40 ANALYSIS OF ACTIVE PORTFOLIO MANAGEMENT

1. Which of the following terms is the ex-ante risk weighted correlation between forecasted active returns and actual active returns?
   (A) Breadth
   (B) Transfer Coefficient
   (C) Information Coefficient

2. Which of the following terms is the cross-sectional correlation between forecasted active returns and actual active weights adjusted for risk?
   (A) Transfer Coefficient
   (B) Breadth
   (C) Information Coefficient

3. Charles Griffith makes quarterly bets between stocks of industrial and utility sectors. The historical correlation between the returns of the two sectors is -0.20.Further information is as below:

			Benchmark
Sector	**E (R)**	**σ**	**Weight**
Industrial	12.00%	13.0%	80%
Utility	5.2%	2.5%	20%

The annualized active risk of Griffith's strategy is closest to:
   (A) 27.44%
   (B) 13.72%
   (C) 10.90%

4. An active manager makes quarterly bets on the stocks in the Russell 2000 index and uses the index as the benchmark. The manager claims a modest IC of 0.02 using a stock screening model. Sam Fox, CFA makes the following two statements:
   I. The bets on the 2000 stocks in the index is not independent as the screens by definition introduce dependency in the decision process.
   II. The quarterly bets are likely to be independent.
   How many of Fox's statements are correct:
   (A) Only one statement is correct.
   (B) Neither statement is correct.
   (C) Both statements are correct.

5. Jon Gamlin is comparing a market timing strategy with a stock selection strategy. He draws the following two conclusions for unconstrained active managers:

Conclusion 1

To achieve the same information ratio, a market timer making weekly forecasts on the movement of the market needs to have a higher skill level than a stock selector following 25 stocks and updating the forecast semi-annually

Conclusion 2

A specialist following only 4 stocks who revises his forecast 100 times per year will achieve the same information ratio as a stock selector with the same skill level who follows 50 stocks and updates his assessments semi-annually

Regarding Gamlin's conclusions:

(A) Neither conclusion is correct.
(B) Only conclusion 1 is correct.
(C) Only conclusion 2 is correct.

6. How many of Mithai's comments are correct in relation to the comparison between Galab and Phasar?

(A) One.
(B) Both.
(C) None.

7. The expected active return generated by the hypothetical fund described in Exhibit 2 is:

(A) 3.12%.
(B) 4.68%.
(C) 8.20%.

8. Which of the following statements is least accurate?

(A) The information ratio of a constrained active portfolio is unaffected by aggressiveness of the active weights.
(B) Unlike Sharpe ratio, information ratio is affected due to addition of cash or leverage.
(C) Sharpe ratio of a portfolio consisting of a combination of benchmark and actively managed portfolio with positive active return will be higher than the Sharpe ratio of the benchmark.

9. An active manager expects his information coefficient to drop from 0.08 to 0.02 in the coming period due to extremely volatile and unpredictable markets. As a response he intends to increase his breadth by a factor of 4. Which of the following statements is most accurately describes the impact on the information ratio?

(A) The information ratio will increase
(B) The information ratio will remain constant
(C) The information ratio will decrease

Sundar Mithai, CFA, is a fund manager for Pearl Investments and makes a monthly

report to the firm's partners. Mithai mentions two active managers in his report, Galab and Phasar. Exhibit 1 provides additional information on the two managers:

Exhibit 1: Selected Information on Galab and Phasar

	Galab	Phasar
Information coefficient	0.22	0.37
Transfer coefficient	0.8	0.73
Active risk	5.6%	6.6%
Active return	10.8%	9.2%

Mithai makes the following comments regarding the two active managers:

Comment 1: The investment mandate of Phasar appears to be less constrained relative to Galab.

Comment 2: Galab appears to have better skill at predicting returns.

Mithai recently decided to give all the analysts at the firm a refresher on the fundamental law of active portfolio management. Details of a hypothetical unconstrained fund is shown in Exhibit 2.

Exhibit 2: Hypothetical Fund

Information coefficient	0.14
Monthly active bets	5
Active risk	4.32%

10. According to the fundamental law of active management, how many forecasts is Galab making per month?
    (A) 3.
    (B) 10.
    (C) 36.

11. If the hypothetical fund described in Exhibit 2 was subject to investment constraints, its expected active return would be expected to:
    (A) rise.
    (B) fall.
    (C) remain unchanged.

12. Which of the following statements is least accurate?
    (A) Investors can take active risk that is suitable for them by investing in a combination of actively managed portfolio and benchmark portfolio.
    (B) A closet index fund has a low Sharpe ratio.
    (C) The Sharpe ratio of a portfolio is unaffected by addition of cash or leverage in the portfolio.

13. An active manager has an information coefficient of 0.08, transfer coefficient of 0.50, and makes 100 independent bets per year. What is the expected active return for an active risk constraint of 5%?

(A) 1.8%

(B) 2.0%

(C) 2.4%

14. Tom Grenkin is a market timer with an information ratio of 0.75. He makes a prediction of the movement in the market each quarter. Jane Fortina is a stock selector who follows 50 companies and revises her assessment each quarter. She also has an information ratio of 0.75. Assuming both managers have unconstrained portfolios, which of the following statements regarding the two managers is most accurate?

(A) As Fortina's strategy has a much larger breadth, she must have a larger information coefficient than Grenkin.

(B) As both managers have the same information ratio, they must also have the same to information coefficient.

(C) As Grenkin makes fewer bets per year, he requires a higher information coefficient on each bet than Fortina to achieve the same information ratio.

15. Zeta fund has active return and active risk of 1.6% and 8% respectively. Benchmark portfolio has a Sharpe ratio of 0.35 and standard deviation of benchmark returns is 10.5%.

The maximum possible Sharpe ratio of a portfolio consisting of Zeta fund and the benchmark portfolio is closest to:

(A) 0.55

(B) 0.5

(C) 0.4

16. Which of the following is correct for an unconstrained active portfolio?

(A) TC=1

(B) TC<1

(C) TC>1

17. Charles Griffith makes quarterly bets between stocks of industrial and utility sectors. Griffith's strategy has an annualized active risk of 18%. Based on the information below, If Griffith wants to limit his active risk to 6%, what is the allocation to Utility sector when Griffith is bullish about Industrial stocks?

Benchmark

Sector	Weight
Industrial	80%
Utility	20%

(A) 14%

(B) –13%

(C) 5%

18. Which of the following statements regarding the information ratio of an unconstrained portfolio is most likely correct?

(A) A market timer who uses independent information to make predictions about market movements on a monthly basis and has an information ratio of 0.20 must have an information coefficient lower than a stock selector with the same information ratio who follows 10 stocks and revises his forecast quarterly

(B) A market timer who uses independent information to make predictions about market movements on a monthly basis and has an information ratio of 0.20 must have an information coefficient equal to a stock selector with the same information ratio who follows 10 stocks and revises his forecast quarterly

(C) A market timer who uses independent information to make predictions about market movements on a monthly basis and has an information ratio of 0.20 must have an information coefficient higher than a stock selector with the same information ratio who follows 10 stocks and revises his forecast quarterly

19. Zeta fund has active return and active risk of 1.6% and 8% respectively. Benchmark portfolio has a Sharpe ratio of 0.35 and standard deviation of benchmark returns is 10.5%.

What is the level of active risk that an investor would need to take to maximize the Sharpe ratio of a portfolio consisting of Zeta fund and the benchmark portfolio?

(A) 7%

(B) 8%

(C) 6%

20. Susan Thomas is evaluating the holdings of Primus fund. Based on the information below, the estimated active return is closest to:

Security (i)	Portfolio Weight (w_{Pi})	Benchmark Weight (w_{Bi})	Return E(R_i)
x	30%	40%	11.20%
y	15%	25%	4.25%
z	55%	35%	14.00%
Total	100%	100%	

(A) 1.26%

(B) 1.77%

(C) 0.44%

21. Zeta fund has active return and active risk of 1.6% and 8% respectively. Benchmark portfolio has a Sharpe ratio of 0.35 and standard deviation of benchmark returns is 10.5%.
What is the weight of benchmark portfolio in a portfolio consisting of Zeta fund and the benchmark portfolio assuming that the portfolio is constructed to have optimal active risk?
(A) 0.1667
(B) 0.25
(C) 0.2

22. An active manager has an information coefficient of 0.05 and makes 36 independent bets per year. What is the manager's information ratio given a transfer coefficient of 0.75?
(A) 0.23
(B) 1.35
(C) 0.45

23. When choosing an active manager, an investor with a high level of risk aversion:
(A) will choose a manager with the lowest active risk.
(B) will choose the manager with the highest active return.
(C) will choose the manager with the highest information ratio.

24. Pamela Grieve claims that her information coefficient is 0.20 on monthly bets on 10 stocks in the healthcare industry. Assuming unconstrained optimization, the reduction in her information ratio if her bets have a correlation coefficient of 0.45 as opposed to being truly independent is closest to:
(A) 45%
(B) 86%
(C) 22%

25. Charles Griffith makes quarterly bets between stocks of industrial and utility sectors. The historical correlation between the returns of the two sectors is –0.20 and Griffith's bets have been correct 55%

			Benchmark
Sector	**E (R)**	**σ**	**Weight**
Industrial	12.00%	13.0%	80%
Utility	5.2%	2.5%	20%

The expected annualized active return of Griffith's sector rotation strategy is closest to:
(A) 13.72%
(B) 5.48%
(C) 10.64%

26. An active manager has an information coefficient of 0.07, transfer coefficient of 0.90, and

makes 49 independent bets per year. Benchmark portfolio has a Sharpe ratio of 0.40 and standard deviation of benchmark returns is 12%. The optimal amount of active risk is closest to:

(A) 8%

(B) 14%

(C) 6%

27. Which of the following terms is the number of independent bets per year made by an active manager?

(A) Information Coefficient

(B) Transfer Coefficient

(C) Breadth

Ufton Wealth Management's Ranger fund has proved popular with clients. An extract from the prospectus of the Ranger fund is shown in Exhibit 1.

Exhibit 1: Ranger Fund

Asset	Portfolio weight	Benchmark weight	Expected portfolio return	Expected benchmark return
U.S. equities	15%	20%	11%	9%
U.S. corporate bonds	35%	35%	8%	7%
International equities	8%	40%	14%	10%
U.S. real estate	42%	5%	7%	7%

Ufton awards its best performing fund manager with a large cash bonus each year. Details of the performance of three funds is shown in Exhibit 2. Risk-free rate is 2%.

Exhibit 2: Selected Fund Performance

Fund	Portfolio return	Benchmark return	Portfolio standard deviation	Benchmark standard deviation	Sharpe ratio	Tracking error
Saltire	8.46%	5.80%	6.13%	4.50%	1.05	1.58%
Dragon	13.01%	11.56%	7.64%	5.15%	1.44	2.12%
Rose	11.39%	11.37%	11.01%	11.14%	0.85	0.21%

28. The expected level of active return expected to be achieved by the Ranger fund is closest to:

(A) – 9.00%.

(B) – 0.09%.

(C) + 3.49%.

29. The largest positive contribution to the active return achieved by the Ranger fund is expected to come from:
    (A) security selection.
    (B) asset allocation.
    (C) Cannot tell from the information available.

30. In relation to funds Alpha, Bankso, and Crystal, the highest achievable Sharpe ratio is closest to:
    (A) 0.85.
    (B) 0.90.
    (C) 0.95.

31. If the FTSE 100 and Crystal fund are combined in an optimal portfolio, what proportion should be invested in Crystal?
    (A) 136%.
    (B) 146%.
    (C) 156%.

32. How many of Radichkova's comments are correct in relation to the two-sector portfolio?
    (A) One.
    (B) Both.
    (C) None.

33. Which are the correct definitions of the transfer coefficient included in Radichkova's report?
    (A) 1 and 2.
    (B) 2 and 3.
    (C) 1 and 3.

34. Helen Wilde is trying to estimate the active return of Optimal fund. A comparison of Optimal's holdings and that of the benchmark are shown below:

Asset Class (i)	Optimal Weight (w_{Pi})	Benchmark Weight (w_{Bi})	Optimal Return $E(R_{Pi})$	Benchmark Return $E(R_{Bi})$
Industrials	30%	40%	11%	12%
Financials	50%	30%	6%	5%
Utilities	20%	30%	14%	12%

The expected active return for Optimal is closest to:
    (A) – 1.40%
    (B) – 0.80%
    (C) – 0.44%

35. Helen Wilde is trying to estimate the active return of Optimal fund. A comparison of Optimal's holdings and that of the benchmark are shown below:

Asset Class (i)	Optimal Weight (w_{Pi})	Benchmark Weight (w_{Bi})	Optimal Return $E(R_{Pi})$	Benchmark Return $E(R_{Bi})$
Industrials	30%	40%	11%	12%
Financials	50%	30%	6%	5%
Utilities	20%	30%	14%	12%

The expected active return due to asset allocation for Optimal is closest to:

(A) – 0.86%

(B) – 0.44%

(C) – 1.40%

36. An active manager currently covers 40 stocks and makes a forecast for each of them every quarter. Next year he intends to cover the same stocks but only once every 6 months. Assuming the re manager's skill, measured in terms of the correlation of each forecast with actual returns doesn't change, which of the following statements is most accurate?

(A) The information ratio will fall by approximately

(B) The information coefficient will fall by approximately 50%

(C) The information ratio will fall by approximately 30%

37. Which of the following is correct for a constrained active portfolio?

(A) TC=1

(B) TC<1

(C) TC>1

38. Alisa Darent is evaluating several active portfolio managers with the same style and benchmark portfolio.

Manager	Active return	Active risk
Alfred	3.00%	12.00%
Brad	2.20%	11.00%
Charles	2.00%	10.50%

Benchmark return is expected to be 11%. What will be the maximum expected return for Darent's portfolio assuming that she wants to limit her active risk to 11%?

(A) 2.20%.

(B) 13.75%

(C) 2.75%

39. Of the three funds described in Exhibit 2, the fund with the highest information ratio is:
    (A) Saltire.
    (B) Dragon.
    (C) Rose.

40. Of the three funds described in Exhibit 2, the most likely to be a closet index fund is:
    (A) Saltire.
    (B) Dragon.
    (C) Rose.