 1.0, which are more sensitive to market movements.
Down Capture	Down capture measures the percentage of market losses endured by a manager when markets are down.	Down capture should be less than 100%, meaning a manager experiences less than the full market downswing.
Downside Deviation	Downside deviation is a risk statistic measuring volatility. It is a variation of standard deviation that focuses only upon the "bad" volatility.	Generally, the lower the better. A manager's downside deviation should be lower than index or lower than universe's average.
Excess Return	The simplest of the benchmark-relative statistics, excess return measures the difference between the manager return and the benchmark return.	One would want the excess return to be positive, indicating the manager outperformed its benchmark.
Information Ratio	A benchmark relative return-versus-risk metric, the information ratio measures the excess return against the benchmark divided by tracking error, where tracking error is a measure of consistency.	Information ratios should be positive. A good information ratio is typically in the 0.40-0.60 range; it is rare to see active managers with information ratios greater than 1.00.
Kurtosis	Kurtosis identifies where the volatility risk came from in a distribution of returns. Kurtosis improves one's understanding of volatility risk.	Generally investors like to see kurtosis numbers close to zero or even negative. The larger the kurtosis, the more of an investment's risk lies in the tails of the distribution.
Maximum Drawdown	A risk metric indicating capital preservation, the maximum drawdown measures the peak-to-trough loss of an investment.	The smaller the maximum drawdown the better. A maximum drawdown of 0% indicates an investment never lost money. One should keep in mind the type of investment and the time period analyzed to understand if a maximum drawdown is reasonable.
Pain Index	A proprietary risk metric, the pain index quantifies the capital preservation tendencies of a manager or index. It measures the depth, duration, and frequency of periods of losses.	The lower the pain index the better. A pain index of 0% indicates the investment has never lost value. A pain index should be compared against a benchmark or peer group in order to understand context.
Pain Ratio	A proprietary return-versus-risk trade-off metric, the pain ratio compares the added value over the risk-free rate against the depth, duration, and frequency of losses.	The higher the pain ratio the better. A high pain ratio indicates 1) a high risk premium over the risk free rate, 2) very little losses, or 3) a combination of both. One should compare an investment's pain ratio to a benchmark or universe.
R-Squared	R-squared represents the "goodness of fit" of a manager to its benchmark. R-squared is the percentage of variation in a manager's returns explained by the benchmark's returns.	An investor who believes it is difficult for active managers to outperform a passive benchmark would likely prefer a high r-squared. Alternatively an investor who believes in active management would prefer a lower r-squared.
Sharpe Ratio	The most famous return-versus-risk measurement, the Sharpe ratio represents the added value over the risk-free rate per unit of volatility risk.	Generally, the higher the better. A manager's Sharpe ratio should be higher than index or higher than a universe average.
Skewness	Skewness measures to what direction and degree a set of returns is tilted or "skewed" by its extreme outlier occurrences.	Generally speaking investors prefer a positive skewness rather than a negative skewness. However, in the real world it is difficult to find

investment with a positive skew.

**Sortino Ratio** A variation of the Sharpe ratio, the Sortino ratio is a return-versus-risk trade-off metric that uses downside deviation as its measure of risk.

**Standard Deviation** Standard deviation measures how closely returns track their long term average. Standard deviation measures volatility risk.

**Up Capture** Up capture measures the percentage of market gains captured by a manager when markets are up.

The larger the Sortino ratio the better. One must compare a manager's Sortino ratio to an index or peer group in order to understand whether or not a Sortino ratio is good or bad. It is also useful to keep in mind the time period being analyzed.

Generally, the lower the better. A manager's standard deviation should be lower than index or lower than universe's average.

Ideally up capture will be greater than 100%, meaning the manager does better than the market when markets are up. The larger the up capture the better.

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Swan offers and manages the proprietary Defined Risk Strategy (“DRS”) for its clients including individuals, institutions and other investment advisor firms. Swan’s performance results herein are of the Defined Risk Global Portfolio which includes all non-qualified accounts. Additional information regarding Swan’s composite policies and procedures for calculating and reporting performance returns is available upon request. All Swan performance results have been compiled solely by Swan Global Investments and are unaudited. Swan claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with GIPS. Swan’s compliance with GIPS has been independently verified for the periods July 1, 1997 through December 31, 2018. The Spaulding Group conducted Swan’s verification. A copy of the verification report is available upon request. To receive copies of the report please call 970-382-8901 or email [operations@swanglobalinvestments.com](mailto:operations@swanglobalinvestments.com). Verification assesses whether (1) the firm has complied with all the composite construction requirements of GIPS on a firm wide basis and (2) the firm’s policies and procedures are designed to calculate and present performance in compliance with GIPS. Verification does not ensure the accuracy of any specific composite presentation.

The investment return data for the DRS strategies as indicated in this material is not actual performance history. The Strategies have not been applied in a real world setting during the full date range listed. All the performance information provided herein for these strategies represent back-tested data, under assumption that the income component of the Defined Risk Strategy was applied. All Swan products utilize the Defined Risk Strategy (“DRS”), but may vary by asset class, regulatory offering type, etc. Accordingly, all Swan DRS product offerings will have different performance results, and comparing results among the Swan products and composites may be of limited use. Swan’s investments may consist of securities which vary significantly from those in the benchmark indexes listed above and performance calculation methods may not be entirely comparable. Accordingly, comparing results shown to those of such indexes may be of limited use. Actual results may materially vary and differ significantly from the performance suggested by back-tested data. This is not a guarantee or indication of future performance.

Actual, net-of-fees returns were used for the Defined Risk Global Portfolio. For the backtests, a 1% annual fee was used, applied on a quarterly basis.

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The DRS Select Composite demonstrates the performance of all non-qualified assets managed by Swan since inception. It includes discretionary individual accounts whose account holders seek the upside potential of owning stock, and the desire to help eliminate most of the risk associated with owning stock. The composite relies on LEAPS and other options to manage this risk. Individual accounts own S&P 500 correlated exchange traded funds and LEAPS associated with the exchange traded funds as well as multiple other option spreads that represent other indices that are widely traded. The DRS was designed to protect investors from substantial market declines, provide income in flat or choppy markets, and to benefit from market appreciation. Stock and options are the primary components of the strategy.

Swan managed accounts may own assets and follow investment strategies which cause them to differ materially from the composition and performance of the indices, benchmarks or comparisons shown on performance or other reports. Because the strategies used in the accounts or portfolios involve active management of a potentially wide range of assets, no widely recognized benchmark is likely to be representative of the performance of any managed account. Widely known indices and/or market indices are shown simply as a reference to familiar investment benchmarks, not because they are, or are likely to become, representative of past or expected managed account performance. Historical performance results for market indices and/or categories generally do not reflect the deduction of transaction and/or custodial charges or the deduction of an investment management fee, the incurrence of which would have the effect of decreasing historical performance results. Economic factors, market conditions, and investment strategies will affect the performance of any portfolio and there

are no assurances that it will match or outperform any particular benchmark. The benchmark used for the DRS Select Composite is the S&P 500 Index, which consists of approximately 500 large cap stocks. The S&P 500 is an index which does not charge fees. An investment cannot be made directly in an index.

ETFs and mutual funds are subject to investment advisory and other expenses, which will be indirectly paid by the investor. As a result, the cost of investing in the DRS or fund will be higher than the cost of investing directly in ETFs and may be higher than other mutual funds that invest directly in stocks. ETFs and options are subject to specific risks, depending on the nature of the fund. The use of leverage, such as that embedded in options, could magnify gains or losses. Written option positions expose investments to potential losses many times the option premium received. The adviser's dependence on its DRS process and judgments about the attractiveness, value and potential appreciation of particular ETFs and options in which the adviser invests or writes may prove to be incorrect and may not produce the desired results. Purchased options may expire worthless. Purchased put options may have imperfect correlation to the hedged value of the invested equities or ETFs. Written call and put options may limit the portfolio's participation in equity market gains and may amplify losses in market declines. The portfolio's losses are potentially large in a written put or call transaction. If un-hedged, written options expose the portfolio to potentially unlimited losses. There is no guarantee the DRS structured portfolio investment will meet its objectives.

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