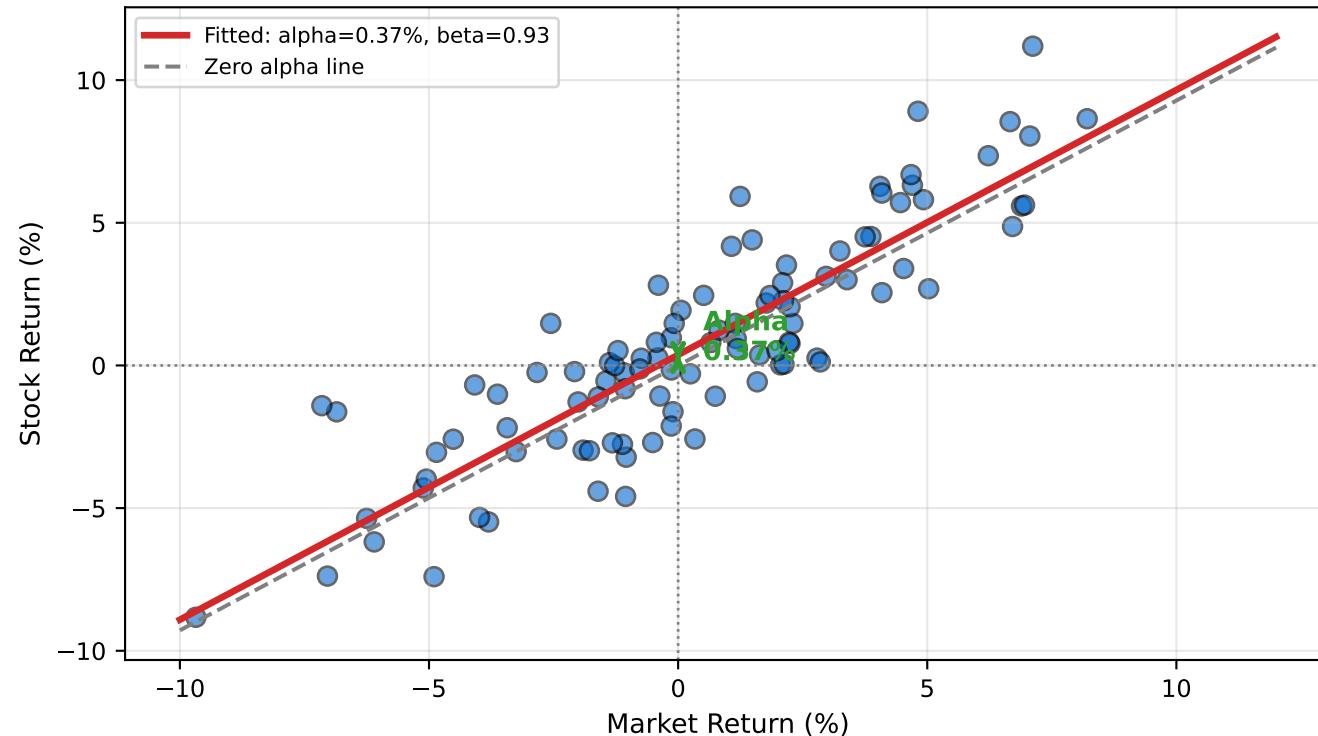
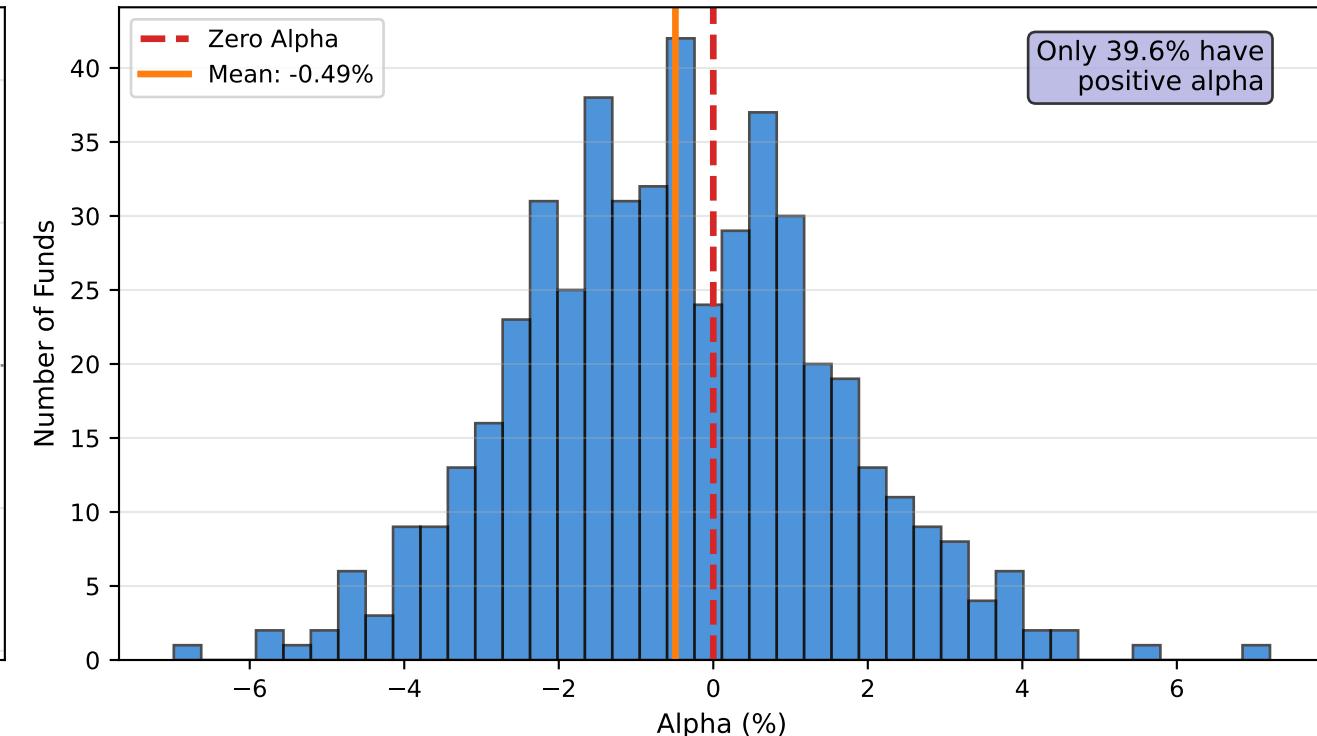


Alpha and Beta: Separating Skill from Market Risk

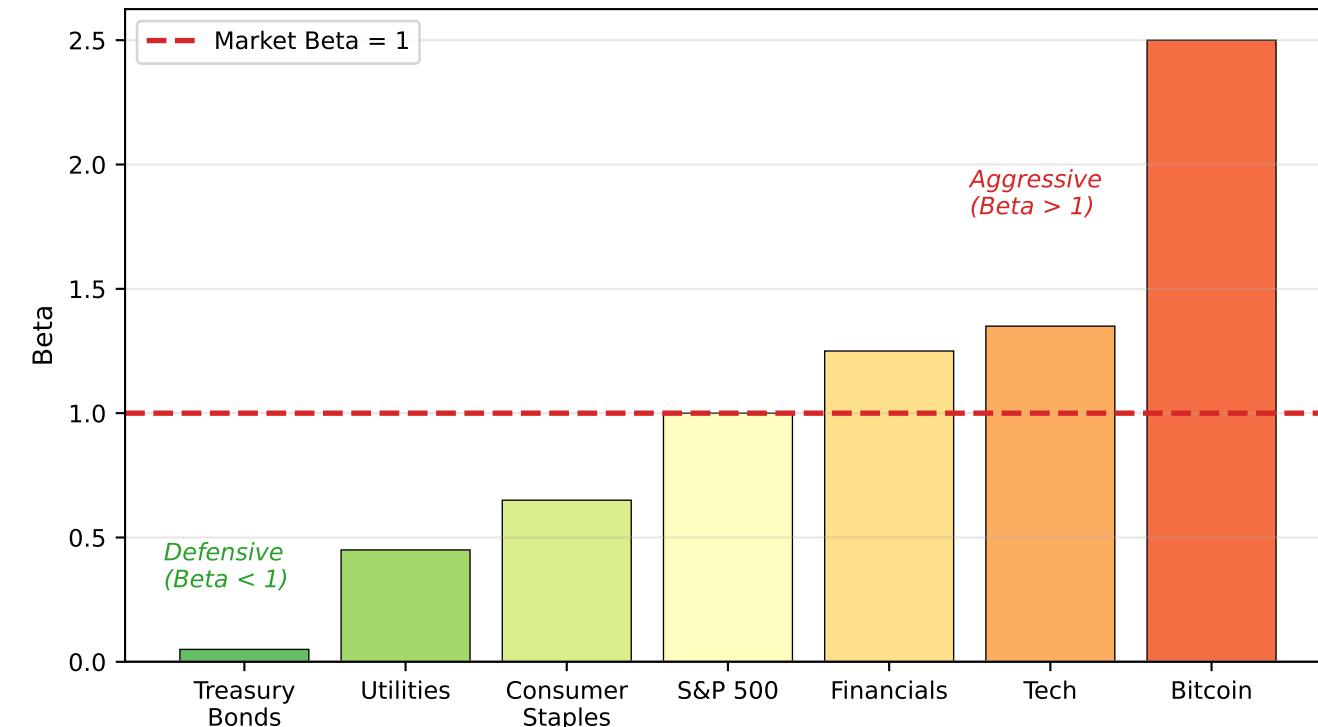
Alpha: Return Above What Beta Explains



Alpha Distribution: 500 Mutual Funds (Annualized)



Beta Spectrum: Defensive to Aggressive



Alpha vs Beta Summary

ALPHA VS BETA: KEY CONCEPTS

BETA (Risk Exposure)

- Measures sensitivity to market
- Cannot be "generated" - it's exposure
- High beta = high risk, high expected return
- Can be achieved cheaply via index funds

ALPHA (Skill Premium)

- Return AFTER accounting for risk factors
- Represents manager skill (or luck)
- Very difficult to generate consistently
- Most active managers have negative alpha

THE MATH:

$$R_i - R_f = \alpha + \beta \cdot (R_m - R_f) + \varepsilon$$

Rearranging:

$$\alpha = (R_i - R_f) - \beta \cdot (R_m - R_f)$$

EXAMPLE (Annualized):

- Fund return: 12%
- Risk-free: 2%
- Market return: 10%
- Fund beta: 1.2

$$\text{Alpha} = (12\% - 2\%) - 1.2 * (10\% - 2\%)$$

$$\text{Alpha} = 10\% - 9.6\% = 0.4\%$$

The fund added 0.4% above its risk-adjusted benchmark.