



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

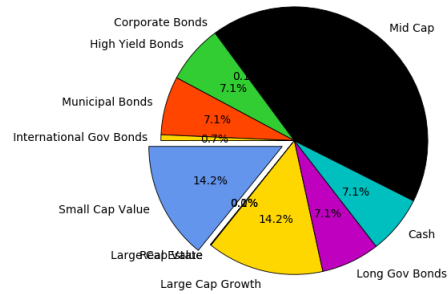
Available Funds : \$141,250

Preferred Risk : $\pm 12.34\%$ Yearly

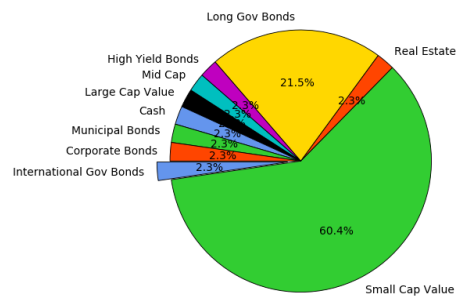
Preferred Asset Classes:

- Cash
- Corporate Bonds
- International Gov Bonds
- High Yield Bonds
- Long Gov Bonds
- Real Estate
- Large Cap Value
- Mid Cap
- Municipal Bonds
- Small Cap Value

(a) Current Portfolio



(b) New Portfolio



Prescribed Allocation Changes

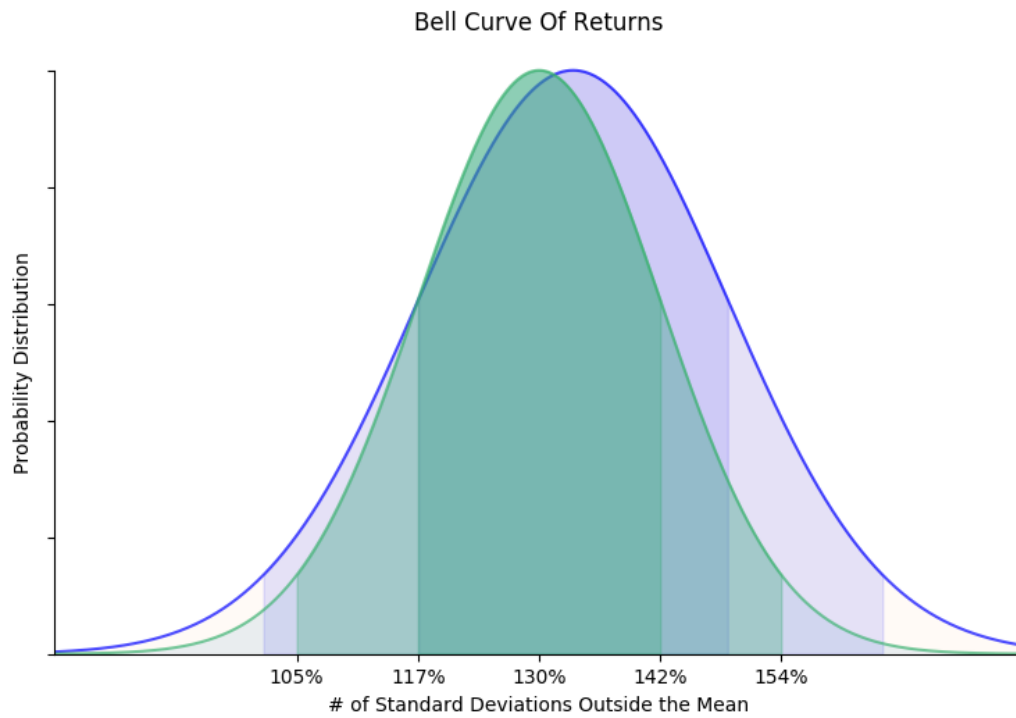
| Asset Class | Current | Suggested | Change |
|-------------------------|----------|-----------|------------|
| Cash | \$20,000 | \$3,210 | (\$16,790) |
| Corporate Bonds | \$10,000 | \$3,210 | (\$6,790) |
| International Gov Bonds | \$1,000 | \$3,210 | \$2,210 |
| High Yield Bonds | \$50 | \$3,210 | \$3,160 |
| Long Gov Bonds | \$10,000 | \$30,303 | \$20,303 |
| Real Estate | \$60,000 | \$3,210 | (\$56,790) |
| Large Cap Value | \$10,000 | \$3,210 | (\$6,790) |
| Mid Cap | \$100 | \$3,211 | \$3,111 |
| Municipal Bonds | \$10,000 | \$3,210 | (\$6,790) |
| Large Cap Growth | \$20,000 | \$0 | (\$20,000) |
| Small Cap Value | \$100 | \$85,263 | \$85,163 |

3 Performance Improvements Of Prescribed Portfolio

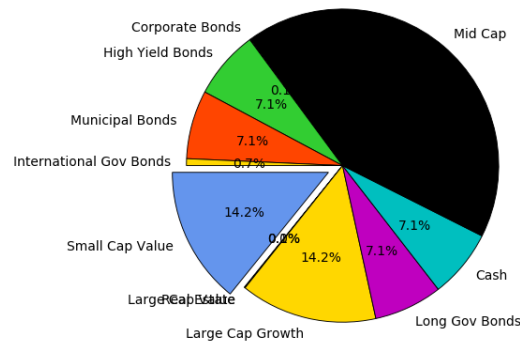
Below are 7 year simulation results of your current investing strategy versus the investment strategy prescribed in this report.

Change In Expected Return : (3.46%)

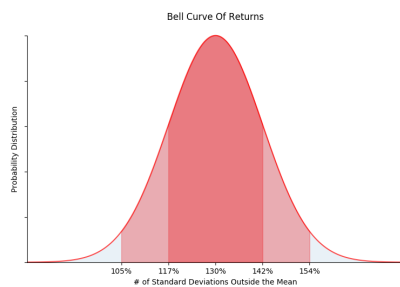
Change in Risk : (3.43%)



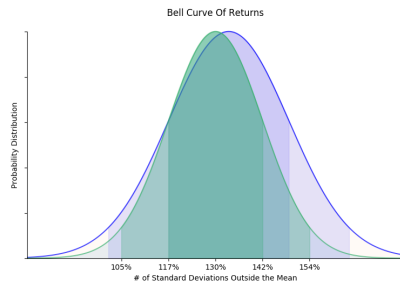
4 Current Portfolio Overview - Statistical Analysis



Portfolio Breakdown



Current Portfolio 1 Year Projections



Current Portfolio 7 Year Projections

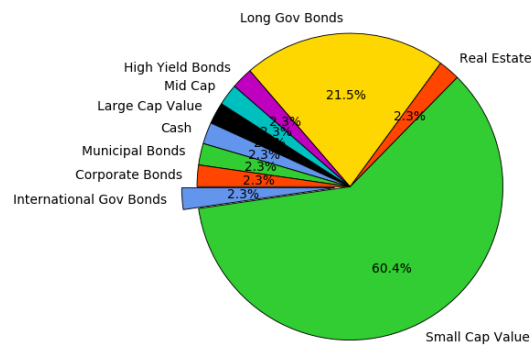
1 Year Expected Return (\$): \$186,953 32.36%

1 Year Risk (Std Deviation %) : $\pm 222.18\%$

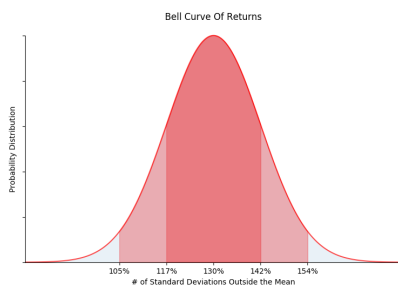
7 Year Expected Return (\$): \$1,035,554 633.14%

7 Year Risk (Std Deviation %): $\pm 3319.86\%$

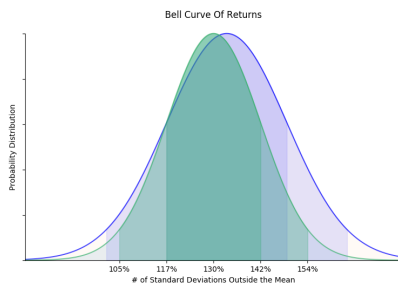
5 Prescribed Portfolio Overview - Statistical Analysis



Portfolio Breakdown



Prescribed Portfolio 1 Year Projections



Prescribed Portfolio 7 Year Projections

1 Year Expected Return (\$): \$183,236 29.72%

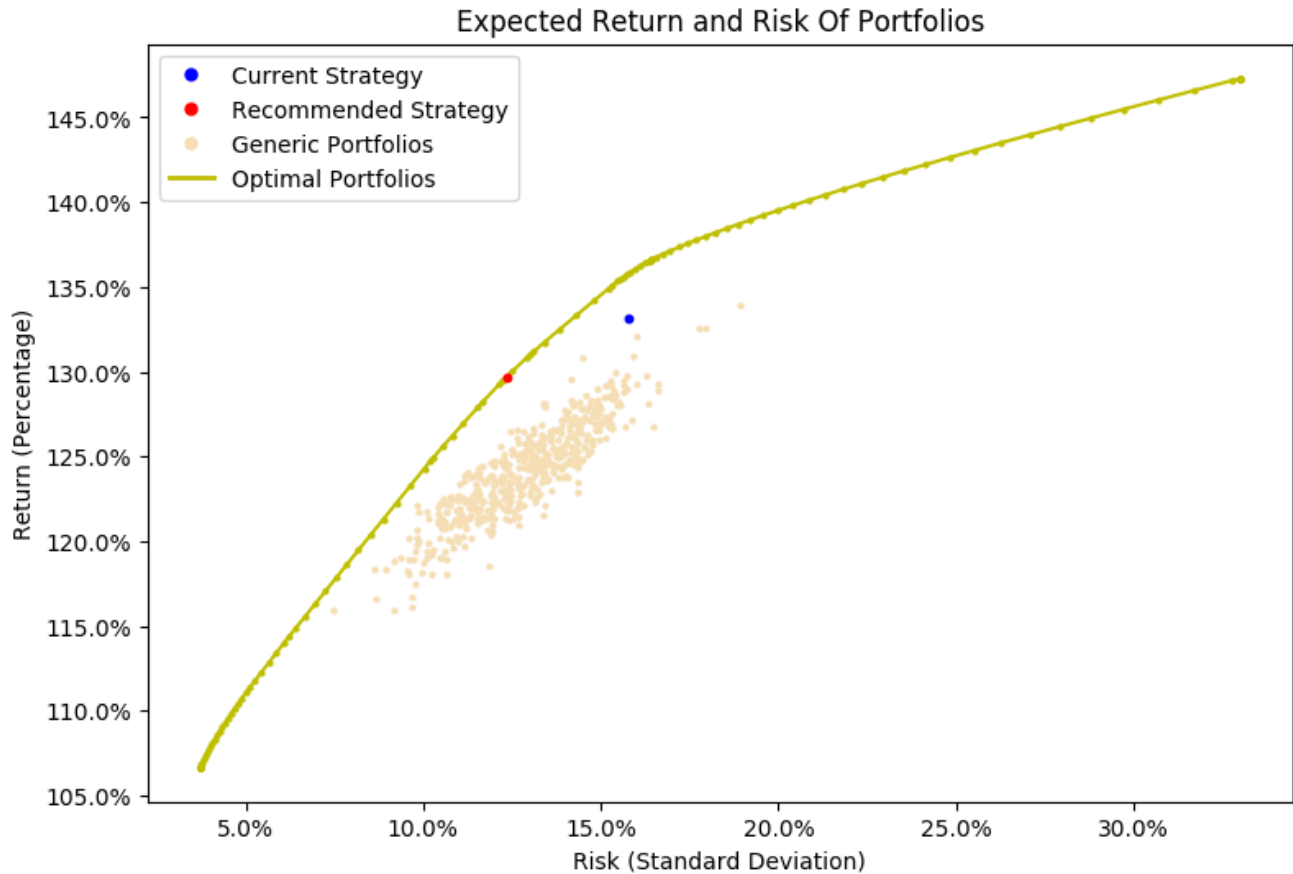
1 Year Risk (Std Deviation %): $\pm 175.16\%$

7 Year Expected Return (\$): \$878,067 521.64%

7 Year Risk (Std Deviation %): $\pm 2208.77\%$

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) : $\pm 12.34\%$

Expected Return (%): 29.69%

Adjustment of Risk (%): (3.43%)

Change in Return (%): (3.46%)

7 Correlation Matrices

| Corr. | BIL | CBFSX | GVI | HYG | ILTB | IYR | JKD | MDY | MUB | VIGRX | VISVX |
|-------|------|-------|------|------|------|------|------|------|------|-------|-------|
| BIL | 1.0 | 0.93 | 0.91 | 0.84 | 0.89 | 0.77 | 0.86 | 0.61 | 0.94 | 0.9 | 0.3 |
| CBFSX | 0.93 | 1.0 | 0.97 | 0.87 | 0.98 | 0.77 | 0.9 | 0.63 | 0.98 | 0.94 | 0.3 |
| GVI | 0.91 | 0.97 | 1.0 | 0.75 | 0.99 | 0.65 | 0.8 | 0.45 | 0.97 | 0.89 | 0.09 |
| HYG | 0.84 | 0.87 | 0.75 | 1.0 | 0.78 | 0.88 | 0.96 | 0.9 | 0.83 | 0.9 | 0.7 |
| ILTB | 0.89 | 0.98 | 0.99 | 0.78 | 1.0 | 0.67 | 0.82 | 0.5 | 0.97 | 0.9 | 0.14 |
| IYR | 0.77 | 0.77 | 0.65 | 0.88 | 0.67 | 1.0 | 0.8 | 0.78 | 0.79 | 0.72 | 0.65 |
| JKD | 0.86 | 0.9 | 0.8 | 0.96 | 0.82 | 0.8 | 1.0 | 0.88 | 0.86 | 0.97 | 0.63 |
| MDY | 0.61 | 0.63 | 0.45 | 0.9 | 0.5 | 0.78 | 0.88 | 1.0 | 0.58 | 0.77 | 0.92 |
| MUB | 0.94 | 0.98 | 0.97 | 0.83 | 0.97 | 0.79 | 0.86 | 0.58 | 1.0 | 0.91 | 0.25 |
| VIGRX | 0.9 | 0.94 | 0.89 | 0.9 | 0.9 | 0.72 | 0.97 | 0.77 | 0.91 | 1.0 | 0.45 |
| VISVX | 0.3 | 0.3 | 0.09 | 0.7 | 0.14 | 0.65 | 0.63 | 0.92 | 0.25 | 0.45 | 1.0 |

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 | CBFSX | HYG | IYR | ILTB | VISVX | MDY | JKD | VIGRX |
|-----|-----|-----|-------|-----|-----|------|-------|-----|-----|-------|
| 2% | 5% | 5% | 10% | 10% | 13% | 15% | 16% | 18% | 25% | 38% |

Above is the ranking of the selected asset classes by risk

| BIL | GVI | MUB | CBFSX | ILTB | IYR | HYG | VISVX | MDY | JKD | VIGRX |
|-----|-----|-----|-------|------|-----|-----|-------|-----|-----|-------|
| 2% | 6% | 6% | 14% | 21% | 21% | 22% | 36% | 40% | 44% | 53% |

Above is the ranking of the selected asset classes by return