CARDIFF, PROVINS, & ANGEL
WEALTH MANAGEMENT, LLC

Recommended Asset Allocation

Jacob Hoffman — 2020-12-18

FRONTIER CURVE OPTIMAL PORTFOLIO ANALYSIS

MONTE CARLO SIMULATION OF RETURNS

CORRELATION MATRIX

Prepared by Thomas K. Provins

THOMAS.PROVINS@LPL.COM

1910 Cochran Road

Manor Oak 2 Suite 450

412.440.6949

Contents

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

2   Investment Profile

General Information

Name : Jacob Hoffman

Birthday : 12/28/1997

Time Frame : 7

Available Funds : $1,400

Preferred Risk : ± 3.35% Yearly

Preferred Asset Classes:

Asset Class	Index	Description
International Gov Bonds	GVI	Govt. bonds that mature in 5-10 years.
High Yield Bonds	HYG	Lower credit rating higher return bonds.
Real Estate	IYR	Land and buildings.
Mid Cap	MDY	Stocks from mid sized companies.
Municipal Bonds	MUB	Bonds Issued by local government.
Emerging Mkt Stock	VEMAX	Stocks from emerging Mkt. countries.
Large Cap Growth	VIGRX	Fastly growing stocks from big companies.
Long Gov Bonds	VUSTX	Govt. bonds mature in more than 10 years.

3 Prescribed Allocation Changes
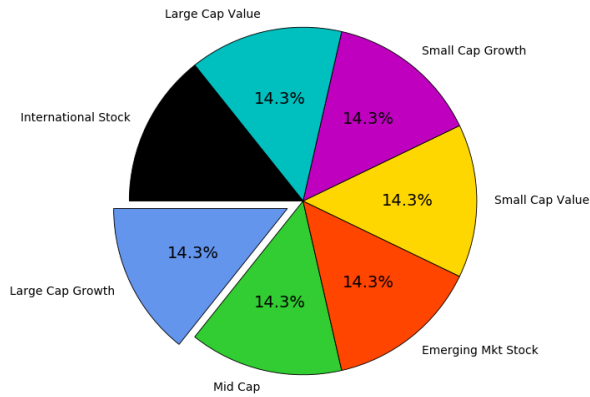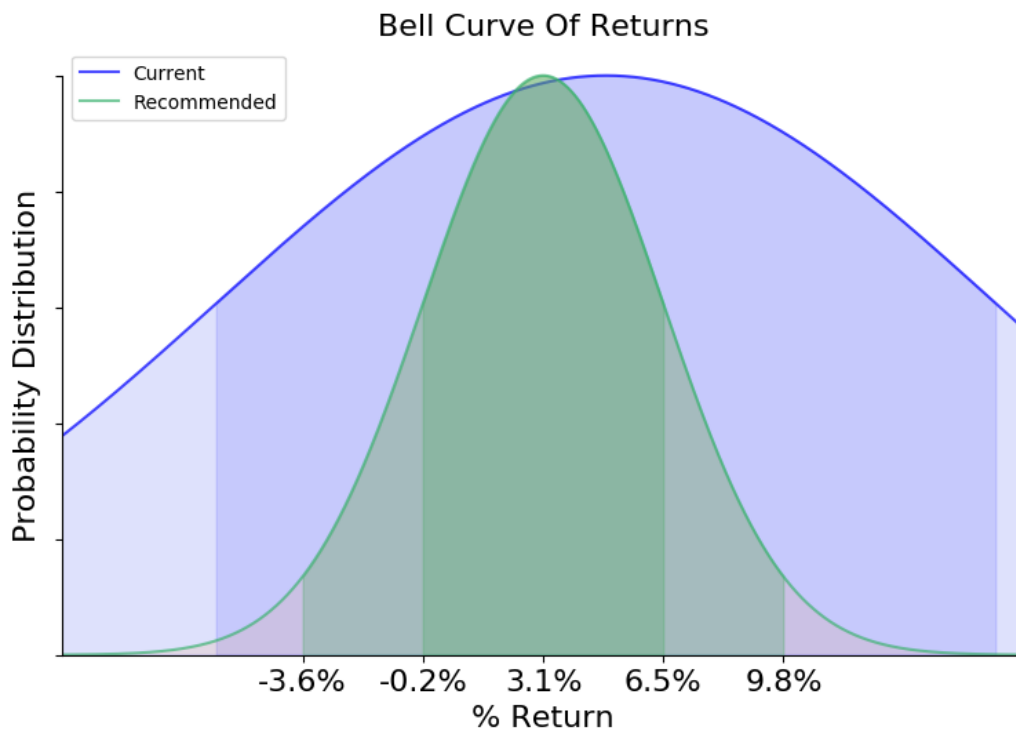

(a) Current Portfolio
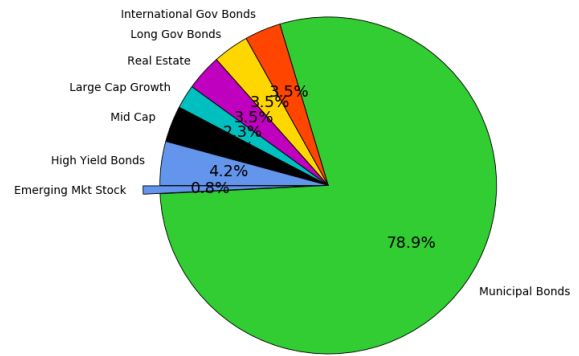
(b) New Portfolio

Asset Class	Current	Suggested	Change
Cash	$0	$0	$0
Commodities	$0	$0	$0
International Gov Bonds	$0	$48	$48
High Yield Bonds	$0	$59	$59
Real Estate	$0	$48	$48
Large Cap Value	$200	$0	($200)
Corporate Bonds	$0	$0	$0
Mid Cap	$200	$48	($152)
Municipal Bonds	$0	$1,103	$1,103
Foreign Bonds	$0	$0	$0
Emerging Mkt Stock	$200	$11	($189)
International Stock	$200	$0	($200)
Large Cap Growth	$200	$32	($168)
Small Cap Value	$200	$0	($200)
Long Gov Bonds	$0	$48	$48
Small Cap Growth	$200	$0	($200)

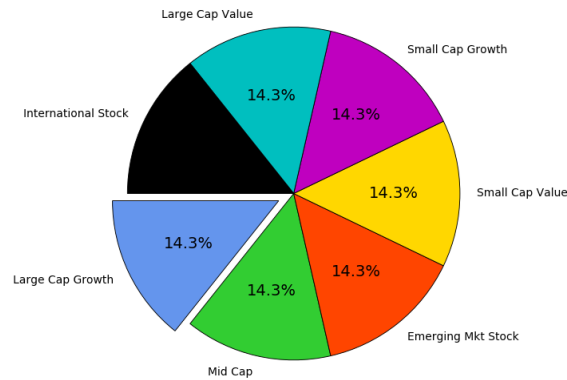# 4   Performance Improvements Of Prescribed Portfolio

Below are 7 year simulation results of your current investing strategy versus the investment strategy prescribed in this report.
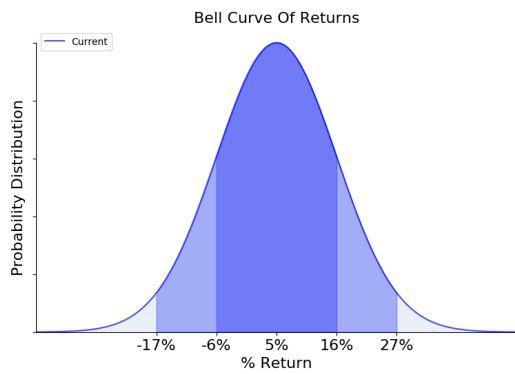
Change In Expected Return : (1.75%)

Change in Risk : (7.51%)

Bell Curve Of Returns

Expected Returns For 7 Years
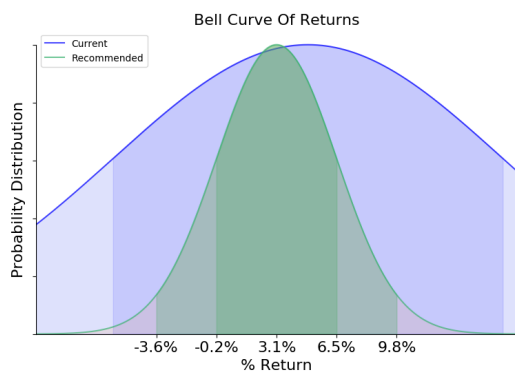
5 Current Portfolio Overview - Statistical Analysis

Portfolio Breakdown

(a) Current Portfolio 1 Year Projections

(b) Current Portfolio 7 Year Projections

1 Year Expected Return ($): $71   *5.08%*

1 Year Risk (Std Deviation %) : ± 10.86%

7 Year Expected Return ($): $560   *40.07%*

7 Year Risk (Std Deviation %): ± 5.56%

6 Prescribed Portfolio Overview - Statistical Analysis

Portfolio Breakdown

(a) Prescribed Portfolio 1 Year Projections
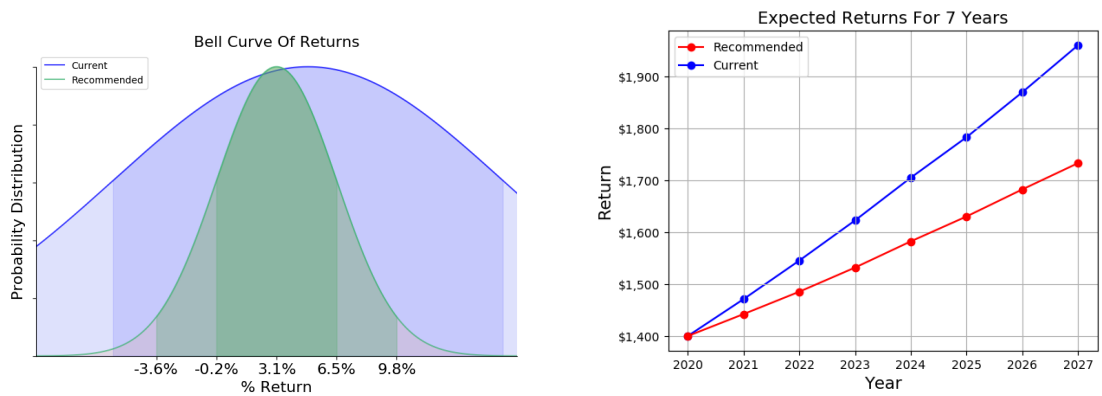
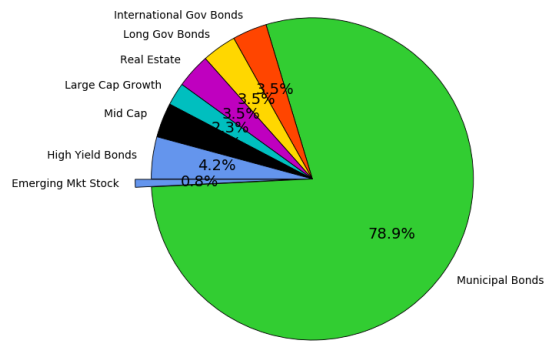(b) Prescribed Portfolio 7 Year Projections

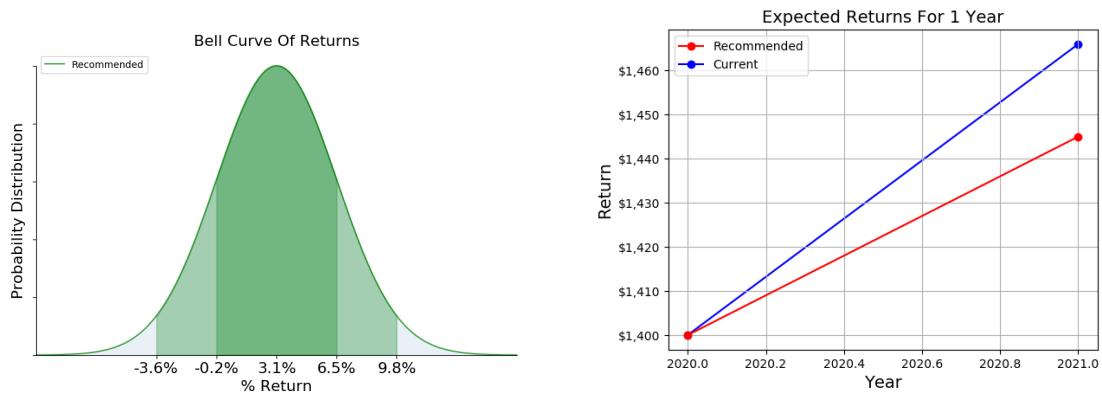1 Year Expected Return (\$): \$42   *3.02%*

1 Year Risk (Std Deviation %): ± 3.35%

7 Year Expected Return (\$): \$333   *23.82%*

7 Year Risk (Std Deviation %): ± 1.44%

7 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."
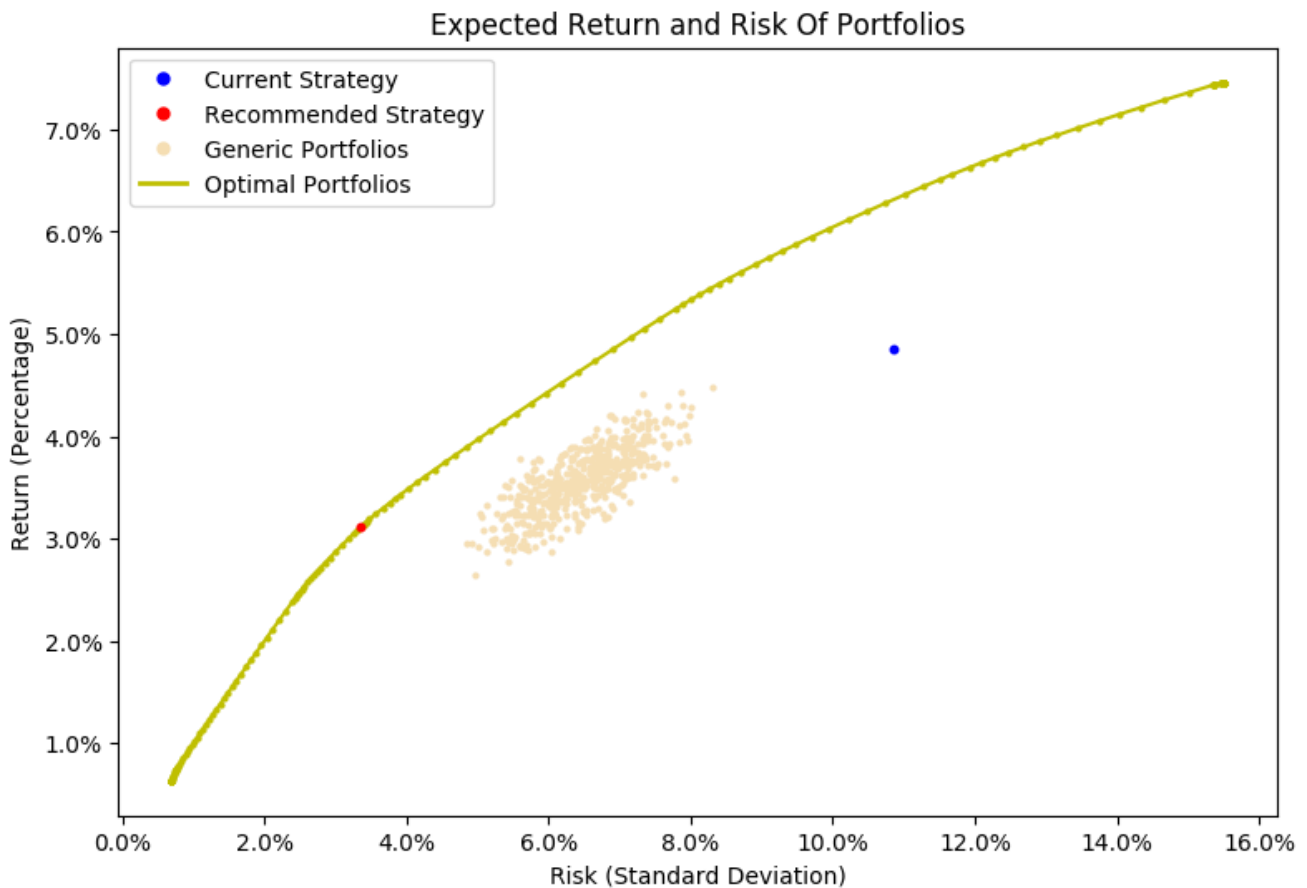
Risk (Std. Deviation): ± 3.35%

Expected Return (%): 3.11%

Adjustment of Risk (%): (7.51%)

Change in Return (%): (1.75%)

8 Correlation Matrix

Corr.	BIL	GSG	GVI	HYG	IYR	JKD	LQD	MDY	MUB	PIGLX	VEMAX	VGTSX	VIGRX	VISVX	VUSTX	^RUT
BIL	1.0	-0.54	0.71	0.64	0.64	0.74	0.73	0.64	0.69	0.55	0.51	0.55	0.82	0.56	0.76	0.59
GSG	-0.54	1.0	-0.8	-0.71	-0.68	-0.72	-0.77	-0.72	-0.81	-0.68	-0.31	-0.47	-0.7	-0.71	-0.78	-0.68
GVI	0.71	-0.8	1.0	0.96	0.91	0.91	0.99	0.9	0.98	0.94	0.68	0.77	0.91	0.86	0.97	0.87
HYG	0.64	-0.71	0.96	1.0	0.97	0.95	0.97	0.97	0.97	0.96	0.79	0.9	0.91	0.95	0.89	0.96
IYR	0.64	-0.68	0.91	0.97	1.0	0.96	0.94	0.97	0.95	0.89	0.76	0.9	0.92	0.96	0.88	0.96
JKD	0.74	-0.72	0.91	0.95	0.96	1.0	0.95	0.98	0.94	0.84	0.74	0.9	0.99	0.95	0.9	0.96
LQD	0.73	-0.77	0.99	0.97	0.94	0.95	1.0	0.93	0.99	0.94	0.72	0.83	0.94	0.9	0.97	0.9
MDY	0.64	-0.72	0.9	0.97	0.97	0.98	0.93	1.0	0.94	0.88	0.76	0.93	0.94	0.99	0.85	0.99
MUB	0.69	-0.81	0.98	0.97	0.95	0.94	0.99	0.94	1.0	0.93	0.68	0.81	0.92	0.91	0.96	0.91
PIGLX	0.55	-0.68	0.94	0.96	0.89	0.84	0.94	0.88	0.93	1.0	0.78	0.81	0.82	0.86	0.86	0.87
VEMAX	0.51	-0.31	0.68	0.79	0.76	0.74	0.72	0.76	0.68	0.78	1.0	0.91	0.73	0.74	0.59	0.78
VGTSX	0.55	-0.47	0.77	0.9	0.9	0.9	0.83	0.93	0.81	0.81	0.91	1.0	0.87	0.92	0.71	0.94
VIGRX	0.82	-0.7	0.91	0.91	0.92	0.99	0.94	0.94	0.92	0.82	0.73	0.87	1.0	0.9	0.92	0.92
VISVX	0.56	-0.71	0.86	0.95	0.96	0.95	0.9	0.99	0.91	0.86	0.74	0.92	0.9	1.0	0.81	0.99
VUSTX	0.76	-0.78	0.97	0.89	0.88	0.9	0.97	0.85	0.96	0.86	0.59	0.71	0.92	0.81	1.0	0.81
^RUT	0.59	-0.68	0.87	0.96	0.96	0.96	0.9	0.99	0.91	0.87	0.78	0.94	0.92	0.99	0.81	1.0

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

9 Risk & Return Rankings

BIL	GVI	MUB	LQD	PIGLX	HYG	GSG	VGTSX	VUSTX	VEMAX	IYR	^RUT	JKD	MDY	VISVX	VIGRX
0%	2%	3%	5%	5%	6%	8%	8%	9%	10%	11%	11%	12%	13%	13%	17%

Above is the ranking of the selected asset classes by risk

GSG	VEMAX	VGTSX	BIL	GVI	MUB	HYG	IYR	PIGLX	^RUT	LQD	VUSTX	JKD	VISVX	MDY	VIGRX
(49%)	(5%)	(4%)	2%	28%	31%	42%	42%	42%	42%	48%	59%	64%	67%	70%	75%

Above is the ranking of the selected asset classes by return

Intentionally Left Blank