FIN 366: INVESTMENTS
MANY RISKY ASSETS & THE INDEX MODEL
CRITICAL THINKING & CONCEPTUAL QUESTIONS

1. Below is the image from the cover of Janus Henderson's "Trends and Opportunities" report. What does this image show? Explain as if you are describing the image to someone who is not trained in modern portfolio theory.

2. Are all IOSs an efficient frontier? Are all efficient frontiers an IOS?
3. Why should an investor avoid holding a portfolio below the efficient frontier?
4. How is it possible in the first place to hold a security below the efficient frontier? Don't portfolios have to fall on an IOS for them to be feasible?
5. Why is a portfolio to the northwest of the efficient frontier not feasible?
6. Are all portfolios on the efficient frontier *optimal*? (Hint: consider drawing a CAL from the risk-free rate to the efficient frontier.)
7. Must the complete portfolio always fall on the efficient frontier?
8. Why in practice can different portfolio managers and investors develop different optimal risky portfolios?
9. Why do we need to compute a high number of covariances (and therefore correlations) when we increase our risky portfolio to include many risky assets?
10. In what way does the index model offer a simplification over the computation of optimal risky portfolio weights?
11. You have a net worth of $100,000. You hold three mutual funds with tickers VANF, FIDL, and SSTR, with $30,000 in each. The rest of your wealth you hold in cash. A financial advisor tells you "I have computed the optimal weights to hold in your 3 funds. Rather than hold 33.33% of your risky portfolio in each, you should hold 50% of your 'risky wealth' in VANF, 25% in FIDL, and 25% in SSTR. Additionally, to optimize your complete portfolio, you should hold less cash and invest more in these three funds." Critique this advisor's advice.
12. Assume instead the advisor in the previous question says: "I have computed the optimal weights to hold in your 3 funds. Rather than hold 33.33% of your risky portfolio in each, you should hold 50% of your 'risky wealth' in VANF, 25% in FIDL, and 25% in SSTR. Additionally, you can achieve greater expected returns if you hold less cash and invest more in these three funds." Is this better advice?

13. How is the security characteristic line obtained? How does it differ from the CAL and CML?
14. Below is an output from Morningstar for the actively-managed Bridgeway Small Cap Value Fund.

Risk & Volatility Measures			
Trailing	Fund	Category	Index
Alpha	-0.60	-9.44	-8.76
Beta	1.19	1.31	1.26
R^2	58.18	76.35	77.23
Sharpe Ratio	0.61	0.39	0.40
Standard Deviation	29.42	28.17	26.99

USD | Fund as of Sep 30, 2021 | Category: Small Value as of Sep 30, 2021 | Index: Russell 2000 Value TR USD as of Sep 30, 2021 | Calculation Benchmark: S&P 500 TR USD

What is this fund's

a. "Reward per unit of risk"? Verify this number given the arithmetic average return of this fund's annual return over three years was 18.07%, and assume the risk-free rate is 0%.
b. This security's expected return when the market excess return is 0%?
c. The portion of this fund's return variation explained by the market?
d. The portion of this fund's return variation explained by fund-specific factors?
e. If the market rises 2%, how much do we expect this fund will rise?
f. Did this fund outperform or underperform other funds in its category?
g. If this fund's expected return is 18.07% per year, how often do we expect annual returns between 47.49% and -11.35%? Is a return of 0% or less feasible and/or reasonable?

15. In what market conditions would you want a high beta stock? In what market conditions would you want a low beta stock?
16. In what market conditions would you want a high alpha stock?
17. What should the beta of the inverse ETF ProShares Short S&P 500 ETF (ticker = SH) be? (Hint: You can check your answer by looking up ticker SH on Yahoo! Finance).
18. CHALLENGE Suppose you have 5 funds that you'd like to hold in optimal weights such that your Sharpe ratio is maximized. Is the optimal portfolio *guaranteed* to hold all 5 funds to some degree, or might some of the 5 funds be omitted from the optimal risky portfolio? Consider using the online Portfolio Visualizer tool from the lecture notes and your own choice of 5 risky assets to answer this question.
19. CHALLENGE Explain when we'd see a negative slope for the SCL and a negative intercept for the SCL. Are negative slopes and negative intercepts possible in practice? Could we see both for a stock at the same time?