Financial Markets and Risk
Practice Questions

2014

1. Compare and contrast the various models that researchers use to determine whether active fund managers produce 'alpha'.

2. How do the available models differ from one another and what information is needed to use the models?

3. The following information is given on a composition of portfolio XYZ:

Asset Class	Benchmark Weight	Return in benchmark (%)	Active Weight	Active Return (%)
Equity	0.60	5.75	0.65	8.97
Bond	0.30	1.33	0.20	1.60
Cash	0.10	0.45	0.15	0.45

Define asset allocation, security selection and interaction effect and calculate them for portfolio XYZ. Calculate the total value added for this portfolio.

4. An investor who is testing the presence of styles in a portfolio of stocks obtained the following result of the time-series regression (values in parentheses are t-statistics):

$$R_p = \underset{}{0.025} + \underset{(1.18)}{0.71}R_M - \underset{(5.78)}{1.2}R_{G-V} + \underset{(-3.55)}{0.58}R_{L-S} + \underset{(0.76)}{\varepsilon_p}$$

5. Explain the differences in interpretation for the alpha in the Fama-French (1993) and Carhart (1997) models?

6. The following information is given on a composition of portfolio XYZ:

Asset Class	Benchmark Weight	Return in benchmark (%)	Active Weight	Active Return (%)
Equity	0.65	5.40	0.70	7.85
Bond	0.25	1.40	0.20	1.50
Cash	0.10	0.50	0.10	0.50

Define asset allocation, security selection and interaction effect and calculate them for portfolio XYZ. Calculate the total value added for this portfolio.

7. What is the difference between allocation effect, security selection effect and interaction effect? Use an example of your choice to explain how you would calculate each of these effects in a portfolio and the total value added for that portfolio (i.e. to calculate this, assume benchmark weight for each asset class, return % for each asset class, active portfolio weight for each asset class and active portfolio return % for each asset class).

8. The following information is given on the composition of portfolio ABC:

Asset Class	Benchmark Weight	Return in benchmark (%)	Active Weight	Active Return (%)
Equity	0.55	4.67	0.68	6.87
Bond	0.35	1.25	0.22	1.75
Cash	0.10	0.55	0.10	0.55

Define asset allocation, security selection and interaction effect and calculate them for portfolio ABC. Calculate the total value added for this portfolio.

9. You are given the following information on two UK equity funds:

Fund	Expected Return	Beta	Standard Deviation	Tracking error
Fund 1	8%	0.98	10%	2%
Fund 2	14%	0.57	12%	4%

The risk free rate is 2.5%. The expected return and standard deviation on the FTSE All Share index (which is used as a benchmark for all the funds) are 9% and 11%. Calculate the Information ratio, Jensen's alpha and Treynor ratio for each fund. Comment on the funds' performance relative to the benchmark explaining the measures of performance used.

10. An investor who is testing the presence of styles in a portfolio of stocks obtained the following result of the time-series regression (the values in brackets are t-statistics):

$$R_p = \underset{}{0.015} + \underset{(0.58)}{0.51}R_M + \underset{(5.48)}{1.1}R_{G-V} + \underset{(3.56)}{0.78}R_{L-S} + \underset{(0.76)}{\varepsilon_p}$$

Explain the model that the investor is using to test the presence of styles and interpret the values of style betas obtained. What are the main uses of these style betas?

11. You are given the following information on two UK equity funds:

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Fund 1	8%	0.98	10%	2%
Fund 2	14%	0.57	12%	4%

The risk free rate is 2.5%. The expected return and standard deviation on the FTSE All Share index (which is used as a benchmark for all the funds) are 9% and 11%. Calculate the

Information, Sharpe and Treynor ratios for each fund. Comment on the funds' performance relative to the benchmark explaining the measures of performance used.

12. What are the pros and cons of passive versus active portfolio management?