



**FIN 366: INVESTMENTS**  
**CAPITAL ALLOCATION**  
**CRITICAL THINKING & CONCEPTUAL QUESTIONS**

1. What is the “capital allocation” decision?
2. Explain how T-bills are risk-free if they have a historical standard deviation.
3. A friend tells you “I have 90% of my money in the QQQ index fund, and the rest in cash. You only have 60% of your money in the QQQ index fund and the rest in cash. Clearly my expected return is higher, and my portfolio is superior to yours.” Critique this claim.
4. What determines how much an investor invests in the risky and risk-free portfolios?
5. How many different portfolios are there in the **investment opportunity set** that the CAL graphically depicts?
6. How do we obtain the expected return and standard deviation of the risky portfolio that is needed to compute the expected return and standard deviation of the complete portfolio?
7. What type of assets comprise a portfolio on the CAL?
8. What might we use as the “risky asset”?
9. Is there a “best” portfolio to hold on the CAL?
10. Can you draw and label the CAL?
11. Can you draw and label the CML?
12. What is the slope of the CAL? What is the slope of the CML?
13. Can you derive the slope of the CAL given the coordinates  $(x_2, y_2)$  for the complete portfolio and the coordinates  $(x_1, y_1)$  for the risk-free rate?
14. What can cause the CAL’s slope to increase? (Hint: use the CAL Excel File)
15. What can cause the intercept of the CAL to shift upward? (Hint: use the CAL Excel File)
16. What can “elongate” or “stretch” the CAL? (Hint: use the CAL Excel File)
17. What is the y-intercept of the CAL?
18. What could we use to proxy for the market portfolio on the CML, and why do we need to “proxy” for the market portfolio?
19. If we only know the expected return of the risky portfolio, the standard deviation of the risky portfolio, and the risk-free rate of return, can we find the Sharpe ratio of the *complete* portfolio *without* knowing the weight we put in the risk-free asset?
20. How can two investors have two different CALs?
21. Why do all investors have the same CML?
22. A friend tells you “I have 90% of my money in the QQQ index fund with an expected return of 22%, and the rest in cash. You have 90% of your money in the SPX index fund with an expected return of 14% and the rest in cash. Clearly my portfolio is superior to yours.” Critique this claim.
23. **CHALLENGE Risk Aversion** can vary from person to person. If, for example, you have a higher degree of risk aversion than your friend does, what does that imply about the level

of tolerance you have for a portfolio's risk relative to your friend (assuming the portfolio's return is held constant)?

24. **CHALLENGE** An investor holds some of their money in the Fidelity Small Cap Growth Fund and some of their money in T-bills. Another investor holds some of their money in the Vanguard Large Cap Value Fund and some in T-bills. Do they have the same Sharpe ratio? *Can* they have the same Sharpe ratio? Do these investors lie on the same CAL? Can one of these investors have a better “complete” portfolio than the other just by changing the weights they invest in their risky portfolio?
25. **CHALLENGE** If our Sharpe ratio doesn't change based on how much we invest in the risky portfolio versus how much we invest in the risk-free asset, why does picking different securities, mutual funds, and investments matter at all? (Hint: it does matter!)
26. **CHALLENGE** How many different CALs are possible across different investors? How many different CALs can you as an individual have at a given point in time? How many different CALs can you have across time?

