

Question 1 of 9

A manager of an equity index-based fund is *least likely* to reduce tracking error against the index by:

- A. using full replication.
- B. minimizing cash drag.
- C. increasing management fees.

QUESTION 2 - 5

Hedwig Kozak was recently hired as a PM by a financial institution. Kozak was brought in to create index-based investment products that will complement the firm's open-end mutual funds business. She is meeting with Denzel Exham, the firm's CIO. Kozak and Exham discuss developing an ETF business with their firm acting as an ETF sponsor. During the discussion, Exham makes the following statements regarding his understanding of indexed-based ETFs:

- Statement 1:** All factor-based index-tracking ETFs are characterized as return-oriented since inclusion in an index is always based on factors such as sustained earnings growth or price momentum, which investment research has identified as primary drivers of higher returns.
- Statement 2:** ETFs can be created to track any factor-based index, although the optimal approach regarding portfolio construction depends on a variety of factors related to the number of index constituents, the liquidity of those securities, and the size of the ETF.

Kozak mentions to Exham that equity derivatives can be used to improve ETF operating efficiency with respect to reducing expenses and tracking error. Exham states that he is not knowledgeable about derivatives and that the firm has not previously used them. Kozak describes equity-index futures and equity swaps, addressing their potential uses in managing risk-return characteristics as well as the relative advantages and disadvantages of each and their use for ETFs that track both traditional indexes and factor-based indexes.

The conversation moves on to discussing various approaches to constructing portfolios for traditional cap-weighted and style-based index-tracking ETFs. During this discussion, Kozak makes the following comments about issues related to portfolio construction:

- Comment 1:** Since index returns are adjusted to reflect trading costs incurred by index funds, structuring the portfolio to keep expenses low will help our index-tracking ETF outperform its benchmark.
- Comment 2:** To minimize cost and tracking error for an ETF designed to track the total US equity market, the most appropriate portfolio construction is to use stratified sampling for large-cap funds and use full replication for mid- and small-cap funds.

Question 2 of 9

Which of Exham's statements is (are) *most likely* correct?

- A. Only Statement 1
- B. Only Statement 2
- C. Both Statement 1 and Statement 2

Question 3 of 9

Compared to trading only cash market stocks in managing an index fund, which of the following is *least likely* an advantage of equity-index futures?

- A. Lack of counterparty risk
- B. Access to greater leverage
- C. Trading cost of replicating index

Question 4 of 9

When equitizing cash for ETFs designed to track factor-based indexes, which of the following is *most likely* an advantage of equity swaps over equity index futures? Equity swaps:

- A. can be structured so the underlying is the factor-based index.
- B. are more liquid, allowing more flexibility in managing cash drag.
- C. have more counterparty risk since swap collateral is less than futures margins.

Question 5 of 9

Which of Kozak's comments is *most likely* correct?

- A. Comment 1 only
- B. Comment 2 only
- C. Neither Comment 1 nor Comment 2 are correct

Question 6 of 9

Which of the following is *least likely* a potential advantage of ETFs compared to mutual funds?

- A. ETFs are more liquid.
- B. ETFs can be sold short.
- C. ETFs are more tax-efficient.

Question 7 of 9

To minimize tracking error, which of the following management tactics is *least appropriate*?

- A. Stratified sampling
- B. Market-on-close orders
- C. Synthetic equitization of cash

Question 8 of 9

Relative to broad market-cap-weighted indexes, index-based factor strategies *most likely*:

- A. concentrate risk.
- B. allow ease of replication.
- C. encourage single-factor indexes.

Question 9 of 9

In an indexed equity fund, which of the following is *most likely* to increase tracking error?

- A. Full replication
- B. Intraday trading
- C. Cash equitization using derivatives