

Asset Allocation

Bolun Liu

September 7, 2021

Contents

| | | |
|----------|---|----------|
| 1 | Overview of Asset Allocations | 1 |
| 1.1 | Investment Governance(投资规划) | 1 |
| 1.2 | A Quick Glance of Asset Allocation | 2 |
| 1.2.1 | Strategic asset allocation(SAA) | 2 |
| 1.2.2 | Tactical Asset Allocation(TAA)(战术) | 2 |
| 1.2.3 | Economic Balance Sheet | 2 |
| 1.3 | Asset Allocation Approaches | 2 |
| 1.3.1 | Three Categories | 2 |
| 1.3.2 | Two Categories | 3 |
| 1.3.3 | Factor-based approach | 3 |
| 1.4 | Implementation of Asset Allocation | 3 |
| 1.5 | Rebalancing Asset Allocation | 4 |
| 1.5.1 | Approaches to Rebalancing | 4 |
| 2 | Principles of Asset Allocation | 4 |
| 2.1 | Asset-Only Allocation | 4 |
| 2.1.1 | Mean-Variance Optimiztion | 4 |
| 2.1.2 | Other Models | 4 |
| 2.2 | Liability-Relative Allocation | 4 |
| 2.2.1 | Introduction of Liability-Relative Allocation | 4 |
| 2.2.2 | Approaches of liability-Relative Allocation | 4 |
| 2.3 | Goals-Based Allocation | 4 |
| 2.4 | Other Allocation Approaches | 4 |

上午主观题 中比较容易拿分的科目

1 Overview of Asset Allocations

1.1 Investment Governance(投资规划)

achieve the asset owner's within the asset owner's .

1. Articulating investment objectives

- Defined benefit pension fund
- Endowment fund
- individual investor

-
2. Allocation of rights and responsibilities
 3. investment policy statement
 4. Asset allocation and rebalancing policy
 5. Reporting framework
 6. The governance audit

1.2 A Quick Glance of Asset Allocation

1.2.1 Strategic asset allocation(SAA)

SAA is an asset allocation that arises in investment planning

- 9 steps of SAA
 - return objectives
 - risk tolerance
 - investment horizon
 - constraints
 - approach to asset allocation
 - [Capital Market Expectations](#)
 - asset allocation choices for consideration
 - Test the robustness of the potential choices
 - back to step

1.2.2 Tactical Asset Allocation(TAA)(战术)

- **short-term deviations** from strategic asset allocation
- TAA is **active management** at the asset class level

1.2.3 Economic Balance Sheet

accounting balance sheet + **extended portfolio assets and liabilities**

1.3 Asset Allocation Approaches

1.3.1 Three Categories

1. Asset-only approach maximize eg. mean-variance optimization(MVO)
 - Risk measures
 - Volatility(standard deviation)
 - Tracking risk(tracking error, risk relative to benchmark)
 - Downside risk(semi-variance, maximum drawdown, VaR)
-

2. Liability-relative approach objective of eg. **surplus(A-L) optimization**

- risk measures:
 - Volatility of surplus(A-L)
 - Volatility of fund(A/L)
- 3. Goals-based approach for each specified goals risk limits can be quantified as the of not achieving a goal

1.3.2 Two Categories

具体、抽象 * Asset class-based approach each asset class has its own .

- Five criteria to effectively specify asset class for the purpose of asset allocation:
- Assets within an asset class should be relatively
- Asset classes should be .
- Asset classes should be .
- The asset classes as a group should make up a preponderance of .
- Asset classes selected for investment should have the capacity to absorb a meaningful prportion of .

1.3.3 Factor-based approach

desired exposures to . Multifactor risk models

- Steps
 - Specify risk factors and the desired exposure to each risk factor
 - Construct that isolate exposure to each risk factor.
 - Map the exposure in **factor space** back to **asset class space**.

1.4 Implementation of Asset Allocation

passive/active choice

- passive : follow benchmark(Index, liability)
 - active : beat benchmark
 - Factors on Passive/Active Choices
 - Available investments
 - Scalability of active strategies
 - Trade-off benefits and risks
 - Feasibility of investing passively while incorporating client-specific constraints
 - Beliefs concerning market informational efficiency
 - Tax status
-

1.5 Rebalancing Asset Allocation

Rebalancing is the discipline of adjusting portfolio weights to more closely align with .

1.5.1 Approaches to Rebalancing

1. Calendar rebalancing eg. monthly, quarterly, semiannually
2. Percent-range rebalancing

2 Principles of Asset Allocation

2.1 Asset-Only Allocation

2.1.1 Mean-Variance Optimization

1. Introduction of MVO use MVO to determine inputs: returns, risks (Std. Dev.), and pair-wise correlations
 - (a) Utility Function $U_m = E(R_m) - 0.005\lambda\sigma_m^2$ $\lambda = 1 \dots 10$
 - (b) Safety-first ratio $SFR = \frac{r_p - MAR}{\sigma^2}$
 - (c) Two constraints
 - i. **Budget constraint:** weights must sum to 1.
 - ii. **Non-negativity constraint:** allow only positive weights.
2. Criticisms of MVO
 - (a) The asset allocations are highly sensitive to the inputs, especially the expected return (garbage in, garbage out)
3. Other Issues of MVO

2.1.2 Other Models

2.2 Liability-Relative Allocation

2.2.1 Introduction of Liability-Relative Allocation

2.2.2 Approaches of liability-Relative Allocation

2.3 Goals-Based Allocation

2.4 Other Allocation Approaches
