

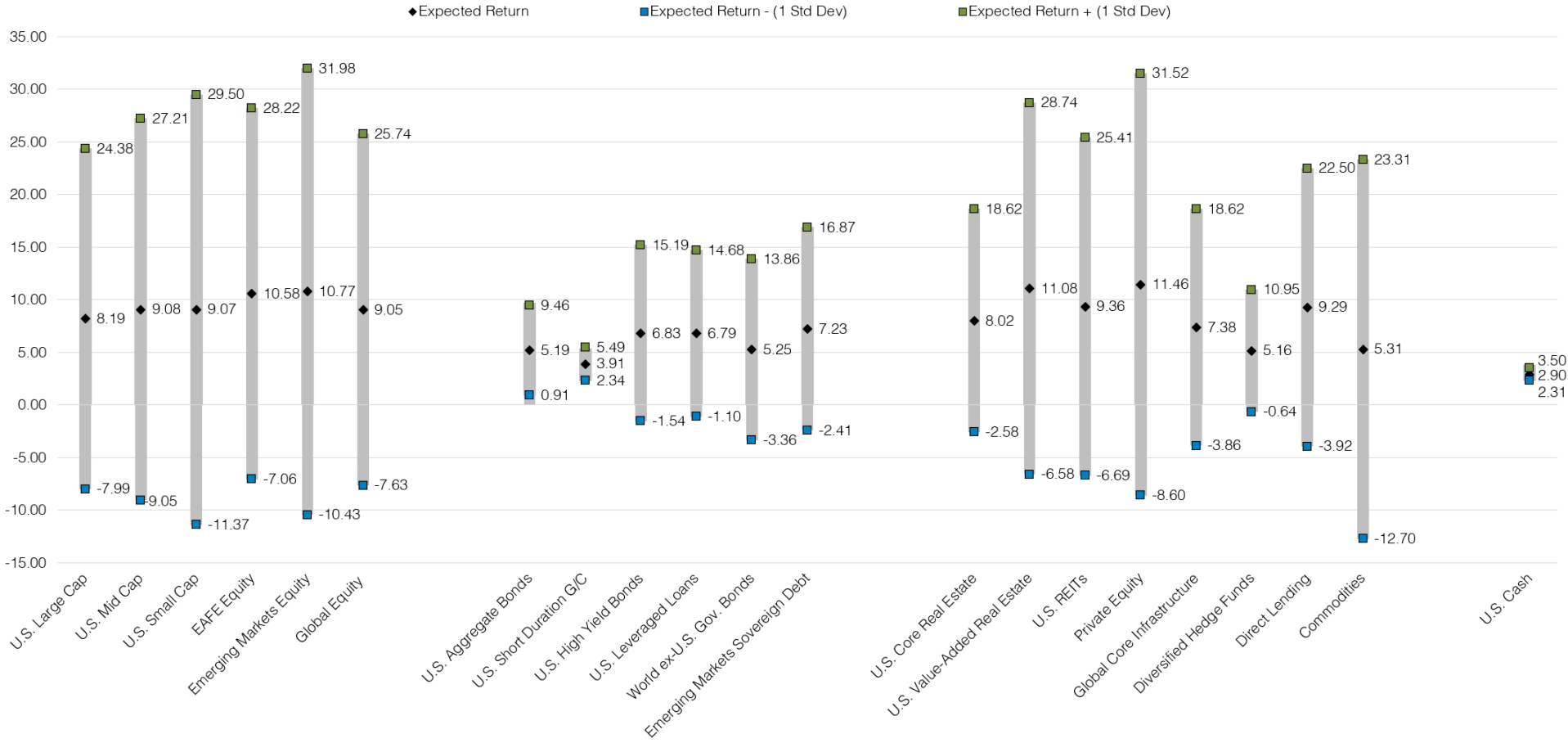
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# Delray Beach Police

Asset Allocation Review  
May, 2024

**MARINER**

Expected Returns and Standard Deviations



Source: JPMorgan Capital Market Assumptions 2024

# Asset Mixes and Statistics

## Asset Class Allocation

| %                                     | Policy | 1     | 2     | 3     |
|---------------------------------------|--------|-------|-------|-------|
| U.S. Cash                             | 0.00   | 0.00  | 0.00  | 0.00  |
| U.S. Aggregate Bonds                  | 15.00  | 7.00  | 7.00  | 5.00  |
| U.S. Short Duration Government/Credit | 0.00   | 0.00  | 0.00  | 0.00  |
| U.S. High Yield Bonds                 | 2.50   | 2.50  | 2.00  | 0.00  |
| U.S. Leveraged Loans                  | 0.00   | 0.00  | 0.00  | 0.00  |
| World ex-U.S. Government Bonds        | 2.50   | 2.50  | 0.00  | 0.00  |
| Emerging Markets Sovereign Debt       | 0.00   | 0.00  | 0.00  | 0.00  |
| U.S. Large Cap                        | 30.00  | 22.00 | 20.00 | 12.00 |
| U.S. Mid Cap                          | 15.00  | 20.00 | 20.00 | 10.00 |
| U.S. Small Cap                        | 4.00   | 9.00  | 11.00 | 5.00  |
| EAFE Equity                           | 16.00  | 16.00 | 16.00 | 20.00 |
| Emerging Markets Equity               | 0.00   | 0.00  | 0.00  | 0.00  |
| Global Equity                         | 0.00   | 0.00  | 0.00  | 0.00  |
| U.S. Core Real Estate                 | 10.00  | 5.00  | 3.00  | 3.00  |
| U.S. Value-Added Real Estate          | 0.00   | 0.00  | 0.00  | 5.00  |
| U.S. REITs                            | 0.00   | 0.00  | 0.00  | 0.00  |
| Private Equity                        | 4.00   | 15.00 | 20.00 | 35.00 |
| Global Core Infrastructure            | 0.00   | 0.00  | 0.00  | 0.00  |
| Diversified Hedge Funds               | 0.00   | 0.00  | 0.00  | 0.00  |
| Direct Lending                        | 1.00   | 1.00  | 1.00  | 5.00  |
| Commodities                           | 0.00   | 0.00  | 0.00  | 0.00  |

## Single Year Expectations

| %                  | Policy | 1     | 2     | 3     |
|--------------------|--------|-------|-------|-------|
| Mean Return        | 8.31   | 9.01  | 9.27  | 9.99  |
| Standard Deviation | 12.42  | 14.59 | 15.36 | 15.34 |
| Sharpe Ratio       | 0.67   | 0.62  | 0.60  | 0.65  |

**Allocation Ranges**- the range a specific asset class' allocation must fall between.

**Arithmetic Mean**- the average of annual returns.

**Asset Allocation**- the process of determining how investment fund should be distributed among asset classes to optimize the balance between risk and reward based on investment needs.

**Asset Classes**- a grouping of investments that exhibit similar characteristics and behave similarly in the marketplace. Examples include equities, fixed income, cash equivalent or money market instruments, and alternatives.

**Capital Market Assumptions** - expected returns, standard deviations, and correlation estimates that represent the long-term risk/return forecasts for various asset classes.

**Correlation**- statistical measurement of the relationship between two variables. Possible correlations range from +1 to -1. A zero correlation indicates that there is no relationship between the variables. A correlation of -1 indicates a perfect negative correlation and +1 indicates a perfect positive correlation.

**Diversification** - the process of owning different investments that tend to perform well at different times in order to reduce the effects of volatility in a portfolio, and also increase the potential for increasing returns.

**Efficient Frontier** - a representation of potential portfolios that offer the highest expected return for a specific level of risk (standard deviation).

**Expected Return**- the arithmetic average (mean) of each asset class.

**Geometric Mean**- the average of annual returns compounded over multiple periods.

**Kurtosis**- indicates the peakedness of a distribution. For normal distribution, Kurtosis is 3.

**Monte Carlo Simulation** - a model used to predict the probability of different outcomes and used to understand the impact of risk and uncertainty in prediction and forecasting models.

**Optimized Portfolio** - a portfolio that lies along the efficient frontier and is determined by target risk/return objectives. The underlying exposures are dependent on forecasted asset class expectations.

**Risk Tolerance**- the degree of uncertainty that an investor can handle in regard to a negative change in the value of the portfolio.

**Skewness**- reflects the degree of asymmetry of a distribution. If the distribution has a longer left tail, the function has negative skewness. Otherwise, it has positive skewness. A normal distribution is symmetric with skewness 0.

**Sharpe Ratio**- In this report, a reward-to-variability ratio and a measure of the return per unit of risk in an investment asset or a trading strategy. This is based on methodology used by Morningstar, whose software was used to create these charts. This definition differs from the ratio that Dr. William Sharpe created in that the risk-free rate has not been deducted in Morningstar's calculations.

**Standard Deviation** - A measure of the dispersion of a set of data from its mean. Calculated by the square-root of the variance.

**Target Return**- the specific return the investor is modeling to reach, usually sent in place by the actuary.

**Time Horizon**- the total length of time that an investor expects to hold a security or a portfolio before it is liquidated.

**Volatility**- the amount and frequency an investment fluctates in value.

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This Asset Allocation Analysis (the "Analysis") uses assumptions from the 2024 JPMorgan Long Term Capital Market Assumptions (the "2024 JPMorgan Assumptions"). Accordingly, there are statements of future expectations, estimates, projections, and other forward-looking statements that are based on available information and views as of the time of those statements. Such forward-looking statements are inherently speculative as they are based on assumptions which may involve known and unknown risks and uncertainties. Actual results, performance or events may differ materially from those expressed or implied in such statements.

Furthermore, the reader should be aware that the outputs presented in this Analysis are slightly different than those presented in the original 2024 JPMorgan Assumptions. Due to changes in the underlying forecasted correlations from the 2024 JPMorgan Long Term Capital Assumptions, and thereby changes to the methodology used by JPMorgan to create correlation estimates, a malfunction occurs when the 2024 JPMorgan Assumptions interface with Morningstar (i.e., one of the means by which Mariner creates this Analysis). Accordingly, the utilization of a secondary resource created by Morningstar is utilized to remediate this issue; however, this remedy causes some deviation in figures from the original 2024 JPMorgan Assumptions. We consider these deviations to be generally immaterial.

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