



Recommended Asset Allocation

Jacob Hoffman — 2020-12-11

FRONTIER CURVE OPTIMAL PORTFOLIO ANALYSIS

MONTE CARLO SIMULATION OF RETURNS

CORRELATION MATRIX

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1 Statistical Terminology & Asset Class Descriptions

Expected Return - Of an investing strategy is the amount of money you are expected to get back from your investment. For example, if 90 dollars is invested for 1 year with an expected return of 100 dollars, then in the average case the investment will yield back 100 dollars.

Risk - Or standard deviation of an investing strategy is a measure of how much the return of an investment strategy will vary from it's expected return. For example, an investment strategy with an expected return of 20% and a risk of 8% will yield 112% to 128% return with a probability of 68.2% , and 104% to 136% return with a probability of 94.4%

The 18 Asset Classes :

Asset Class	Index	Description
Cash	BIL	Currencies, Foreign Currencies.
Foreign Bonds	BNDX	Bonds issued in other countries.
Corporate Bonds	CBFSX	Bonds issued by a corporation.
International Gov Bonds	GVI	Govt. bonds that mature in 5-10 years.
High Yield Bonds	HYG	Lower credit rating higher return bonds.
Long Gov Bonds	ILTB	Govt. bonds mature in more than 10 years.
Real Estate	IYR	Land and buildings.
Emerging Mkt Debt	JEDAX	Bonds issued by emerging countries.
Large Cap Value	JKD	Undervalued stocks from big companies.
V.C.	LDVIX	New and innovative companies.
Mid Cap	MDY	Stocks from mid sized companies.
Municipal Bonds	MUB	Bonds Issued by local government.
Commodities	USCI	Basic goods used in commerce.
Emerging Mkt Stock	VEMAX	Stocks from emerging Mkt. countries.
Large Cap Growth	VIGRX	Fastly growing stocks from big companies.
Small Cap Value	VISVX	Undervalued stocks from small companies.
International Stock	VTIAX	Stocks not traded in U.S.A. exchanges.
Small Cap Growth	^RUT	Fastly growing stocks from small companies.

2 Investment Profile — Prescribed Allocation Changes

Investment Profile:

Name : Jacob Hoffman

Birthday : 12/28/1997

Time Frame : 7

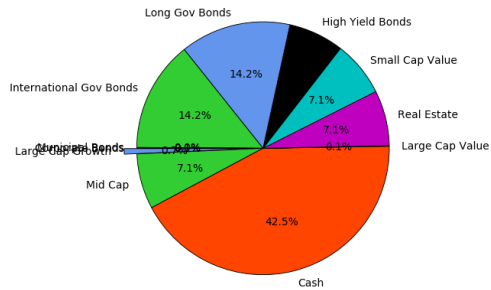
Available Funds : \$141,250

Preferred Risk : $\pm 5.93\%$ Yearly

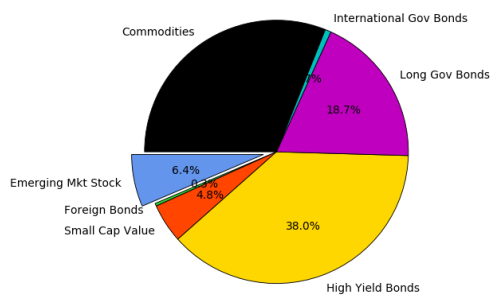
Preferred Asset Classes:

- Foreign Bonds
- International Gov Bonds
- High Yield Bonds
- Long Gov Bonds
- Commodities
- Emerging Mkt Stock
- Small Cap Value

(a) Current Portfolio



(b) New Portfolio



Prescribed Allocation Changes

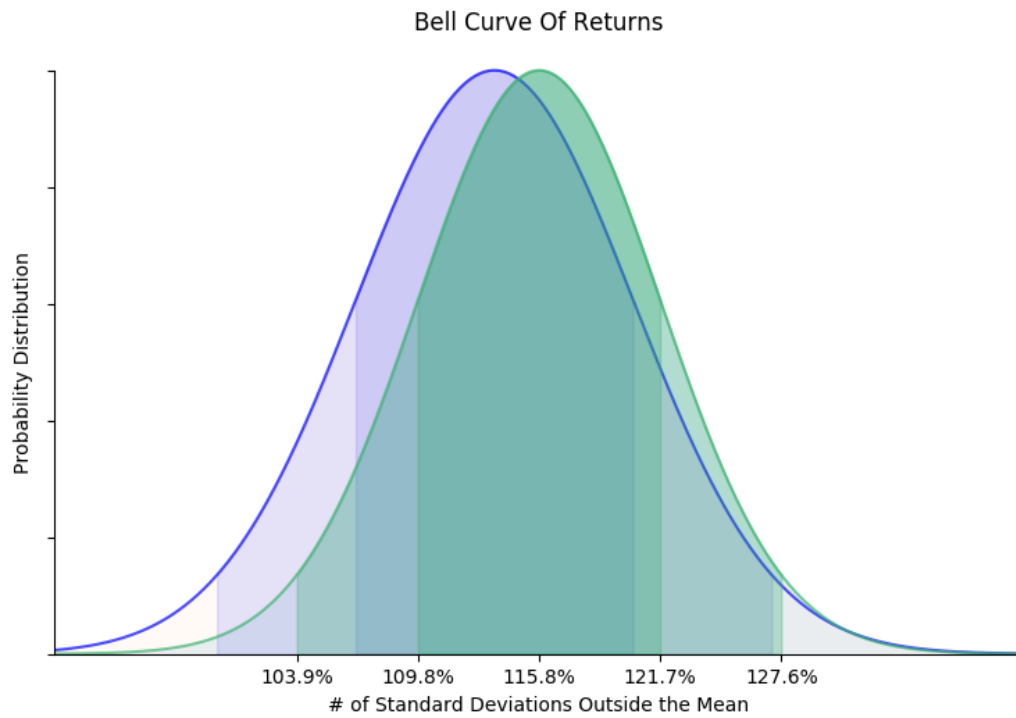
Asset Class	Current	Suggested	Change
Cash	\$20,000	\$0	(\$20,000)
Foreign Bonds	\$0	\$488	\$488
Corporate Bonds	\$10,000	\$0	(\$10,000)
International Gov Bonds	\$1,000	\$1,047	\$47
High Yield Bonds	\$50	\$53,661	\$53,611
Long Gov Bonds	\$10,000	\$26,393	\$16,393
Real Estate	\$60,000	\$0	(\$60,000)
Emerging Mkt Debt	\$0	\$0	\$0
Large Cap Value	\$10,000	\$0	(\$10,000)
Mid Cap	\$100	\$0	(\$100)
Municipal Bonds	\$10,000	\$0	(\$10,000)
Commodities	\$0	\$43,826	\$43,826
Emerging Mkt Stock	\$0	\$9,059	\$9,059
Large Cap Growth	\$20,000	\$0	(\$20,000)
Small Cap Value	\$100	\$6,772	\$6,672
International Stock	\$0	\$0	\$0
Small Cap Growth	\$0	\$0	\$0

3 Performance Improvements Of Prescribed Portfolio

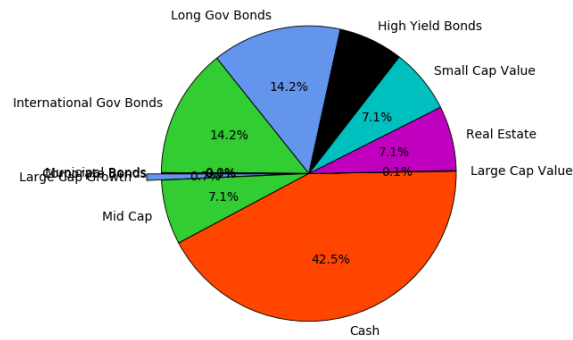
Below are 7 year simulation results of your current investing strategy versus the investment strategy prescribed in this report.

Change In Expected Return : 2.19%

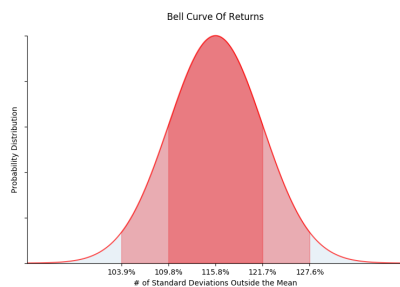
Change in Risk : (0.86%)



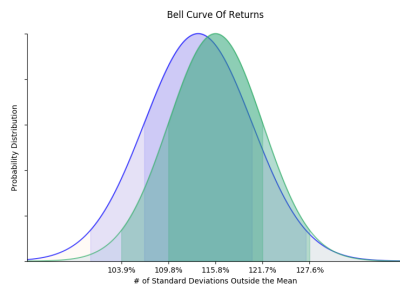
4 Current Portfolio Overview - Statistical Analysis



Portfolio Breakdown



Current Portfolio 1 Year Projections



Current Portfolio 7 Year Projections

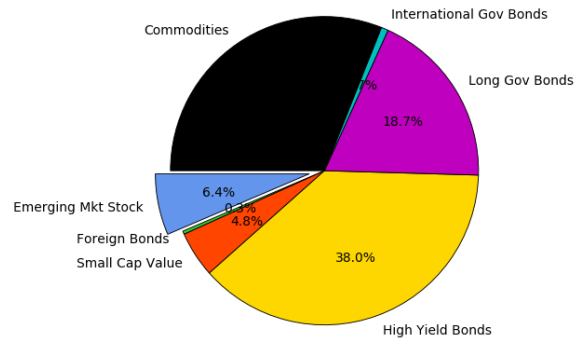
1 Year Expected Return (\$): \$159,842 13.16%

1 Year Risk (Std Deviation %) : $\pm 99.04\%$

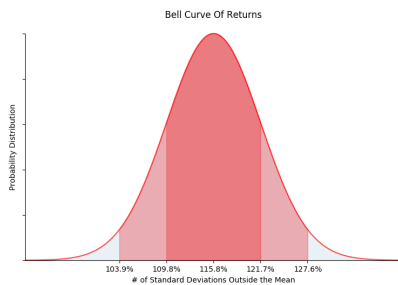
7 Year Expected Return (\$): \$344,921 144.19%

7 Year Risk (Std Deviation %): $\pm 566.94\%$

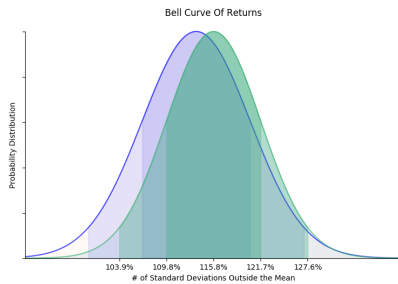
5 Prescribed Portfolio Overview - Statistical Analysis



Portfolio Breakdown



Prescribed Portfolio 1 Year Projections



Prescribed Portfolio 7 Year Projections

1 Year Expected Return (\$): \$163,226 15.56%

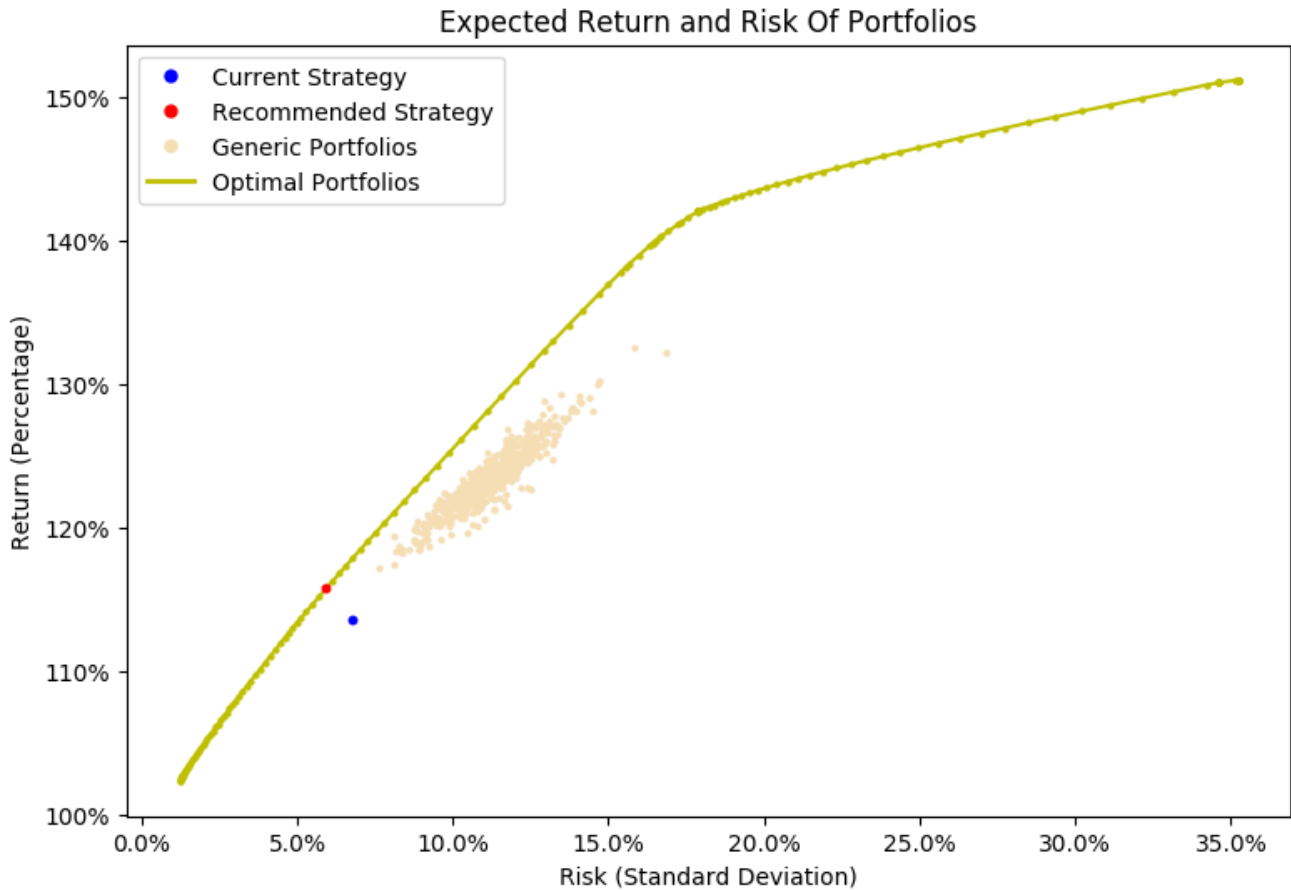
1 Year Risk (Std Deviation %): $\pm 82.24\%$

7 Year Expected Return (\$): \$393,364 178.49%

7 Year Risk (Std Deviation %): $\pm 535.53\%$

6 Frontier Curve

In 1990, Harry Markowitz won a nobel prize for his contributions to portfolio balancing theory. Markowitz discovered that given assets to buy from and funds to buy with, all of the optimal portfolios formed on a curved line called the "Frontier Curve."



Risk (Std. Deviation) : $\pm 5.93\%$

Expected Return (%): 15.78%

Adjustment of Risk (%): (0.86%)

Change in Return (%): 2.19%

7 Correlation Matrices

Corr.	BIL	BNDX	CBFSX	GVI	HYG	ILTB	IYR	JEDAX	JKD	MDY	MUB	USCI
BIL	1.0	0.97	0.93	0.91	0.84	0.89	0.77	0.68	0.86	0.61	0.94	-0.82
BNDX	0.97	1.0	0.98	0.95	0.86	0.95	0.8	0.77	0.87	0.62	0.98	-0.82
CBFSX	0.93	0.98	1.0	0.97	0.87	0.98	0.77	0.8	0.9	0.63	0.98	-0.82
GVI	0.91	0.95	0.97	1.0	0.75	0.99	0.65	0.67	0.8	0.45	0.97	-0.91
HYG	0.84	0.86	0.87	0.75	1.0	0.78	0.88	0.92	0.96	0.9	0.83	-0.55
ILTB	0.89	0.95	0.98	0.99	0.78	1.0	0.67	0.71	0.82	0.5	0.97	-0.87
IYR	0.77	0.8	0.77	0.65	0.88	0.67	1.0	0.87	0.8	0.78	0.79	-0.43
JEDAX	0.68	0.77	0.8	0.67	0.92	0.71	0.87	1.0	0.87	0.84	0.78	-0.4
JKD	0.86	0.87	0.9	0.8	0.96	0.82	0.8	0.87	1.0	0.88	0.86	-0.61
MDY	0.61	0.62	0.63	0.45	0.9	0.5	0.78	0.84	0.88	1.0	0.58	-0.21
MUB	0.94	0.98	0.98	0.97	0.83	0.97	0.79	0.78	0.86	0.58	1.0	-0.81
USCI	-0.82	-0.82	-0.82	-0.91	-0.55	-0.87	-0.43	-0.4	-0.61	-0.21	-0.81	1.0
VEMAX	0.54	0.57	0.63	0.47	0.84	0.53	0.64	0.85	0.84	0.9	0.57	-0.22
VIGRX	0.9	0.92	0.94	0.89	0.9	0.9	0.72	0.79	0.97	0.77	0.91	-0.72
VISVX	0.3	0.29	0.3	0.09	0.7	0.14	0.65	0.68	0.63	0.92	0.25	0.15
VTIAX	0.53	0.55	0.6	0.42	0.84	0.48	0.68	0.84	0.84	0.94	0.54	-0.17
^RUT	0.47	0.46	0.48	0.29	0.81	0.34	0.67	0.75	0.79	0.98	0.43	-0.05

Above is the Semantic Correlation Matrix of the selected Asset Classes. It shows how each asset class is correlated to one another

BIL	GVI	MUB	BNDX	JEDAX	CBFSX	HYG	USCI	IYR	VTIAX	ILTB	VISVX	^RUT
2%	5%	5%	7%	7%	10%	10%	12%	13%	14%	15%	16%	17%

Above is the ranking of the selected asset classes by risk

USCI	BIL	GVI	MUB	BNDX	CBFSX	JEDAX	ILTB	IYR	HYG	VTIAX	VISVX	\^{}RU
(3%)	2%	6%	6%	11%	14%	15%	21%	21%	22%	28%	36%	36%

Above is the ranking of the selected asset classes by return