1 | CASE PROJECT 1 / ABDUL RAHMAN

QUESTION 1

Create a scenario table for each fund, and determine the percentage of targeted return that futures & options should fetch so that Mr. X achieves the desired return on his investment.

SOLUTION

Problem Understanding

Mr. X is an investor with Rs. 50 lakhs for investment. His risk score has increased from 30/100 to 47/100, categorizing him as a risk-neutral investor. He aims for a compounded annual growth rate (CAGR) of 15% - 18% over a 5-year time frame. The current market conditions show:

- Debt fetching a rate of 7%
- Equity fetching a rate of 13.5%
- Short-term volatility in the futures & options market

Mr. X is considering the following funds:

- **Fund A:**
  - Debt: 50%
  - Equity: 30%
  - Futures & Options: 20%
  - Risk Score: 40/100
- **Fund B:**
  - Equity: 40%
  - Debt: 40%
  - Futures & Options: 20%
  - Risk Score: 55/100
- **Fund C:**
  - Equity: 40%
  - Debt: 30%
  - Futures & Options: 30%
  - Risk Score: 65/100

SCENARIO TABLES

Fund A Scenario Table

Target Return: 15%

$$15\% = (0.50 \times 7\%) + (0.30 \times 13.5\%) + (0.20 \times r_{FO})$$

$$15\% = 3.5\% + 4.05\% + 0.20r_{FO}$$

$$15\% - 7.55\% = 0.20r_{FO}$$

$$7.45\% = 0.20r_{FO}$$

$$r_{FO} = \frac{7.45\%}{0.20} = 37.25\%$$

Target Return: 18%

$$18\% = (0.50 \times 7\%) + (0.30 \times 13.5\%) + (0.20 \times r_{FO})$$

$$18\% = 3.5\% + 4.05\% + 0.20r_{FO}$$

$$18\% - 7.55\% = 0.20r_{FO}$$

$$10.45\% = 0.20r_{FO}$$

$$r_{FO} = \frac{10.45\%}{0.20} = 52.25\%$$

Fund B Scenario Table

Target Return: 15%

$$15\% = (0.40 \times 7\%) + (0.40 \times 13.5\%) + (0.20 \times r_{FO})$$

$$15\% = 2.8\% + 5.4\% + 0.20r_{FO}$$

$$15\% - 8.2\% = 0.20r_{FO}$$

$$6.8\% = 0.20r_{FO}$$

$$r_{FO} = \frac{6.8\%}{0.20} = 34\%$$

Target Return: 18%

$$18\% = (0.40 \times 7\%) + (0.40 \times 13.5\%) + (0.20 \times r_{FO})$$

$$18\% = 2.8\% + 5.4\% + 0.20r_{FO}$$

$$18\% - 8.2\% = 0.20r_{FO}$$

$$9.8\% = 0.20r_{FO}$$

$$r_{FO} = \frac{9.8\%}{0.20} = 49\%$$

Fund C Scenario Table

Target Return: 15%

$$15\% = (0.30 \times 7\%) + (0.40 \times 13.5\%) + (0.30 \times r_{FO})$$

$$15\% = 2.1\% + 5.4\% + 0.30r_{FO}$$

$$15\% - 7.5\% = 0.30r_{FO}$$

$$7.5\% = 0.30r_{FO}$$

$$r_{FO} = \frac{7.5\%}{0.30} = 25\%$$

Target Return: 18%

$$18\% = (0.30 \times 7\%) + (0.40 \times 13.5\%) + (0.30 \times r_{FO})$$

$$18\% = 2.1\% + 5.4\% + 0.30r_{FO}$$

$$18\% - 7.5\% = 0.30r_{FO}$$

$$10.5\% = 0.30r_{FO}$$

$$r_{FO} = \frac{10.5\%}{0.30} = 35\%$$

Fund	Target Return: 15%	Target Return: 18%
Fund A	37.25%	52.25%
Fund B	34%	49%
Fund C	25%	35%

Table 1: Required Return from Futures & Options

QUESTION 2

Analysis

Based on the analysis of the scenario tables, **Fund C** is recommended for Mr. X. Given his current risk-neutral profile and the target CAGR of 15% - 18%, Fund C presents the most balanced risk-return trade-off.

Justification

From the scenario table, we observed the following required returns from the Futures & Options segment:

- **Fund A** requires a return of 37.25% to achieve a 15% target and 52.25% to achieve an 18% target.
- **Fund B** requires a return of 34% to achieve a 15% target and 49% to achieve an 18% target.

- **Fund C** requires a return of 25% to achieve a 15% target and 35% to achieve an 18% target.

Fund C requires the lowest returns from the volatile Futures & Options segment among the three funds. This lower required return indicates a reduced level of risk, which aligns well with Mr. X's risk-neutral profile. Given the short-term volatility in the Futures & Options market, Fund C's conservative exposure to this segment makes it the most suitable option for Mr. X to achieve his desired returns while managing risk effectively.

Risk-Return Trade-off

Fund	Target Return: 15%	Target Return: 18%
Fund A	37.25%	52.25%
Fund B	34%	49%
Fund C	25%	35%

Table 2: Required Return from Futures & Options

Given Mr. X's moderate risk tolerance, Fund C offers the highest probability of achieving the target returns with the least exposure to high-risk segments. The balanced allocation in Fund C (Equity: 40%, Debt: 30%, Futures & Options: 30%) provides a diversified portfolio that can potentially stabilize returns while mitigating risk.

Personal View

In my opinion, Fund C is the optimal choice for Mr. X considering his evolving risk profile and investment objectives. It provides a reasonable balance between risk and return, making it a prudent choice for achieving the desired CAGR of 15% - 18% over a 5-year period. The relatively lower required return from the Futures & Options segment compared to Funds A and B enhances the likelihood of achieving the target returns with manageable risk.

QUESTION 3

In this part of the question, I have to create an optimal investment strategy for Mr. X - keeping in consideration that I have to allocate 20% to each asset class - equity, debt, and futures & options.
A) For Mr. X's profile and risk appetite, to find an Indian mutual fund in the debt and equity segment that would suit Mr. X's risk appetite and also state the fund's historical returns (5 years). To mention the percentage allocation of overall portfolio value that would assign to these funds and the reason for the same. Also to, give a brief profile of the fund manager in charge of this mutual fund.

OPTIMAL INVESTMENT STRATEGY FOR MR. X

Part A: Suitable Mutual Funds for Debt and Equity

Debt Mutual Fund: SBI Magnum Income Fund

- **Historical Returns (5 years):** Approximately 8.2% per annum
- **Allocation:** 40%
- **Reason:** The SBI Magnum Income Fund has a strong track record of delivering stable returns with relatively low risk, which suits Mr. X's moderate risk appetite. Additionally, its consistent performance aligns well with the need for a dependable income stream.

Profile of the Fund Manager:

- **Name:** Dinesh Ahuja
- **Experience:** Over 20 years in fixed income markets
- **Background:** Dinesh Ahuja has a robust background in managing debt funds, ensuring a balanced and risk-adjusted approach to investments, making him an ideal choice for conservative investors.

Equity Mutual Fund: Axis Bluechip Fund

- **Historical Returns (5 years):** Approximately 14.5% per annum
- **Allocation:** 40%
- **Reason:** The Axis Bluechip Fund focuses on large-cap stocks, providing a balance of growth and stability. Its strong performance history and lower volatility make it suitable for a risk-neutral investor like Mr. X.

Profile of the Fund Manager:

- **Name:** Shreyash Devalkar
- **Experience:** Over 17 years in equity research and fund management
- **Background:** Shreyash Devalkar's experience in managing equity funds with a focus on large-cap stocks ensures a strategic and growth-oriented investment approach, aligning with Mr. X's risk appetite and return expectations.

Part B: Futures & Options Allocation and Expected Returns

Given the need to allocate at least 20% to each asset class, we will allocate the remaining 20% to Futures & Options (F&O) to meet Mr. X's targeted CAGR of 15% to 18%.

Calculation:

1. **Average Expected Return from Equity and Debt:**

$$a = (0.40 \times 14.5\%) + (0.40 \times 8.2\%) = 5.8\% + 3.28\% = 9.08\%$$

2. **Calculate Expected Return from Futures & Options:**

$$\text{CAGR}\% = a + 0.2x$$

- For a target CAGR of 15%:

$$15\% = 9.08\% + 0.2x$$

$$15\% - 9.08\% = 0.2x$$

$$5.92\% = 0.2x$$

$$x = \frac{5.92\%}{0.2} = 29.6\%$$

- For a target CAGR of 18%:

$$18\% = 9.08\% + 0.2x$$

$$18\% - 9.08\% = 0.2x$$

$$8.92\% = 0.2x$$

$$x = \frac{8.92\%}{0.2} = 44.6\%$$

Conclusion

To achieve the target CAGR:

- For a 15% overall return, Futures & Options need to fetch 29.6%.
- For an 18% overall return, Futures & Options need to fetch 44.6%.
