

# Portfolio Optimization

This portfolio optimizer tool supports the following portfolio optimization strategies:

- Mean Variance Optimization – Find the optimal risk adjusted portfolio that lies on the efficient frontier
- Conditional Value-at-Risk – Optimize the portfolio to minimize the expected tail loss
- Risk Parity – Find the portfolio that equalizes the risk contribution of portfolio assets
- Tracking Error – Find the portfolio that minimizes the tracking error against the selected benchmark
- Information Ratio – Find the portfolio that maximizes the information ratio against the selected benchmark
- Kelly Criterion – Finds the portfolio with the maximum expected geometric growth rate
- Sortino Ratio – Find the portfolio that maximizes the Sortino ratio for the given minimum acceptable return
- Omega Ratio – Find the portfolio that maximizes the Omega ratio for the given minimum acceptable return
- Maximum Drawdown – Find the portfolio with the minimum worst case drawdown with optional minimum acceptable return

The optimization is based on the monthly return statistics of the selected portfolio assets for the given time period. The optimization result does not predict what allocation would perform best outside the given time period, and the actual performance of portfolios constructed using the optimized asset weights may vary from the given performance goal.

The required inputs for the optimization include the time range and the portfolio assets. Portfolio asset weights and constraints are optional. You can also use the Black-Litterman model based portfolio optimization, which allows the benchmark portfolio asset weights to be optimized based on investor's views.

Portfolio Type

Tickers

Time Period

Month-to-Month

Start Year

2018

First Month

Sep

End Year

2021

Last Month

Feb

Optimization Goal

Maximize Kelly Criterion

Asset Constraints

Yes

Compared Allocation

Maximum Sharpe Ratio Weights

Benchmark

Specify Ticker...

Benchmark Ticker

SCHD

Q

Portfolio Assets			Allocation		Min. Weight		Max. Weight	
1	AVGO	Q		%	2.4	%	8	%
2	HD	Q		%	2.4	%	8	%
3	JPM	Q		%	2.4	%	8	%
4	TXN	Q		%	2.4	%	8	%
5	ABBV	Q		%	2.4	%	8	%
6	FCPT	Q		%	2.4	%	8	%
7	STOR	Q		%	2.4	%	8	%
8	CTRE	Q		%	2.4	%	8	%
9	NSA	Q		%	2.4	%	8	%
10	O	Q		%	2.4	%	8	%
11	APAM	Q		%	2.4	%	8	%
12	MSM	Q		%	2.4	%	8	%
13	COR	Q		%	2.4	%	8	%
14	DTE	Q		%	2.4	%	8	%
15	NTAP	Q		%	2.4	%	8	%
16	SAFT	Q		%	2.4	%	8	%
17	IRM	Q		%	2.4	%	8	%
18	JEPIX	Q		%	5	%	10	%
19	BLOK	Q		%	1	%	5	%
20	SCHD	Q		%	10	%	15	%
Total			0	%				

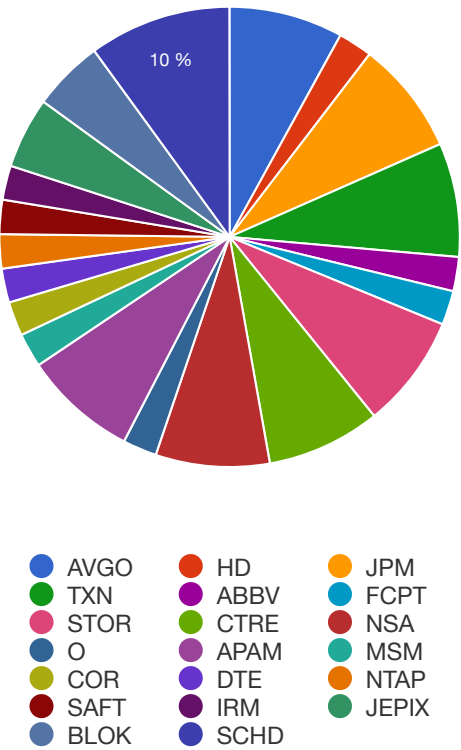
## Portfolio Optimization Results (Sep 2018 - Feb 2021)

Portfolio optimization results with goal to maximize kelly criterion. The possible range of expected annual portfolio returns for the given period taking into account the specified constraints is 13.57% to 21.86%. Refer to the efficient frontier section for additional details.

### Portfolio Allocations

#### Maximum Kelly Criterion

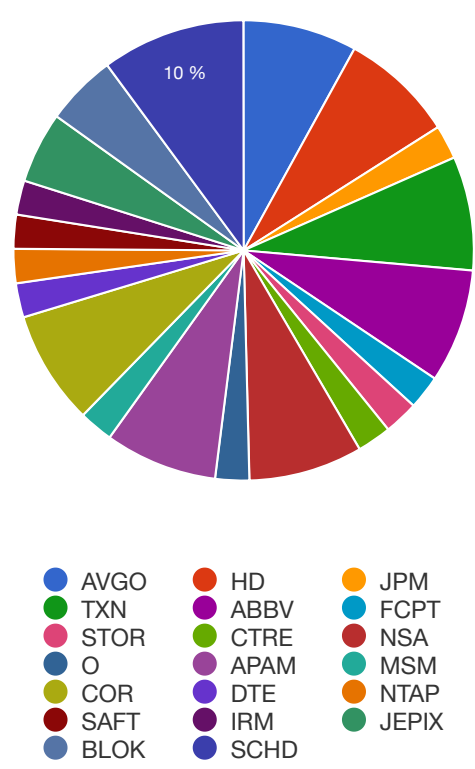
Ticker	Name	Allocation
AVGO	Broadcom Limited	8.00%
HD	Home Depot, Inc.	2.40%
JPM	J P Morgan Chase & Co	8.00%
TXN	Texas Instruments Incorporated	8.00%
ABBV	AbbVie Inc.	2.40%
FCPT	Four Corners Property Trust, Inc.	2.40%
STOR	STORE Capital Corporation	8.00%
CTRE	CareTrust REIT, Inc.	8.00%
NSA	National Storage Affiliates Trust	8.00%
O	Realty Income Corporation	2.40%
APAM	Artisan Partners Asset Management Inc.	8.00%
MSM	MSC Industrial Direct Company, Inc.	2.40%



Ticker	Name	Allocation
COR	CoreSite Realty Corporation	2.40%
DTE	DTE Energy Company	2.40%
NTAP	NetApp, Inc.	2.40%
SAFT	Safety Insurance Group, Inc.	2.40%
IRM	Iron Mountain Incorporated	2.40%
JEPIX	JPMorgan Equity Premium Income I	5.00%
BLOK	Amplify Transformational Data Shrg ETF	5.00%
SCHD	Schwab US Dividend Equity ETF	10.00%

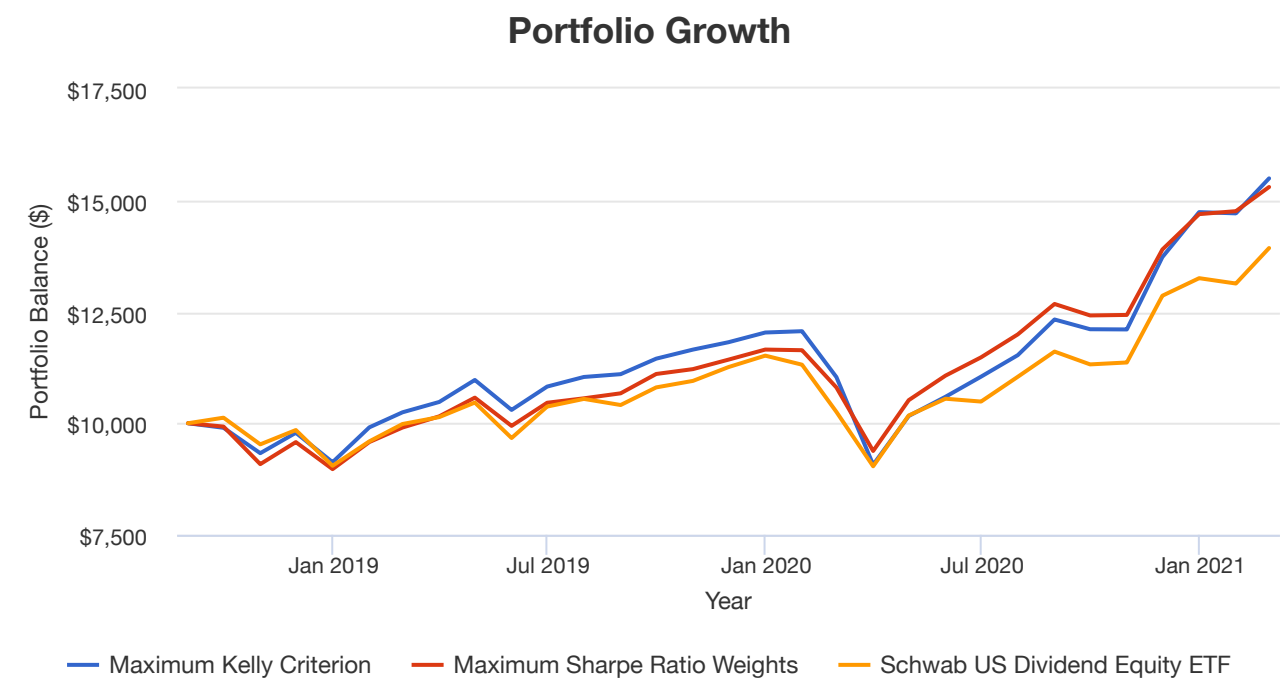
Maximum Sharpe Ratio Weights

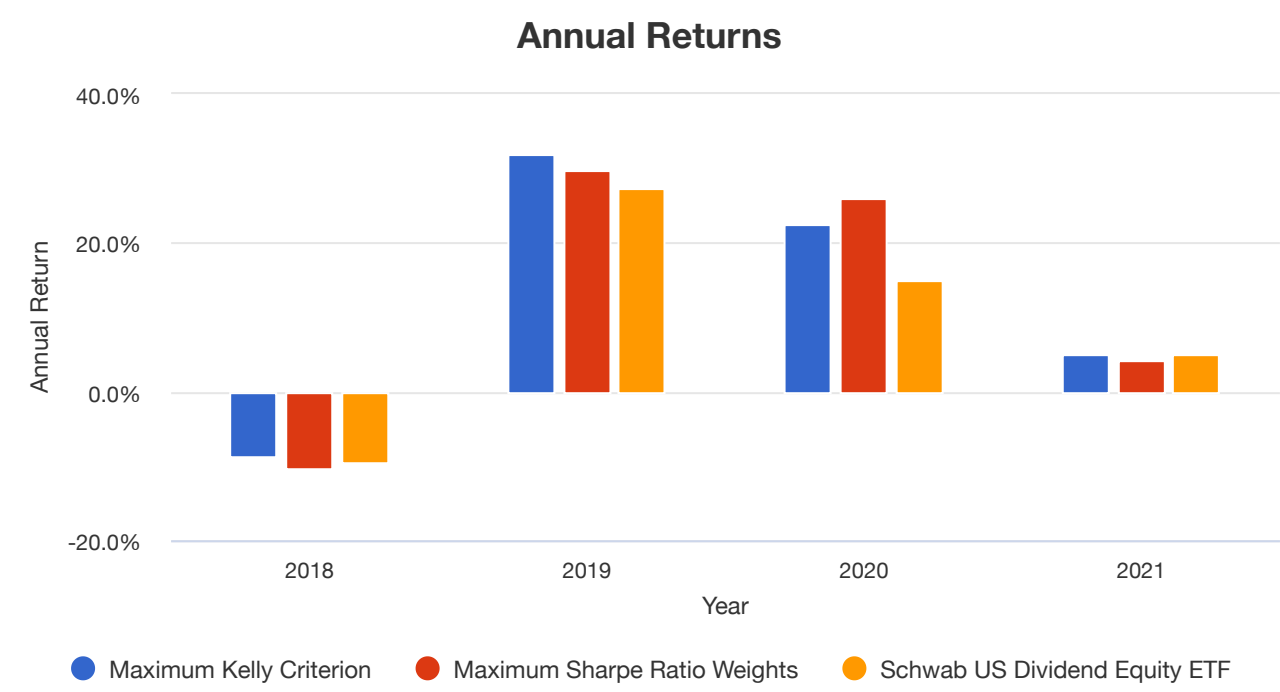
Ticker	Name	Allocation
AVGO	Broadcom Limited	8.00%
HD	Home Depot, Inc.	8.00%
JPM	J P Morgan Chase & Co	2.40%
TXN	Texas Instruments Incorporated	8.00%
ABBV	AbbVie Inc.	8.00%
FCPT	Four Corners Property Trust, Inc.	2.40%
STOR	STORE Capital Corporation	2.40%
CTRE	CareTrust REIT, Inc.	2.40%
NSA	National Storage Affiliates Trust	8.00%
O	Realty Income Corporation	2.40%
APAM	Artisan Partners Asset Management Inc.	7.91%
MSM	MSC Industrial Direct Company, Inc.	2.40%
COR	CoreSite Realty Corporation	8.00%
DTE	DTE Energy Company	2.40%
NTAP	NetApp, Inc.	2.40%
SAFT	Safety Insurance Group, Inc.	2.40%
IRM	Iron Mountain Incorporated	2.40%
JEPIX	JPMorgan Equity Premium Income I	5.00%
BLOK	Amplify Transformational Data Shrg ETF	5.00%
SCHD	Schwab US Dividend Equity ETF	10.09%



Portfolio Performance Summary

Metric	Maximum Kelly Criterion	Maximum Sharpe Ratio Weights	Schwab US Dividend Equity ETF
Start Balance	\$10,000	\$10,000	\$10,000
End Balance	\$15,488	\$15,295	\$13,927
CAGR	19.12%	18.53%	14.17%
Expected Return	21.86%	20.66%	16.36%
Stdev	21.54%	19.23%	19.95%
Best Year	31.84%	29.87%	27.28%
Worst Year	-8.73%	-10.29%	-9.53%
Max. Drawdown	-24.81%	-19.51%	-21.54%
Sharpe Ratio (ex-ante)	0.95	1.01	0.75
Sharpe Ratio (ex-post)	0.86	0.91	0.70
Sortino Ratio	1.29	1.41	1.08
Active Return	4.96%	4.36%	N/A
Tracking Error	6.93%	5.76%	N/A
Information Ratio	0.72	0.76	N/A
US Stock Market Correlation	0.96	0.97	0.97





Trailing Returns

Name	3 Month	YTD	1 year	Full
Maximum Kelly Criterion	12.85%	5.14%	40.36%	19.12%
Maximum Sharpe Ratio Weights	10.08%	4.14%	41.59%	18.53%
Schwab US Dividend Equity ETF	8.31%	5.10%	35.81%	14.17%

Trailing annualized returns are for full months ending in February 2021 excluding portfolio cashflows.

Notes on results:

- Past performance is no guarantee of future results, which may vary. All use is subject to terms of service.
- Investing involves risk, including possible loss of principal. The value of the investments and the income derived from them may fluctuate over time.
- All portfolio returns presented are hypothetical and backtested. Hypothetical returns do not reflect trading costs, transaction fees, or taxes.
- Portfolio optimization determines target weights for portfolio assets based on mathematical models that can use either historical or forecasted data as inputs. Optimization results are not guarantees of future performance.
- The results are based on information from a variety of sources we consider reliable, but we do not represent that the information is accurate or complete.
- The results do not constitute investment advice or recommendation, are provided solely for informational purposes, and are not an offer to buy or sell any securities.
- The results are based on the total return of assets and assume that all received dividends and distributions are reinvested.
- Allocation constraints are only applied to the optimized portfolio, not to compared allocations and benchmarks
- The annual results for 2018 are based on full calendar months from September to December
- The annual results for 2021 are based on full calendar months from January to February
- CAGR = Compound Annual Growth Rate
- Stdev = Annualized standard deviation of monthly returns
- Sharpe ratio is calculated and annualized from monthly excess returns over the risk free rate (3-month treasury bill)
- Drawdowns are calculated based on monthly returns.
- The backtested results assume monthly rebalancing of portfolio assets to match the specified allocation.
- The results from the evolutionary algorithm for non-convex optimization may vary slightly between optimization runs depending on convergence to the global optimum.

#	Asset	CAGR	Expected Return	Standard Deviation	Sharpe Ratio	Min. Weight	Max. Weight
1	Broadcom Limited (AVGO)	41.29%	47.39%	29.64%	1.554	2.40%	8.00%
2	Home Depot, Inc. (HD)	13.13%	16.43%	24.51%	0.616	2.40%	8.00%
3	J P Morgan Chase & Co (JPM)	14.16%	19.31%	30.09%	0.598	2.40%	8.00%
4	Texas Instruments Incorporated (TXN)	22.06%	26.02%	25.92%	0.952	2.40%	8.00%
5	AbbVie Inc. (ABBV)	10.34%	15.64%	31.83%	0.450	2.40%	8.00%
6	Four Corners Property Trust, Inc. (FCPT)	4.94%	10.86%	31.99%	0.298	2.40%	8.00%
7	STORE Capital Corporation (STOR)	11.31%	23.43%	43.28%	0.511	2.40%	8.00%
8	CareTrust REIT, Inc. (CTRE)	12.84%	19.05%	32.71%	0.542	2.40%	8.00%
9	National Storage Affiliates Trust (NSA)	17.85%	19.80%	18.57%	0.995	2.40%	8.00%
10	Realty Income Corporation (O)	5.53%	9.73%	26.67%	0.315	2.40%	8.00%
11	Artisan Partners Asset Management Inc. (APAM)	28.66%	40.76%	43.93%	0.897	2.40%	8.00%
12	MSC Industrial Direct Company, Inc. (MSM)	8.88%	14.21%	32.01%	0.403	2.40%	8.00%
13	CoreSite Realty Corporation (COR)	6.13%	9.33%	24.69%	0.324	2.40%	8.00%
14	DTE Energy Company (DTE)	5.82%	7.87%	19.53%	0.335	2.40%	8.00%
15	NetApp, Inc. (NTAP)	-9.30%	-3.36%	36.11%	-0.130	2.40%	8.00%
16	Safety Insurance Group, Inc. (SAFT)	-4.23%	-2.34%	19.98%	-0.183	2.40%	8.00%
17	Iron Mountain Incorporated (IRM)	6.46%	10.29%	26.85%	0.334	2.40%	8.00%
18	JPMorgan Equity Premium Income I (JEPIX)	7.00%	8.09%	14.39%	0.470	5.00%	10.00%
19	Amplify Transformational Data Shrg ETF (BLOK)	46.93%	55.10%	35.16%	1.530	1.00%	5.00%
20	Schwab US Dividend Equity ETF (SCHD)	14.17%	16.36%	19.95%	0.754	10.00%	15.00%

Results based on historical returns. Ex ante Sharpe Ratio calculated using 3-month treasury bill returns as the risk-free rate (1.33% annualized).

Asset Correlations

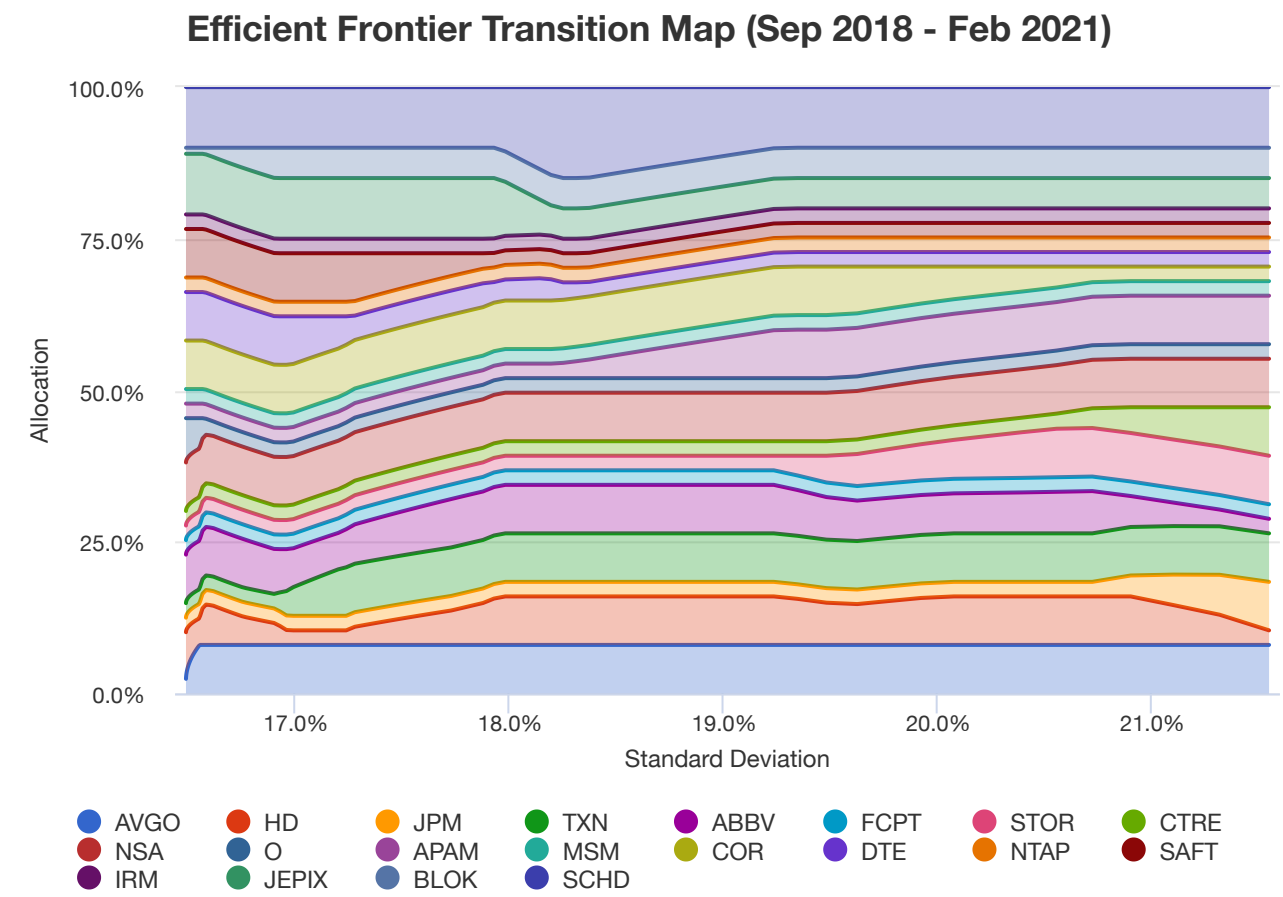
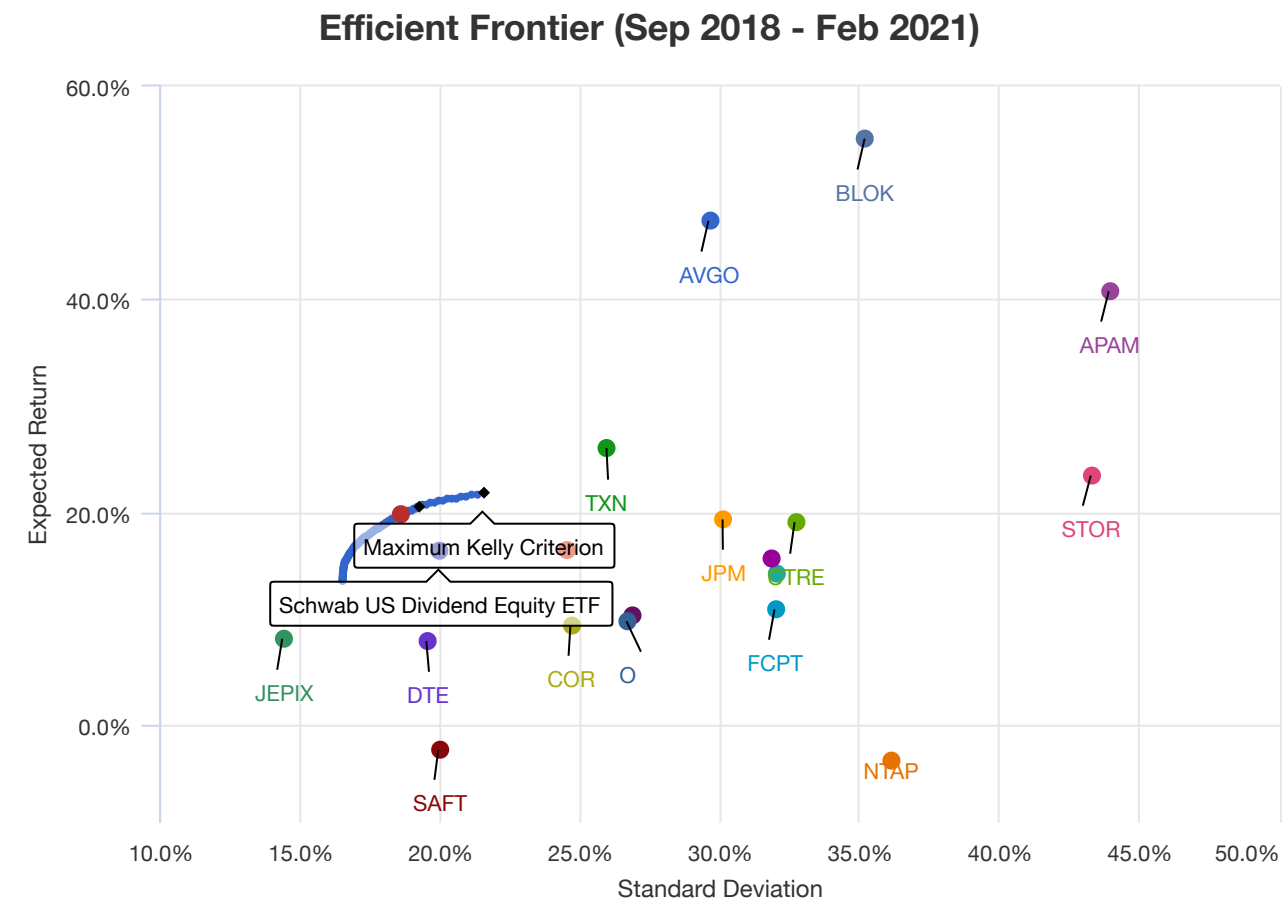
Name	Ticker	AVGO	HD	JPM	TXN	ABBV	FCPT	STOR	CTRE	NSA	O	APAM	MSM	COR	DTE	NTAP	SAFT	IRM	JEPIX	BLOK	SCHD
Broadcom Limited	AVGO	1.00	0.60	0.55	0.65	0.39	0.39	0.47	0.37	-0.05	0.36	0.61	0.59	-0.05	0.30	0.63	0.12	0.44	0.63	0.49	0.71
Home Depot, Inc.	HD	0.60	1.00	0.44	0.70	0.34	0.47	0.42	0.62	0.25	0.50	0.66	0.47	0.35	0.55	0.30	-0.01	0.57	0.77	0.44	0.70
J P Morgan Chase & Co	JPM	0.55	0.44	1.00	0.70	0.44	0.48	0.59	0.57	0.41	0.46	0.70	0.73	-0.02	0.55	0.69	0.37	0.46	0.78	0.75	0.87
Texas Instruments Incorporated	TXN	0.65	0.70	0.70	1.00	0.43	0.44	0.47	0.46	0.25	0.35	0.84	0.67	0.13	0.55	0.52	0.36	0.47	0.74	0.61	0.82
AbbVie Inc.	ABBV	0.39	0.34	0.44	0.43	1.00	0.33	0.31	0.31	0.02	0.25	0.36	0.63	0.06	0.14	0.35	0.13	0.40	0.41	0.36	0.49
Four Corners Property Trust, Inc.	FCPT	0.39	0.47	0.48	0.44	0.33	1.00	0.87	0.68	0.39	0.90	0.56	0.41	-0.02	0.61	0.26	0.01	0.49	0.66	0.45	0.57
STORE Capital Corporation	STOR	0.47	0.42	0.59	0.47	0.31	0.87	1.00	0.63	0.44	0.87	0.50	0.45	-0.08	0.54	0.34	0.07	0.51	0.65	0.50	0.60
CareTrust REIT, Inc.	CTRE	0.37	0.62	0.57	0.46	0.31	0.68	0.63	1.00	0.64	0.76	0.46	0.48	0.23	0.62	0.39	0.05	0.71	0.76	0.52	0.63
National Storage Affiliates Trust	NSA	-0.05	0.25	0.41	0.25	0.02	0.39	0.44	0.64	1.00	0.53	0.11	0.15	0.06	0.45	0.11	0.06	0.59	0.42	0.35	0.30
Realty Income Corporation	O	0.36	0.50	0.46	0.35	0.25	0.90	0.87	0.76	0.53	1.00	0.43	0.33	-0.07	0.63	0.19	-0.05	0.59	0.63	0.36	0.52
Artisan Partners Asset Management Inc.	APAM	0.61	0.66	0.70	0.84	0.36	0.56	0.50	0.46	0.11	0.43	1.00	0.58	0.12	0.62	0.60	0.38	0.36	0.79	0.65	0.85

Based on monthly returns from Sep 2018 to Feb 2021

Name	Ticker	AVGO	HD	JPM	TXN	ABBV	FCPT	STOR	CTRE	NSA	O	APAM	MSM	COR	DTE	NTAP	SAFT	IRM	JEPIX	BLOK	SCHD
MSC Industrial Direct Company, Inc.	MSM	0.59	0.47	0.73	0.67	0.63	0.41	0.45	0.48	0.15	0.33	0.58	1.00	0.12	0.50	0.58	0.28	0.42	0.68	0.59	0.79
CoreSite Realty Corporation	COR	-0.05	0.35	-0.02	0.13	0.06	-0.02	-0.08	0.23	0.06	-0.07	0.12	0.12	1.00	0.28	0.10	0.34	0.30	0.30	0.10	0.19
DTE Energy Company	DTE	0.30	0.55	0.55	0.55	0.14	0.61	0.54	0.62	0.45	0.63	0.62	0.50	0.28	1.00	0.25	0.23	0.46	0.79	0.38	0.69
NetApp, Inc.	NTAP	0.63	0.30	0.69	0.52	0.35	0.26	0.34	0.39	0.11	0.19	0.60	0.58	0.10	0.25	1.00	0.28	0.35	0.57	0.58	0.68
Safety Insurance Group, Inc.	SAFT	0.12	-0.01	0.37	0.36	0.13	0.01	0.07	0.05	0.06	-0.05	0.38	0.28	0.34	0.23	0.28	1.00	0.00	0.29	0.35	0.36
Iron Mountain Incorporated	IRM	0.44	0.57	0.46	0.47	0.40	0.49	0.51	0.71	0.59	0.59	0.36	0.42	0.30	0.46	0.35	0.00	1.00	0.64	0.57	0.56
JPMorgan Equity Premium Income I	JEPIX	0.63	0.77	0.78	0.74	0.41	0.66	0.65	0.76	0.42	0.63	0.79	0.68	0.30	0.79	0.57	0.29	0.64	1.00	0.68	0.93
Amplify Transformational Data Shrg ETF	BLOK	0.49	0.44	0.75	0.61	0.36	0.45	0.50	0.52	0.35	0.36	0.65	0.59	0.10	0.38	0.58	0.35	0.57	0.68	1.00	0.78
Schwab US Dividend Equity ETF	SCHD	0.71	0.70	0.87	0.82	0.49	0.57	0.60	0.63	0.30	0.52	0.85	0.79	0.19	0.69	0.68	0.36	0.56	0.93	0.78	1.00

Based on monthly returns from Sep 2018 to Feb 2021

**Note:** You can hover over any of the data points on the chart for more information.



#	AVGO	HD	JPM	TXN	ABBV	FCPT	STOR	CTRE	NSA	O	APAM	MSM	COR	DTE	NTAP	SAFT	IRM	JEPIX	BLOK	SCHD	Expected Return*	Standard Deviation*	Sharpe Ratio*
1	2.40%	7.69%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	7.31%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	13.57%	16.49%	0.743
2	2.66%	7.58%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	7.15%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	13.65%	16.49%	0.748
3	2.93%	7.42%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	7.05%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	13.73%	16.49%	0.752
4	3.20%	7.26%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	6.94%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	13.81%	16.49%	0.757
5	3.48%	7.10%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	6.83%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	13.89%	16.49%	0.762
6	3.75%	6.94%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	6.72%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	13.98%	16.49%	0.767
7	4.02%	6.77%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	6.61%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	14.06%	16.49%	0.772
8	4.29%	6.61%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	6.50%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	14.14%	16.49%	0.777
9	4.56%	6.45%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	6.39%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	14.22%	16.50%	0.782
10	4.84%	6.29%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	6.28%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	14.30%	16.50%	0.786
11	5.11%	6.13%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	6.17%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	14.38%	16.50%	0.791
12	5.38%	5.96%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	6.06%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	14.47%	16.51%	0.796
13	5.65%	5.80%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	5.95%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	14.55%	16.51%	0.801

\*Ex-ante values shown for portfolio return and volatility. Ex ante Sharpe Ratio calculated using historical 3-month treasury bill returns as the risk-free rate (1.33% annualized).



#	AVGO	HD	JPM	TXN	ABBV	FCPT	STOR	CTRE	NSA	O	APAM	MSM	COR	DTE	NTAP	SAFT	IRM	JEPIX	BLOK	SCHD	Expected Return*	Standard Deviation*	Sharpe Ratio*
14	5.92%	5.64%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	5.84%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	14.63%	16.51%	0.806
15	6.20%	5.48%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	5.73%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	14.71%	16.52%	0.810
16	6.47%	5.31%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	5.62%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	14.79%	16.52%	0.815
17	6.74%	5.15%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	5.51%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	14.87%	16.53%	0.820
18	7.01%	4.99%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	5.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	14.96%	16.53%	0.825
19	7.28%	4.83%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	5.29%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	15.04%	16.54%	0.829
20	7.56%	4.67%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	5.18%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	15.12%	16.54%	0.834
21	7.83%	4.50%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	5.07%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	15.20%	16.55%	0.839
22	8.00%	4.84%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	4.56%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	15.28%	16.55%	0.843
23	8.00%	6.05%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	3.35%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.00%	10.00%	15.37%	16.56%	0.848
24	8.00%	6.65%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	2.65%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.10%	10.00%	15.45%	16.58%	0.852
25	8.00%	6.58%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	2.51%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.32%	10.00%	15.53%	16.60%	0.856
26	8.00%	6.46%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.54%	10.00%	15.61%	16.61%	0.860
27	8.00%	6.21%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	1.79%	10.00%	15.70%	16.63%	0.864
28	8.00%	5.97%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	2.03%	10.00%	15.78%	16.65%	0.868
29	8.00%	5.72%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	2.28%	10.00%	15.86%	16.67%	0.872
30	8.00%	5.48%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	2.52%	10.00%	15.94%	16.69%	0.876
31	8.00%	5.23%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	2.77%	10.00%	16.03%	16.71%	0.880
32	8.00%	4.98%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	3.02%	10.00%	16.11%	16.73%	0.884
33	8.00%	4.74%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	3.26%	10.00%	16.19%	16.75%	0.888
34	8.00%	4.55%	2.40%	2.40%	7.94%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	3.50%	10.00%	16.27%	16.77%	0.892
35	8.00%	4.40%	2.40%	2.40%	7.85%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	3.75%	10.00%	16.36%	16.79%	0.895
36	8.00%	4.24%	2.40%	2.40%	7.77%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	3.99%	10.00%	16.44%	16.81%	0.899
37	8.00%	4.08%	2.40%	2.40%	7.68%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	4.24%	10.00%	16.52%	16.83%	0.903
38	8.00%	3.93%	2.40%	2.40%	7.59%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	4.48%	10.00%	16.61%	16.85%	0.907
39	8.00%	3.77%	2.40%	2.40%	7.51%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	4.72%	10.00%	16.69%	16.87%	0.910
40	8.00%	3.62%	2.40%	2.40%	7.42%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	4.97%	10.00%	16.77%	16.90%	0.914
41	8.00%	3.12%	2.40%	3.15%	7.13%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	5.00%	10.00%	16.86%	16.93%	0.918
42	8.00%	2.46%	2.40%	4.02%	6.92%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	8.00%	2.40%	8.00%	2.40%	10.00%	5.00%	10.00%	16.94%	16.96%	0.921
43	8.00%	2.40%	2.40%	4.74%	6.41%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	7.85%	2.40%	8.00%	2.40%	10.00%	5.00%	10.00%	17.02%	16.99%	0.924
44	8.00%	2.40%	2.40%	5.23%	6.34%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	7.43%	2.40%	8.00%	2.40%	10.00%	5.00%	10.00%	17.11%	17.02%	0.927
45	8.00%	2.40%	2.40%	5.71%	6.27%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	7.01%	2.40%	8.00%	2.40%	10.00%	5.00%	10.00%	17.19%	17.06%	0.930
46	8.00%	2.40%	2.40%	6.20%	6.21%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	6.59%	2.40%	8.00%	2.40%	10.00%	5.00%	10.00%	17.27%	17.09%	0.933
47	8.00%	2.40%	2.40%	6.69%	6.14%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	6.17%	2.40%	8.00%	2.40%	10.00%	5.00%	10.00%	17.36%	17.13%	0.936
48	8.00%	2.40%	2.40%	7.18%	6.08%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	5.75%	2.40%	8.00%	2.40%	10.00%	5.00%	10.00%	17.44%	17.16%	0.939
49	8.00%	2.40%	2.40%	7.67%	6.01%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	5.33%	2.40%	8.00%	2.40%	10.00%	5.00%	10.00%	17.52%	17.20%	0.942
50	8.00%	2.40%	2.40%	8.00%	6.29%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	4.71%	2.40%	8.00%	2.40%	10.00%	5.00%	10.00%	17.61%	17.23%	0.945
51	8.00%	2.99%	2.40%	8.00%	6.50%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	4.02%	2.40%	7.88%	2.40%	10.00%	5.00%	10.00%	17.69%	17.27%	0.947
52	8.00%	3.26%	2.40%	8.00%	6.65%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	4.02%	2.40%	7.47%	2.40%	10.00%	5.00%	10.00%	17.78%	17.32%	0.950
53	8.00%	3.53%	2.40%	8.00%	6.79%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	4.02%	2.40%	7.06%	2.40%	10.00%	5.00%	10.00%	17.86%	17.36%	0.952
54	8.00%	3.80%	2.40%	8.00%	6.94%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	4.01%	2.40%	6.65%	2.40%	10.00%	5.00%	10.00%	17.94%	17.40%	0.955
55	8.00%	4.07%	2.40%	8.00%	7.09%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	4.01%	2.40%	6.24%	2.40%	10.00%	5.00%	10.00%	18.03%	17.45%	0.957
56	8.00%	4.33%	2.40%	8.00%	7.24%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	4.00%	2.40%	5.82%	2.40%	10.00%	5.00%	10.00%	18.11%	17.49%	0.960
57	8.00%	4.60%	2.40%	8.00%	7.39%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	4.00%	2.40%	5.41%	2.40%	10.00%	5.00%	10.00%	18.19%	17.54%	0.962
58	8.00%	4.87%	2.40%	8.00%	7.54%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	3.99%	2.40%	5.00%	2.40%	10.00%	5.00%	10.00%	18.28%	17.58%	0.964
59	8.00%	5.14%	2.40%	8.00%	7.69%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	3.99%	2.40%	4.59%	2.40%	10.00%	5.00%	10.00%	18.36%	17.63%	0.966
60	8.00%	5.41%	2.40%	8.00%	7.84%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	3.98%	2.40%	4.17%	2.40%	10.00%	5.00%	10.00%	18.45%	17.68%	0.969
61	8.00%	5.67%	2.40%	8.00%	7.98%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	3.98%	2.40%	3.76%	2.40%	10.00%	5.00%	10.00%	18.53%	17.72%	0.971
62	8.00%	6.08%	2.40%	8.00%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	3.96%	2.40%	3.36%	2.40%	10.00%	5.00%	10.00%	18.62%	17.77%	0.973
63	8.00%	6.49%	2.40%	8.00%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	3.95%	2.40%	2.96%	2.40%	10.00%	5.00%	10.00%	18.70%	17.82%	0.975
64	8.00%	6.91%	2.40%	8.00%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	3.93%	2.40%	2.56%	2.40%	10.00%	5.00%	10.00%	18.78%	17.87%	0.977
65	8.00%	7.64%	2.40%	8.00%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	3.40%	2.40%	2.40%	2.40%	9.95%	5.00%	10.00%	18.87%	17.92%	0.979
66	8.00%	8.00%	2.40%	8.00%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	3.47%	2.40%	2.40%	2.40%	8.91%	5.00%	10.61%	18.95%	17.98%	0.981
67	8.00%	8.00%	2.40%	8.00%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	3.54%	2.40%	2.40%	2.40%	7.87%	5.00%	11.58%	19.04%	18.03%	0.982
68	8.00%	8.00%	2.40%	8.00%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	2.40%	2.40%	8.00%	3.61%	2.40%	2.40%							

#	AVGO	HD	JPM	TXN	ABBV	FCPT	STOR	CTRE	NSA	O	APAM	MSM	COR	DTE	NTAP	SAFT	IRM	JEPIX	BLOK	SCHD	Expected Return*	Standard Deviation*	Sharpe Ratio*
84	8.00%	8.00%	2.40%	8.00%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	7.16%	2.40%	8.00%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.84%	20.49%	19.09%	1.003
85	8.00%	8.00%	2.40%	8.00%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	7.53%	2.40%	8.00%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.47%	20.57%	19.16%	1.004
86	8.00%	8.00%	2.40%	8.00%	8.00%	2.40%	2.40%	2.40%	8.00%	2.40%	7.91%	2.40%	8.00%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.09%	20.66%	19.23%	1.005
87	8.00%	7.59%	2.40%	8.00%	7.55%	2.40%	3.26%	2.40%	8.00%	2.40%	8.00%	2.40%	8.00%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	20.74%	19.34%	1.004
88	8.00%	6.96%	2.40%	8.00%	7.02%	2.40%	4.41%	2.40%	8.00%	2.40%	8.00%	2.40%	8.00%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	20.83%	19.48%	1.001
89	8.00%	6.74%	2.40%	8.00%	6.67%	2.40%	5.28%	2.40%	8.00%	2.40%	8.00%	2.40%	7.71%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	20.91%	19.62%	0.998
90	8.00%	7.24%	2.40%	8.00%	6.63%	2.40%	5.63%	2.40%	8.00%	2.40%	8.00%	2.40%	6.91%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	21.00%	19.77%	0.995
91	8.00%	7.74%	2.40%	8.00%	6.58%	2.40%	5.97%	2.40%	8.00%	2.40%	8.00%	2.40%	6.10%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	21.09%	19.92%	0.992
92	8.00%	8.00%	2.40%	8.00%	6.60%	2.40%	6.42%	2.40%	8.00%	2.40%	8.00%	2.40%	5.38%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	21.17%	20.07%	0.989
93	8.00%	8.00%	2.40%	8.00%	6.68%	2.40%	6.97%	2.40%	8.00%	2.40%	8.00%	2.40%	4.75%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	21.26%	20.23%	0.985
94	8.00%	8.00%	2.40%	8.00%	6.75%	2.40%	7.53%	2.40%	8.00%	2.40%	8.00%	2.40%	4.12%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	21.34%	20.39%	0.982
95	8.00%	8.00%	2.40%	8.00%	6.86%	2.40%	8.00%	2.49%	8.00%	2.40%	8.00%	2.40%	3.45%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	21.43%	20.55%	0.978
96	8.00%	8.00%	2.40%	8.00%	6.97%	2.40%	8.00%	3.26%	8.00%	2.40%	8.00%	2.40%	2.57%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	21.52%	20.72%	0.975
97	8.00%	8.00%	3.45%	8.00%	5.11%	2.40%	8.00%	4.24%	8.00%	2.40%	8.00%	2.40%	2.40%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	21.60%	20.90%	0.970
98	8.00%	6.57%	5.03%	8.00%	3.88%	2.40%	8.00%	5.32%	8.00%	2.40%	8.00%	2.40%	2.40%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	21.69%	21.10%	0.965
99	8.00%	4.98%	6.58%	8.00%	2.76%	2.40%	8.00%	6.47%	8.00%	2.40%	8.00%	2.40%	2.40%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	21.78%	21.31%	0.960
100	8.00%	2.40%	8.00%	8.00%	2.40%	2.40%	8.00%	8.00%	8.00%	2.40%	8.00%	2.40%	2.40%	2.40%	2.40%	2.40%	2.40%	5.00%	5.00%	10.00%	21.86%	21.54%	0.953

\*Ex-ante values shown for portfolio return and volatility. Ex ante Sharpe Ratio calculated using historical 3-month treasury bill returns as the risk-free rate (1.33% annualized).

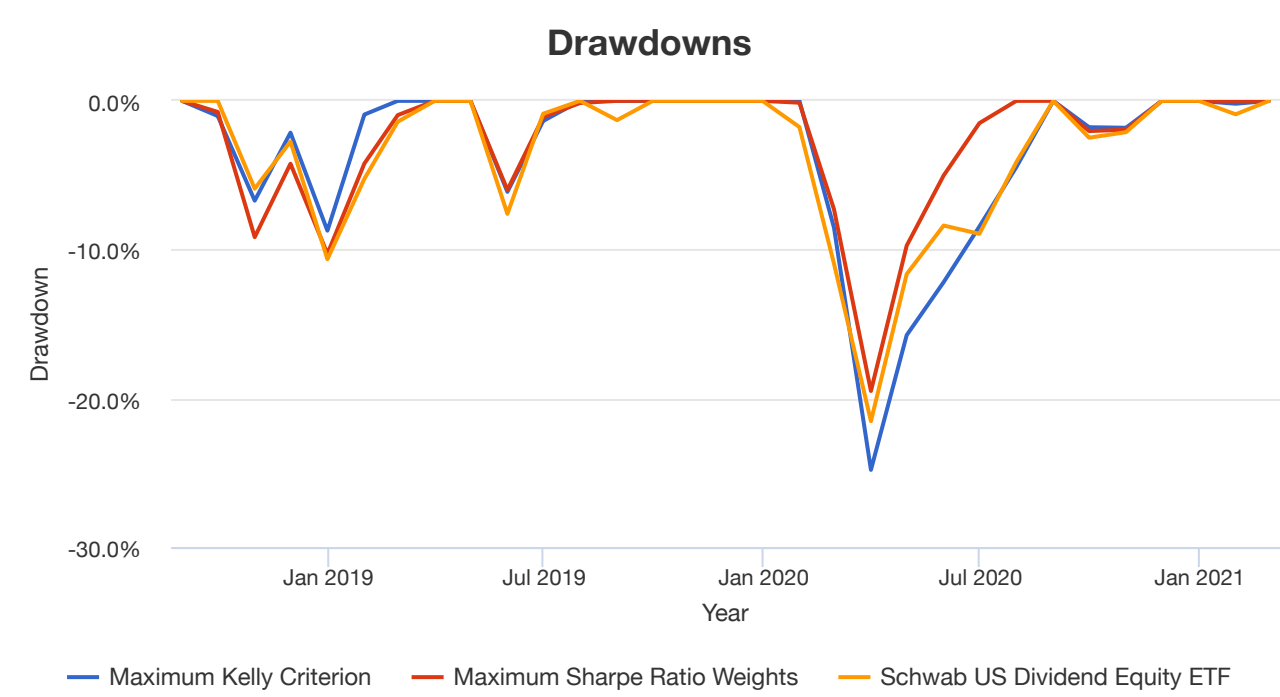
						Schwab US Dividend Equity ETF		MSC													
								Broadcom Limited (AVGO)	Home Depot, Inc. (HD)	J P Morgan Chase & Co (JPM)	Texas Instruments Incorporated (TXN)	AbbVie Inc. (ABBV)	Four Corners Property Trust, Inc. (FCPT)	STORE Capital Corporation (STOR)	CareTrust REIT, Inc. (CTRE)	National Storage Affiliates Trust (NSA)	Realty Income Corporation (O)	Artisan Partners Asset Management Inc. (APAM)	Industrial Direct Company, Inc. (MSM)	CoreSite Realty Corporation (COR)	Enbridge Energy (D)
Year	Inflation	Return	Balance	Return	Balance	Return	Balance														
2018	-0.36%	-8.73%	\$9,127	-10.29%	\$8,971	-9.53%	\$9,047	18.18%	-13.92%	-14.21%	-15.23%	-2.93%	-1.69%	0.60%	2.36%	-4.75%	9.20%	-31.78%	-9.36%	-23.44%	0.8
2019	2.29%	31.84%	\$12,033	29.87%	\$11,651	27.28%	\$11,515	29.11%	30.54%	47.27%	39.56%	1.50%	12.17%	36.70%	16.26%	32.41%	21.26%	66.53%	5.75%	34.03%	21.3
2020	1.36%	22.42%	\$14,732	26.05%	\$14,686	15.08%	\$13,251	44.91%	24.55%	-5.52%	31.74%	27.61%	12.43%	-3.42%	13.67%	11.73%	-11.55%	70.96%	25.31%	16.39%	-2.9
2021	0.43%	5.14%	\$15,488	4.14%	\$15,295	5.10%	\$13,927	7.31%	-2.74%	16.65%	5.61%	1.72%	-9.00%	-1.59%	-0.00%	6.99%	-2.31%	-3.33%	2.99%	-2.85%	-3.0

Annual return for 2018 is from 09/01/2018 to 12/31/2018 and annual return for 2021 is from 01/01/2021 to 02/28/2021

Year	Month	Maximum Kelly Criterion		Maximum Sharpe Ratio Weights		Schwab US Dividend Equity ETF		Broadcom Limited (AVGO)		Home Depot, Inc. (HD)		J P Morgan Chase & Co (JPM)		Texas Instruments Incorporated (TXN)		AbbVie Inc. (ABBV)		Four Corners Property Trust, Inc. (FCPT)		STORE Capital Corporation (STOR)		CareTrust REIT, Inc. (CTRE)		National Storage Affiliates Trust (NSA)		Realty Income Corporation (O)		Artisan Partners Asset Management Inc. (APAM)		MSC Industrial Direct Company, Inc. (MSM)		CoreSite Realty Corporation (COR)		DTE Energy Company (DTE)		NetApp, Inc. (NTAP)		Safety Insurance Group, Inc. (SAFT)	
		Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights	Return	Weights		
2018	9	-1.02%	-0.75%	1.25%	13.47%	3.18%	-1.52%		-4.55%	-1.46%	-3.60%		-2.38%	-2.87%	-9.34%		-2.49%	-2.26%	3.08%		-3.68%	-1.04%	-1.06%		-7.34%														
2018	10	-5.75%	-8.48%	-5.91%	-9.42%	-15.10%	-2.71%		-12.76%	-16.82%	1.52%		4.46%	-0.28%	4.68%		6.33%	-15.40%	-8.00%		-15.55%	3.00%	-8.18%		-7.05%														
2018	11	4.90%	5.43%	3.37%	6.23%	3.12%	1.99%		7.56%	21.09%	6.37%		3.20%	13.36%	5.03%		6.70%	1.62%	10.08%		3.84%	6.53%	-14.80%		6.41%														
2018	12	-6.73%	-6.33%	-8.13%	8.24%	-4.71%	-12.20%		-5.36%	-2.21%	-5.55%		-4.42%	-6.77%	-4.44%		-1.29%	-18.80%	-13.17%		-9.36%	-7.15%	-10.77%		-6.84%														
2019	1	8.55%	6.77%	6.05%	5.49%	6.82%	6.90%		7.34%	-11.81%	9.01%		14.16%	19.07%	9.98%		9.32%	5.47%	9.43%		13.25%	6.75%	7.61%		0.61%														
2019	2	3.41%	3.40%	4.06%	2.65%	0.88%	0.83%		5.07%	-1.31%	-3.01%		0.46%	1.64%	-2.68%		1.01%	20.14%	1.10%		3.50%	4.93%	2.24%		9.51%														
2019	3	2.26%	2.53%	1.55%	10.20%	4.42%	-3.00%		0.27%	1.70%	9.12%		4.19%	6.02%	1.74%		6.69%	-4.30%	-2.01%		5.74%	1.72%	6.35%		-2.46%														
2019	4	4.70%	4.13%	3.21%	5.88%	6.15%	15.51%		11.09%	-0.18%	-3.92%		-0.54%	3.37%	2.63%		-4.52%	12.59%	1.88%		2.23%	0.78%	5.65%		6.63%														
2019	5	-6.12%	-5.99%	-7.60%	-20.97%	-6.80%	-8.69%		-10.89%	-3.38%	1.13%		2.70%	0.25%	1.81%		0.42%	-14.74%	-15.53%		6.68%	-0.19%	-18.74%		-1.07%														
2019	6	5.08%	5.21%	7.29%	15.50%	10.30%	5.51%		10.02%	-5.20%	-3.96%		-2.05%	-1.25%	-1.81%		-1.26%	16.36%	5.09%		-0.27%	2.66%	4.22%		4.39%														
2019	7	1.99%	0.95%	1.66%	0.74%	2.75%	4.49%		9.58%	-6.99%	-1.43%		3.07%	-2.31%	4.66%		0.68%	7.52%	-3.30%		-9.00%	-0.60%	-4.47%		3.71%														
2019	8	0.57%	1.06%	-1.30%	-2.53%	6.65%	-5.29%		-1.01%	-1.32%	5.75%		10.38%	2.41%	10.47%		6.97%	-7.86%	-4.83%		10.85%	2.01%	-17.83%		-1.34%														
2019	9	3.13%	4.06%	3.79%	-1.41%	2.42%	7.13%		4.44%	15.18%	0.27%		0.00%	-0.25%	0.72%		4.20%	6.01%	7.26%		5.94%	3.30%	9.26%		5.07%														
2019	10	1.77%	0.98%	1.35%	6.08%	1.10%	6.99%		-8.01%	6.58%	1.31%		8.26%	3.13%	2.40%		6.96%	-3.15%	0.94%		-3.57%	-4.24%	7.41%		-4.08%														
2019	11	1.42%	1.90%	2.83%	7.98%	-6.00%	5.48%		1.88%	10.28%	-1.15%		0.52%	-13.86%	-1.96%		-6.03%	10.95%	1.27%		-3.50%	-1.87%	8.43%		1.39%														
2019	12	1.84%	1.97%	2.28%	0.96%	-0.34%	5.80%		6.72%	0.92%	-0.46%		-7.66%	-0.11%	1.38%		-3.62%	8.93%	6.89%		-0.03%	4.79%	2.74%		-5.24%														
2020	1	0.25%	-0.12%	-1.76%	-3.44%	4.45%	-4.43%		-5.27%	-7.27%	8.65%		5.40%	7.51%	1.58%		6.81%	3.34%	-6.25%		4.75%	2.11%	-13.56%		-0.49%														
2020	2	-8.52%	-7.17%	-9.35%	-10.66%	-4.50%	-12.28%		-5.40%	5.79%	-5.28%		-16.28%	-5.91%	-1.20%		-7.38%	-11.41%	-9.18%		-11.68%	-15.79%	-12.51%		-13.51%														
2020	3	-17.80%	-13.18%	-11.89%	-11.56%	-13.69%	-22.46%		-12.45%	-11.11%	-33.70%		-43.82%	-28.00%	-11.30%		-30.80%	-24.81%	-11.08%		12.92%	-14.06%	-10.77%		7.23%														
2020	4	12.05%	12.14%	12.61%	14.56%	17.74%	7.50%		16.15%	9.44%	19.67%		10.76%	11.43%	-3.78%		10.62%	36.99%	9.92%		4.56%	9.23%	6.26%		-0.37%														
2020	5	4.23%	5.22%	3.69%	7.23%	13.03%	1.62%		3.14%	12.74%	-3.44%		-3.64%	13.05%	5.37%		1.13%	0.62%	16.26%		3.00%	3.69%	1.76%		-8.30%														
2020	6	4.26%	3.71%	-0.61%	9.52%	1.42%	-3.34%		6.93%	5.95%	14.28%		24.91%	-6.55%	-3.45%		8.00%	12.19%	5.00%		-2.02%	0.90%	-0.38%		0.03%														
2020	7	4.37%	4.48%	5.29%	0.36%	5.98%	3.74%		1.16%	-2.18%	3.28%		-0.50%	5.01%	7.54%		1.32%	11.48%	-8.29%		6.60%	7.56%	0.98%		-0.77%														
2020	8	6.93%	5.69%	5.12%	9.60%	7.36%	3.67%		11.45%	0.91%	0.20%		14.14%	7.49%	11.32%		3.69%	8.74%	-0.17%		-5.11%	2.63%	6.98%		-3.13%														
2020	9	-1.77%	-2.03%	-2.48%	5.92%	-2.06%	-3.91%		0.45%	-8.54%	2.55%		2.78%	-6.83%	-3.74%		-1.69%	0.72%	-3.98%		-1.93%	-2.18%	-7.49%		-4.57%														
2020	10	-0.04%	0.09%	0.38%	-4.03%	-3.96%	2.76%		1.97%	-1.51%	-0.98%		-6.31%	-3.91%	3.61%		-4.37%	2.74%	10.08%		0.40%	7.28%	1.15%		1.32%														
2020	11	13.40%	11.80%	13.17%	14.86%	4.01%	20.24%		11.52%	22.89%	10.54%		26.69%	13.63%	0.27%		4.05%	14.45%	25.83%		5.05%	1.94%	21.46%		3.07%														
2020	12	7.34%	5.70%	3.06%	9.94%	-3.72%	7.80%		1.79%	2.46%	7.42%		5.47%	15.44%	7.12%		4.06%	11.87%	1.28%		0.91%	-2.64%	24.25%		9.33%														
2021	1	-0.19%	0.45%	-0.90%	2.89%	1.96%	1.98%		1.57%	-3.24%	-11.45%		-8.71%	1.26%	1.42%		-4.62%	-3.85%	-7.25%		7.31%	-2.22%	1.04%		-5.73%														
2021	2	5.34%	3.67%	6.06%	4.30%	-4.61%	14.38%		3.97%	5.13%	2.77%		7.80%	-1.25%	5.50%		2.43%	0.54%	11.04%		-9.47%	-0.84%	-5.78%		7.68%														

Metric	Maximum Kelly Criterion	Maximum Sharpe Ratio Weights	Schwab US Dividend Equity ETF
Volatility (annualized)	21.54%	19.23%	19.95%
Downside Deviation (monthly)	4.12%	3.55%	3.65%
Max. Drawdown	-24.81%	-19.51%	-21.54%
US Market Correlation	0.96	0.97	0.97
Beta <sup>(*)</sup>	1.02	0.92	1.00
Alpha (annualized)	4.33%	4.85%	0.00%
R <sup>2</sup>	89.71%	91.67%	100.00%
Sharpe Ratio	0.86	0.91	0.70
Sortino Ratio	1.29	1.41	1.08
Treynor Ratio (%)	18.20	19.07	13.93
Active Return	4.96%	4.36%	N/A
Tracking Error	6.93%	5.76%	N/A
Information Ratio	0.72	0.76	N/A
Skewness	-0.98	-0.68	-0.33
Excess Kurtosis	2.38	0.96	0.50
Historical Value-at-Risk (5%)	-7.72%	-7.89%	-8.80%
Analytical Value-at-Risk (5%)	-8.40%	-7.40%	-8.20%
Conditional Value-at-Risk (5%)	-13.16%	-10.83%	-10.62%
Upside Capture Ratio (%)	104.59	96.53	100.00
Downside Capture Ratio (%)	87.13	78.97	100.00
Safe Withdrawal Rate	37.88%	37.19%	36.15%
Perpetual Withdrawal Rate	12.50%	12.14%	9.35%
Positive Periods	21 out of 30 (70.00%)	22 out of 30 (73.33%)	20 out of 30 (66.67%)
Gain/Loss Ratio	0.87	0.75	0.88

<sup>\*</sup> Schwab US Dividend Equity ETF is used as the benchmark for calculations. Value-at-risk metrics are based on monthly values.



### Drawdowns for Maximum Kelly Criterion

	Rank	Start	End	Length	Recovery By	Recovery Time	Underwater Period	Drawdown
	1	Feb 2020	Mar 2020	2 months	Aug 2020	5 months	7 months	-24.81%
	2	Sep 2018	Dec 2018	4 months	Feb 2019	2 months	6 months	-8.73%
	3	May 2019	May 2019	1 month	Jul 2019	2 months	3 months	-6.12%
	4	Sep 2020	Oct 2020	2 months	Nov 2020	1 month	3 months	-1.81%
	5	Jan 2021	Jan 2021	1 month	Feb 2021	1 month	2 months	-0.19%

### Drawdowns for Maximum Sharpe Ratio Weights

	Rank	Start	End	Length	Recovery By	Recovery Time	Underwater Period	Drawdown
	1	Jan 2020	Mar 2020	3 months	Jul 2020	4 months	7 months	-19.51%
	2	Sep 2018	Dec 2018	4 months	Mar 2019	3 months	7 months	-10.29%
	3	May 2019	May 2019	1 month	Aug 2019	3 months	4 months	-5.99%
	4	Sep 2020	Sep 2020	1 month	Nov 2020	2 months	3 months	-2.03%

### Drawdowns for Schwab US Dividend Equity ETF

	Rank	Start	End	Length	Recovery By	Recovery Time	Underwater Period	Drawdown
	1	Jan 2020	Mar 2020	3 months	Aug 2020	5 months	8 months	-21.54%
	2	Oct 2018	Dec 2018	3 months	Mar 2019	3 months	6 months	-10.65%
	3	May 2019	May 2019	1 month	Jul 2019	2 months	3 months	-7.60%
	4	Sep 2020	Sep 2020	1 month	Nov 2020	2 months	3 months	-2.48%
	5	Aug 2019	Aug 2019	1 month	Sep 2019	1 month	2 months	-1.30%
	6	Jan 2021	Jan 2021	1 month	Feb 2021	1 month	2 months	-0.90%

### Portfolio Assets

Ticker	Name	CAGR	Stdev	Best Year	Worst Year	Max. Drawdown	Sharpe Ratio	Sortino Ratio	US Mkt Correlation
AVGO	Broadcom Limited	41.29%	29.64%	44.91%	7.31%	-23.70%	1.28	2.09	0.71
HD	Home Depot, Inc.	13.13%	24.51%	30.54%	-13.92%	-19.34%	0.57	0.90	0.76
JPM	J P Morgan Chase & Co	14.16%	30.09%	47.27%	-14.21%	-35.00%	0.55	0.83	0.83
TXN	Texas Instruments Incorporated	22.06%	25.92%	39.56%	-15.23%	-21.54%	0.85	1.39	0.82

ABBV	AbbVie Inc.	10.34%	31.83%	27.61%	-2.93%	-27.90%	0.42	0.74	0.46
FCPT	Four Corners Property Trust, Inc.	4.94%	31.99%	12.43%	-9.00%	-37.20%	0.28	0.38	0.62
STOR	STORE Capital Corporation	11.31%	43.28%	36.70%	-3.42%	-54.22%	0.46	0.64	0.64
CTRE	CareTrust REIT, Inc.	12.84%	32.71%	16.26%	-0.00%	-37.32%	0.50	0.74	0.69
NSA	National Storage Affiliates Trust	17.85%	18.57%	32.41%	-4.75%	-15.68%	0.91	1.54	0.35
O	Realty Income Corporation	5.53%	26.67%	21.26%	-11.55%	-38.00%	0.30	0.37	0.56
APAM	Artisan Partners Asset Management Inc.	28.66%	43.93%	70.96%	-31.78%	-33.38%	0.76	1.28	0.87
MSM	MSC Industrial Direct Company, Inc.	8.88%	32.01%	25.31%	-9.36%	-30.48%	0.38	0.63	0.73
COR	CoreSite Realty Corporation	6.13%	24.69%	34.03%	-23.44%	-23.44%	0.31	0.45	0.21
DTE	DTE Energy Company	5.82%	19.53%	21.36%	-3.04%	-27.63%	0.32	0.42	0.67
NTAP	NetApp, Inc.	-9.30%	36.11%	10.90%	-30.94%	-49.92%	-0.13	-0.18	0.69
SAFT	Safety Insurance Group, Inc.	-4.23%	19.98%	17.26%	-14.63%	-28.70%	-0.18	-0.25	0.28
IRM	Iron Mountain Incorporated	6.46%	26.85%	18.01%	-7.15%	-29.60%	0.32	0.46	0.62
JEPIX	JPMorgan Equity Premium Income I	7.00%	14.39%	21.08%	-6.98%	-18.33%	0.45	0.61	0.94
BLOK	Amplify Transformational Data Shrg ETF	46.93%	35.16%	90.15%	-26.62%	-26.62%	1.23	2.78	0.78
SCHD	Schwab US Dividend Equity ETF	14.17%	19.95%	27.28%	-9.53%	-21.54%	0.70	1.08	0.97

### Monthly Correlations

Ticker	Name	AVGO	HD	JPM	TXN	ABBV	FCPT	STOR	CTRE	NSA	O	APAM	MSM	COR	DTE	NTAP	SAFT	IRM	JEPIX	BLOK	SCHD	Maximum Kelly Criterion	Maximum Sharpe Ratio Weights	Schwab US Dividend Equity ETF
AVGO	Broadcom Limited	1.00	0.60	0.55	0.65	0.39	0.39	0.47	0.37	-0.05	0.36	0.61	0.59	-0.05	0.30	0.63	0.12	0.44	0.63	0.49	0.71	0.70	0.72	0.71
HD	Home Depot, Inc.	0.60	1.00	0.44	0.70	0.34	0.47	0.42	0.62	0.25	0.50	0.66	0.47	0.35	0.55	0.30	-0.01	0.57	0.77	0.44	0.70	0.71	0.78	0.70
JPM	J P Morgan Chase & Co	0.55	0.44	1.00	0.70	0.44	0.48	0.59	0.57	0.41	0.46	0.70	0.73	-0.02	0.55	0.69	0.37	0.46	0.78	0.75	0.87	0.86	0.81	0.87
TXN	Texas Instruments Incorporated	0.65	0.70	0.70	1.00	0.43	0.44	0.47	0.46	0.25	0.35	0.84	0.67	0.13	0.55	0.52	0.36	0.47	0.74	0.61	0.82	0.82	0.86	0.82
ABBV	AbbVie Inc.	0.39	0.34	0.44	0.43	1.00	0.33	0.31	0.31	0.02	0.25	0.36	0.63	0.06	0.14	0.35	0.13	0.40	0.41	0.36	0.49	0.49	0.56	0.49
FCPT	Four Corners Property Trust, Inc.	0.39	0.47	0.48	0.44	0.33	1.00	0.87	0.68	0.39	0.90	0.56	0.41	-0.02	0.61	0.26	0.01	0.49	0.66	0.45	0.57	0.73	0.67	0.57
STOR	STORE Capital Corporation	0.47	0.42	0.59	0.47	0.31	0.87	1.00	0.63	0.44	0.87	0.50	0.45	-0.08	0.54	0.34	0.07	0.51	0.65	0.50	0.60	0.76	0.67	0.60
CTRE	CareTrust REIT, Inc.	0.37	0.62	0.57	0.46	0.31	0.68	0.63	1.00	0.64	0.76	0.46	0.48	0.23	0.62	0.39	0.05	0.71	0.76	0.52	0.63	0.77	0.72	0.63
NSA	National Storage Affiliates Trust	-0.05	0.25	0.41	0.25	0.02	0.39	0.44	0.64	1.00	0.53	0.11	0.15	0.06	0.45	0.11	0.06	0.59	0.42	0.35	0.30	0.45	0.37	0.30
O	Realty Income Corporation	0.36	0.50	0.46	0.35	0.25	0.90	0.87	0.76	0.53	1.00	0.43	0.33	-0.07	0.63	0.19	-0.05	0.59	0.63	0.36	0.52	0.69	0.61	0.52
APAM	Artisan Partners Asset Management Inc.	0.61	0.66	0.70	0.84	0.36	0.56	0.50	0.46	0.11	0.43	1.00	0.58	0.12	0.62	0.60	0.38	0.36	0.79	0.65	0.85	0.83	0.86	0.85
MSM	MSC Industrial Direct Company, Inc.	0.59	0.47	0.73	0.67	0.63	0.41	0.45	0.48	0.15	0.33	0.58	1.00	0.12	0.50	0.58	0.28	0.42	0.68	0.59	0.79	0.74	0.76	0.79
COR	CoreSite Realty Corporation	-0.05	0.35	-0.02	0.13	0.06	-0.02	-0.08	0.23	0.06	-0.07	0.12	0.12	1.00	0.28	0.10	0.34	0.30	0.30	0.10	0.19	0.15	0.26	0.19
DTE	DTE Energy Company	0.30	0.55	0.55	0.55	0.14	0.61	0.54	0.62	0.45	0.63	0.62	0.50	0.28	1.00	0.25	0.23	0.46	0.79	0.38	0.69	0.70	0.68	0.69
NTAP	NetApp, Inc.	0.63	0.30	0.69	0.52	0.35	0.26	0.34	0.39	0.11	0.19	0.60	0.58	0.10	0.25	1.00	0.28	0.35	0.57	0.58	0.68	0.65	0.65	0.68
SAFT	Safety Insurance Group, Inc.	0.12	-0.01	0.37	0.36	0.13	0.01	0.07	0.05	0.06	-0.05	0.38	0.28	0.34	0.23	0.28	1.00	0.00	0.29	0.35	0.36	0.30	0.33	0.36
IRM	Iron Mountain Incorporated	0.44	0.57	0.46	0.47	0.40	0.49	0.51	0.71	0.59	0.59	0.36	0.42	0.30	0.46	0.35	0.00	1.00	0.64	0.57	0.56	0.68	0.68	0.56
JEPIX	JPMorgan Equity Premium Income I	0.63	0.77	0.78	0.74	0.41	0.66	0.65	0.76	0.42	0.63	0.79	0.68	0.30	0.79	0.57	0.29	0.64	1.00	0.68	0.93	0.93	0.94	0.93
BLOK	Amplify Transformational Data Shrg ETF	0.49	0.44	0.75	0.61	0.36	0.45	0.50	0.52	0.35	0.36	0.65	0.59	0.10	0.38	0.58	0.35	0.57	0.68	1.00	0.78	0.78	0.76	0.78
SCHD	Schwab US Dividend Equity ETF	0.71	0.70	0.87	0.82	0.49	0.57	0.60	0.63	0.30	0.52	0.85	0.79	0.19	0.69	0.68	0.36	0.56	0.93	0.78	1.00	0.95	0.96	1.00

### Portfolio Risk Decomposition

Ticker	Name	Maximum Kelly Criterion	Maximum Sharpe Ratio Weights
AVGO	Broadcom Limited	7.70%	8.82%
HD	Home Depot, Inc.	1.95%	7.91%
JPM	J P Morgan Chase & Co	9.58%	3.06%
TXN	Texas Instruments Incorporated	7.94%	9.25%
ABBV	AbbVie Inc.	1.74%	7.44%
FCPT	Four Corners Property Trust, Inc.	2.61%	2.66%
STOR	STORE Capital Corporation	12.29%	3.63%
CTRE	CareTrust REIT, Inc.	9.31%	2.95%
NSA	National Storage Affiliates Trust	3.08%	2.88%
O	Realty Income Corporation	2.06%	2.03%
APAM	Artisan Partners Asset Management Inc.	13.61%	15.45%
MSM	MSC Industrial Direct Company, Inc.	2.64%	3.05%
COR	CoreSite Realty Corporation	0.40%	2.64%
DTE	DTE Energy Company	1.52%	1.66%
NTAP	NetApp, Inc.	2.63%	2.94%
SAFT	Safety Insurance Group, Inc.	0.68%	0.83%
IRM	Iron Mountain Incorporated	2.02%	2.29%
JEPIX	JPMorgan Equity Premium Income I	3.12%	3.50%
BLOK	Amplify Transformational Data Shrg ETF	6.34%	6.99%
SCHD	Schwab US Dividend Equity ETF	8.77%	10.02%



