The optimal weights are [0.3301, 0.0473, 0.6226], where the asset weights are relatively balanced, with no negative weights (i.e., no short positions). The maximum RR_p is 0.2946, which is smaller than the Sharpe ratio but shows better performance in controlling extreme loss risks. By optimizing tail risks, the RR_p portfolio might perform more stably during market volatility.

Key Differences:

1. **Risk Measurement:**
    - The Sharpe ratio considers overall volatility (standard deviation) and optimizes the return-to-volatility ratio.
    - RR_p, in addition to volatility, includes expected shortfall, focusing on risk in extreme market conditions (i.e., the probability and extent of large losses).
2. **Weight Differences:**
    - In the maximum Sharpe ratio portfolio, one asset has a negative weight, indicating a short position to reduce volatility and improve the Sharpe ratio.
    - In the maximum RR_p portfolio, no negative weights are used; instead, the weights are adjusted to optimize return while minimizing tail risk.
3. **Risk-adjusted Focus:**
    - The maximum Sharpe ratio portfolio focuses on the overall risk-return ratio, suitable for stable market conditions.
    - The maximum RR_p portfolio is more suitable for investors focusing on extreme losses or seeking a more robust investment strategy during volatile markets.

Maximum Sharpe Ratio Portfolio and Maximum RR_p Portfolio:

- **Maximum Sharpe Ratio Portfolio**: The Sharpe ratio is 0.3441, indicating an optimal risk-return ratio. Despite volatility, its return is high relative to risk.
    - Weights: A1 = 0.1520, A2 = -0.1330 (short position), A3 = 0.9810. This portfolio is more dependent on A3, with shorting A2 to reduce risk.
- **Maximum RR_p Portfolio**: The RR_p is 0.2946, slightly lower than the Sharpe ratio but better at managing extreme risk.
    - Weights: A1 = 0.3301, A2 = 0.0473, A3 = 0.6226. There are no short positions, and the weight distribution aims to reduce extreme losses.

Comparative Analysis:

- The **maximum Sharpe ratio** portfolio has a higher return (0.3441) but relies on higher volatility and shorting strategies.
- The **maximum RR_p** portfolio, with a return of 0.2946, focuses on controlling tail risks, making it more conservative and stable, especially in extreme market conditions.

Conclusion:

- The maximum Sharpe ratio portfolio is better suited for stable markets but may suffer significant volatility during market extremes.
- The maximum RR_p portfolio, with its focus on minimizing tail risks, is ideal for those concerned with performance under extreme market conditions, though it offers a slightly lower return.