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Methodological Guide
Suggested Term and Investment Projections

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Content

Comprehensive Methodology for Calculating Hypothetical Historical Returns of Model Portfolios

The returns presented for the model portfolios are generated through a retrospective simulation ("backtesting") designed to illustrate how the portfolios would have performed had they existed during specific historical periods. Since the model portfolios are new and do not have an actual performance track record, the results should be considered **hypothetical, for illustrative purposes only, and do not represent actual results achieved by clients.**

The following section provides a detailed description of the methodology employed.

1. Objective of the Historical Calculation

The purpose of this simulation is to:

- Evaluate how each portfolio would have behaved under its **Strategic Asset Allocation.**
- Reflect the theoretical evolution of the investments considering quarterly rebalancing and management fees.
- Estimate consistent annual returns using **IRR** calculations.
- Provide an illustration of a disciplined management framework based on replicable parameters.

It does **not** aim to:

- Predict future performance.
- Precisely reproduce actual results.
- Incorporate operational effects, actual transaction costs, or market constraints.

2. General Calculation Framework

The hypothetical historical return is obtained through a simulation based on:

1. **The benchmarks of the vehicles or asset classes used in each portfolio.**
    - For each asset class, a widely recognized index is used to adequately represent the behavior of that market.

- These indices substitute for the real returns of instruments that did not yet exist or were not part of the portfolio.

2. **The strategic weights (Strategic Asset Allocation) defined for each model portfolio.**
   - These weights represent the target exposure to each asset class.
   - Example: 60% equities, 40% fixed income.
3. **Quarterly rebalancing to the strategic asset allocation.**
   - At the end of each quarter, the portfolio is adjusted back to the weights defined in the strategic allocation.
   - This process prevents weight drift and ensures that the calculations reflect the behavior of a disciplined, systematically managed portfolio.
4. **Application of Pinvest's portfolio management fees.**
   - A **0.80% annual** fee is applied, charged **quarterly**, based on the **average assets under management (AUMs)** during each quarter.
   - This reduces net returns, reflecting the actual cost associated with portfolio management.

3. Initial Amount and Determination of Units

The simulation begins on a defined start date with an **initial investment amount** allocated among the asset classes according to the portfolio's strategic weights.

For each asset class:

- The allocated amount is determined based on the portfolio's percentage weights.
- That amount is divided by the value of the benchmark for that asset class on the initial date.
- The result is the number of **hypothetical units** purchased:

$$\text{Units}_{i,0} = \frac{\text{Allocated Amount}}{\text{Value of Index}_i \text{ on the initial date}}$$

These units represent theoretical quantities and are used exclusively for simulation purposes.

4. Evolution of Units Over Time

The value of each unit evolves according to the movements of the corresponding benchmark:

$$\text{Value}_{i,t} = \text{Units}_{i,0} \times \text{Index Value}_i \text{ at time } t$$

The total value of the portfolio at any point in time is the sum of the values of all asset classes:

$$\text{Portfolio}_t = \sum_i \text{Value}_{i,t}$$

5. Quarterly Rebalancing to the Strategic Asset Allocation

Each quarter:

1. The total value of the portfolio is calculated before rebalancing.
2. The target amounts for each asset class are determined according to the strategic weights.
3. Units of asset classes that exceed their target weight are sold.
4. Units of asset classes that fall below their target weight are purchased.

The updated number of units after the rebalancing is calculated as:

$$\text{New Units}_{i,t} = \frac{\text{Target Amount}}{\text{Index Value}_i \text{ at time } t}$$

This process reflects discipline and continuous management aligned with the investment policy.

6. Calculation and Charging of Quarterly Fees

The portfolios are subject to an annual management fee of **0.80%,** applied **quarterly**:

$$\text{Quarterly Fee} = 0.20\% = \frac{0.80\%}{4}$$

The fee is applied to the **average AUM for the quarter**.
The fee is deducted from the value of the portfolio after the rebalancing.

7. Annual Return Calculation Using IRR

Once each calendar year is completed:

1. The initial value of the portfolio at the beginning of the year is taken.
2. The final value at year-end is recorded.
3. All internal cash flows generated by rebalancing and fees are incorporated.
4. In Excel, the **Internal Rate of Return (IRR)** is calculated for that annual period.

IRR is used as the annual performance metric because it properly captures:

- internal changes in value,
- adjustments from rebalancing,
- fee deductions,
- non-linear portfolio growth.

This method offers a more accurate approximation than a simple nominal return.

8. Methodology Limitations and Assumptions

The simulation is based on several simplified assumptions:

- Actual transaction costs, spreads, taxes, and market frictions are not included.
- Perfect and continuous availability of instruments at values equivalent to the benchmark is assumed.
- Execution is assumed to be instantaneous and without market impact.
- Liquidity discounts, operational constraints, and position-size limits are not considered.
- Historical returns are treated as representative, although they may not reflect future conditions.
- Portfolio evolution depends exclusively on benchmark behavior.

These considerations are consistent with standard backtesting methodologies, but must be clearly disclosed.

9. Regulatory Disclaimers and Hypothetical Nature

The results produced by this methodology:

- **are entirely hypothetical,**
- **do not represent actual investment results,**
- **do not reflect how the portfolio would have been executed in real markets,**
- **do not constitute a guarantee, prediction, or promise of future performance.**

Historical returns, whether real or hypothetical, are **not** indicative of future results.
Future performance may differ significantly.

Portfolios may experience lower, higher, or negative returns in the future, even when the methodology shows positive results in past periods.

10. Illustrative Purpose

The information generated is intended to:

- illustrate how the portfolio would have behaved under historical conditions,
- facilitate comparative analysis,
- support communication of the risk/return profile,
- serve as an educational tool for clients and advisors.

Methodology for Constructing Investment Projections Based on Historical Data

To present illustrative scenarios of how an investment might evolve in the future, an annual rate of return is estimated based on historical performance from March 1996 through December 2025 of the Bloomberg Global Aggregate Bond Index (USD-hedged) and the S&P 500 Net Total Return Index in USD, as these are the available indices with the greatest historical depth. Specifically, the historical returns for each year over the past 20 years are taken as an average scenario, and from them a Compound Annual Growth Rate (CAGR) is calculated.

This historical rate is then applied to the investment amount indicated by the client to generate a hypothetical projection of the future value under a constant-growth scenario.

It is important to note that:

- **Historical returns are not indicative of and do not guarantee future performance.**
- Markets may behave differently in the future due to economic, political, or structural changes.
- The projections are presented solely for illustrative purposes and should be interpreted as theoretical estimates based on past data.
- The projected figures do not represent a commitment or promise of performance.

The objective of these projections is to provide a quantitative reference of how an investment could grow under historically based assumptions, while fully acknowledging the limitations and uncertainty inherent in financial market behavior.

Methodology for Determining the Recommended Minimum Investment Horizon

To establish a recommended minimum investment horizon for each of the five model portfolios, a historical analysis was conducted using monthly data from two widely recognized market indices:

- **S&P 500 Index** as the equity benchmark.
- **Bloomberg U.S. Aggregate Bond Index** as the fixed-income benchmark.

These indices adequately represent the historical behavior of U.S. equity and bond markets, respectively, and are commonly used as industry benchmarks for risk analysis, performance evaluation, and asset allocation.

1. Use of Indices and Strategic Allocations

For each model portfolio, the **strategic weightings of equities and fixed income** were applied (e.g., 20/80, 40/60, 60/40, 80/20, 100/0).

Based on this:

1. Historical monthly returns of the S&P 500 (equities) were taken from the end of March 1996 through the end of December 2025.
2. Monthly returns of the Bloomberg U.S. Aggregate Bond Index (fixed income) were taken over the same period.
3. The monthly return series for each portfolio was constructed by combining both indices according to their respective weights, excluding fees and quarterly rebalancing, as the objective is to evaluate **drawdowns and recovery periods across rolling time windows.**

2. Evaluation of All Possible Historical Windows

For each model portfolio, all continuous historical windows of different time horizons were analyzed: 1 year, 2 years, 3 years, up to 20 years, using monthly data.

For each window, the following were calculated:

- The portfolio’s cumulative return over the period.

- Whether the cumulative return would have been **positive or negative** for an investor.

This analysis identifies historically adverse periods for each portfolio given its equity/bond composition.

3. Identification of the Worst Historical Scenario, using the 10th percentile

For each model portfolio, the analysis sought to determine:

- The **worst cumulative return** across all historical windows for each horizon.
- The **longest period** during which an investor could have remained in negative territory before recovering.
- Instead of using the absolute worst outcome for each horizon, the 10th percentile of cumulative returns was used.

This approach **estimates the maximum time historically required to return to positive performance**, reduces the influence of extreme outliers, produces a more stable estimate, offers a more realistic risk perspective for most investors.

4. Determination of the Recommended Minimum Horizon

The **recommended minimum horizon** is defined as:

The shortest period over which, historically, a portfolio with that allocation would never have shown a negative cumulative return.

In other words:

- Rolling windows of 1, 2, 3, … *n* years are analyzed using the 10th percentile of cumulative returns.
- For each duration, it is verified whether any window resulted in a negative cumulative return.
- The first duration for which **all historical windows are** positive is defined as the recommended horizon.

This approach bases the recommendation not on discretionary judgment but on empirical historical evidence of market behavior.

5. Important: Hypothetical Nature and Limitations of the Analysis

As with the modeled portfolio returns, this analysis is **hypothetical** and should be interpreted solely for illustrative purposes. Key considerations include:

- Results depend on historical index behavior, which may not repeat in the future.
- The portfolios analyzed did not exist during the evaluated periods; retrospective data is used to estimate past scenarios.
- Factors such as costs, taxes, market frictions, or availability of real instruments are not included.
- Using only two indices (one equity, one fixed income) simplifies market representation and may not fully capture all risks of a real portfolio.
- Pinvest acknowledges that the S&P 500 is composed of large-cap U.S.-domiciled issuers and is not designed to represent the full global equity opportunity set.
- Its selection reflects, among other factors, the breadth, continuity, and perceived reliability of its long-term historical dataset—often exceeding that of comparable global benchmarks.
- Many S&P 500 constituents derive substantial portions of their revenues and maintain significant operations outside the United States. While this provides some indirect sensitivity to global economic conditions, it should not be interpreted as equivalent to direct representation of non-U.S. markets.
- By using the 10th percentile instead of the absolute worst case, extreme outliers were removed to estimate an adverse but representative scenario.

Therefore:
The recommended horizons derived from this analysis are estimates based on historical data and do not **guarantee that the portfolio cannot experience losses in the future, even if the suggested horizon is observed.**