QF624-2025-W9

Number of participants: 21

1. Why introduce robustness in portfolio optimization?

14 correct answers
out of 14 respondents

	To guarantee the highest possible nominal return under perfect forecasts	0%	0 votes
✓	To protect against model errors or estimation noise in inputs	100%	14 votes
	To reduce computation time when solving large-scale problems	0%	0 votes
	To avoid using risk measures altogether	0%	0 votes

2. An “uncertainty set” in robust MVO represents:

10 correct answers
out of 13 respondents

	A collection of all feasible portfolios satisfying budget and risk constraints	15%	2 votes
✓	A family of plausible scenarios for returns or covariances around estimated values	77%	10 votes
	The set of all historical return observations used to estimate parameters	0%	0 votes
	A list of assets with identical risk profiles	8%	1 vote

3. Compared to the classic (nominal) MVO, a robust MVO solution typically:

11 correct answers
out of 11 respondents

	Allocates more weight to high-return but volatile assets	0%	0 votes
	Is identical when input estimates are exact	0%	0 votes
✓	Sacrifices some expected return to limit downside under worst-case scenarios	100%	11 votes
	Always yields a sparser (fewer-asset) portfolio	0%	0 votes

4. Box vs. ellipsoidal uncertainty sets differ conceptually in that:

8 correct answers
out of 10 respondents

✓	Box sets allow each parameter to vary independently, while ellipsoidal sets capture joint deviations	80%	8 votes
	Ellipsoidal sets are always larger, hence more conservative, than box sets	0%	0 votes
	Box sets require knowledge of covariance, while ellipsoidal sets do not	10%	1 vote
	They lead to the same portfolio when risk aversion is zero	10%	1 vote

5. One key benefit of formulating robust MVO as a single-stage problem (rather than min-max) is:

9 correct answers
out of 13 respondents

	It eliminates the need to estimate the covariance matrix	23%	3 votes
✓	It reveals an explicit penalty term in the objective that adjusts allocation intuitively	69%	9 votes
	It guarantees zero tracking error relative to the nominal solution	8%	1 vote
	It always converts the problem into a simple linear program	0%	0 votes