CHAPTER 34

SECURITY MARKET INDEXES

1. (C) **a market-cap weighted index must be adjusted for stock splits but not for dividends.**

Explanation

A price-weighted index needs to be adjusted for stock splits, but a market-cap weighted index does not. Neither type of index considers dividend income unless it is designed as a total return index.

Price weighting produces a downward bias compared to market weighting because firms that split their stocks (which tend to be the more successful firms) decrease in weight within a price-weighted index. The returns on a price-weighted index can be matched by purchasing a portfolio with an equal number of shares of each stock in the index.

(Study Session 11, Module 34.1, LOS 34.d)

Related Material

SchweserNotes - Book 3

2. (C) **8.33%.**

Explanation

Expand the table as follows:

	As of Beginning of Year 1			As end of Year 1		
Stock	**Price Per Share (in $)**	**# Shares Outstanding**	**Market Capitalization (in $)**	**Price Per Share (in $)**	**Shares Outstanding**	**Market Capitalization (in $)**
Lair	15	10,000	150,000	10	10,000	100,000
Kurlew	45	5,000	225,000	60	5,000	300,000
Mowe	90	500	45,000	110	500	55,000
Total	150		420,000	180		455,000

First, we will calculate the year-end market-cap weighted index value, then we will calculate the return percentage.

Value of market-cap weighted index = [(market capitalization$_{\text{year-end}}$) / (market capitalization $_{\text{beginning of year}}$)] x Beginning index value

= (455,000 / 420,000) x 100 = 108.33

One-Year Return = [(Index value $_{\text{year-end}}$ / Index value $_{\text{beginning of year}}$) – 1] x 100

= [(108.33 / 100) - 1] x 100 = **8.33%.**

(Study Session 11, Module 34.1, LOS 34.e)

Related Material

SchweserNotes - Book 3

3. (B) MSCI All Country World Index.

Explanation

The MSCI All Country World Index is a market capitalization weighted index. The Dow Jones Industrial Average and the Nikkei Stock Average are price-weighted indexes.

(Study Session 11, Module 34.2, LOS 34.k)

Related Material

SchweserNotes - Book 3

4. (A) **Because some fixed income securities are illiquid, indexes may include estimates of value.**

Explanation

Because some fixed income securities are illiquid, a lack of recent trade prices may result in indexes having to estimate values. Unlike stocks, bonds mature and must be replaced in fixed income indexes. As a result turnover is higher in fixed income indexes. Illiquidity, transaction costs, and high turnover make it more expensive and difficult for a portfolio manager to replicate a fixed income index than a stock index.

(Study Session 11, Module 34.2, LOS 34.i)

Related Material

SchweserNotes - Book 3

5. (B) **Price weighted index.**

Explanation

When computing any price-weighted index, the denominator must be adjusted to take stock splits into account.

For Further Reference:

(Study Session 11, Module 34.1, LOS 34.d)

CFA® Program Curriculum, Volume 4, page 200

Related Material

SchweserNotes - Book 3

6. (B) **an upward bias in hedge fund index returns.**

Explanation

Empirical studies have shown that since hedge fund managers have the option to report performance results only funds with good results will report. Since funds with poor performance do not report their results, the results of hedge fund indexes will be biased upwards.

(Study Session 11, Module 34.2, LOS 34.j)

Related Material

SchweserNotes - Book 3

7. (C) Hedge funds.

Explanation

Most hedge fund indexes are equal-weighted. Equity and fixed income indexes are predominately market capitalization weighted.

(Study Session 11, Module 34.2, LOS 34.k)

Related Material

SchweserNotes - Book 3

8. (B) 77.

Explanation

The market-cap weighted index = [(($1)(5,000) + ($20)(2,500) + ($60) (1,000))/ $150,000](100)

= ($115,000/$150,000)(100)

= (0.767)(100)

= 76.67 or 77

(Study Session 11, Module 34.1, LOS 34.e)

Related Material

SchweserNotes - Book 3

9. (B) 1,200.

Explanation

The index value at the end of June is

1,200(1.0389)(1.0876)(0.9526)(1.0688)(0.9461)(0.9188) = 1,200.

Note that the compound rate of return is

(1.0389)(1.0876)(0.9526)(1.0688)(0.9461)(0.9188) - 1 = 0.

(Study Session 11, Module 34.1, LOS 34.b)

Related Material

SchweserNotes - Book 3

10. (B) futures contracts.

Explanation

The constituent securities of commodity price indexes are commodity futures contracts. As a result, the return on a commodity index can be different than the returns from holding the constituent commodities themselves.

(Study Session 11, Module 34.2, LOS 34.j)

Related Material

SchweserNotes - Book 3

11. (B) 10.2%.

Explanation

Return for the year = (1.03)(1.04)(0.98)(1.05) – 1 = 10.23%.

(Study Session 11, Module 34.1, LOS 34.b)

Related Material

SchweserNotes - Book 3

12. (A) style index.

Explanation

An index of value stocks is an example of a style index. Sector indexes measure the performance of securities in specific industries or industry sectors. Fundamental weighting is used to weight indexes by a factor such as the size of the firms or economies represented in the index.

(Study Session 11, Module 34.2, LOS 34.h)

13. (B) lack of continuous trade data for bonds.

Explanation

It is difficult to price individual bond issues in an index because continuous trade data may not exist for some bonds. In addition, it is challenging to create a bond market index because the bond universe is much broader, and the price volatility of a bond (i.e., its duration) changes over time as the bond approaches maturity.

For Further Reference:

(Study Session 11, Module 34.2, LOS 34.i)

CFA® Program Curriculum, Volume 4, page 216

Related Material

SchweserNotes - Book 3

14. (B) The Nikkei Dow Index.

Explanation

The Nikkei Dow Index is a price-weighted index. The other two are market value-weighted indexes.

(Study Session 11, Module 34.2, LOS 34.k)

Related Material

SchweserNotes - Book 3

15. (A) number of securities in the index.

Explanation

A market index does not necessarily have to consist of a fixed number of securities. For example, some indices are defined to include all the stocks that trade on a certain exchange, a number that can vary over time.

(Study Session 11, Module 34.1, LOS 34.c)

Related Material

SchweserNotes - Book 3

16. (A) 129.5.

Explanation

First calculate the return relatives and then find the mean of the relatives. The number of shares is irrelevant in this question.

5/5 = 1

12.5/10 = 1.25

10/7.50 = 1.33

8/5 = 1.60

(1 + 1.25 + 1.33 + 1.60) / 4 = 1.295

100 x 1.295 = 129.5

(Study Session 11, Module 34.1, LOS 34.e)

Related Material

SchweserNotes - Book 3

17. (B) market or segment the index is designed to measure.

Explanation

The target market of an index is the securities market or portion of a securities market that the index will be designed to represent. The securities from the target market that are included in the index are called its constituent securities.

(Study Session 11, Module 34.1, LOS 34.c)

Related Material

SchweserNotes - Book 3

18. (A) The bond universe is more stable than the stock universe.

Explanation

One reason why the creation of a bond index is more difficult than a stock index is due to the fact that the universe of bonds is constantly changing because of numerous new issues, bond maturities, calls, and bond sinking funds.

(Study Session 11, Module 34.2, LOS 34.i)

Related Material

SchweserNotes - Book 3

19. (C) style index.

Explanation

The index selected as a benchmark for manager performance should represent the investment universe from which the manager actually selects stocks. If the manager only invests in value stocks, then the most appropriate index is a style index that seeks to represent the returns from a value strategy. A sector index is appropriate for managers who invest in specific sectors (e.g., technology stocks, emerging market bonds).

(Study Session 11, Module 34.2, LOS 34.g)

Related Material

SchweserNotes - Book 3

20. (B) Value weighted.

Explanation

Value-weighted (market-capitalization weighted) index weights may be based on the total value of shares available for investment (the market float) rather than on all the outstanding shares of a firm.

For Further Reference:

(Study Session 11, Module 34.1, LOS 34.d)

CFA® Program Curriculum, Volume 4, page 200

Related Material

SchweserNotes - Book 3

21. (A) 7 150

Explanation

Price weight = [(4) + (10)] / 2 = 7

Market-cap weight = [(4)(50) + (10)(10)] / [(2)(50) + (10)(10)](100) = 150

(Study Session 11, Module 34.1, LOS 34.e)

Related Material

SchweserNotes - Book 3

22. (A) Dow Jones Industrial Average and Nikkei Dow Jones Stock Market Average.

Explanation

The Dow Jones World Stock Index, the Russell Index, the S&P 500 Index, and Morgan Stanley Capital International Index are all market-value weighted. Only the Dow Jones Industrial Average and the Nikkei Dow Jones Stock Market Averages are price-weighted.

(Study Session 11, Module 34.2, LOS 34.k)

Related Material

SchweserNotes - Book 3

23. (C) 110.6

Explanation

Market-cap weighted index = (ending market capitalization / beginning market capitalization) x beginning index value.

Beginning market capitalization = (10)(10,000) + (50)(5,000) + (100)(500) = 400,000

Ending market capitalization = (15)(10,000) + (50)(5,000) + (85)(500) = 442,500

Index value = (442,500 / 400,000) x 100 = 110.625

(Study Session 11, Module 34.1, LOS 34.e)

Related Material

SchweserNotes - Book 3

24. (C) increase.

Explanation

Adding a security to a market index typically causes an increase in that security's price as portfolio managers who track the index purchase the security.

(Study Session 11, Module 34.2, LOS 34.f)

Related Material

SchweserNotes - Book 3

25. (C) the market return.

Explanation

The return on a security market index can be used as a proxy for the market return in a pricing model such as the CAPM.

(Study Session 11, Module 34.2, LOS 34.g)

Related Material

SchweserNotes - Book 3

26. (A) have a value tilt.

Explanation

Compared to the S&P 500 index, which is market cap weighted, an index that is weighted based on fundamentals will have a value tilt. Firms that have a higher earnings weight than market cap weight will be those with higher earnings yields. Weights are based on firm earnings, not earnings per share.

For Further Reference:

(Study Session 11, Module 34.1, LOS 34.d)

CFA® Program Curriculum, Volume 4, page 200

Related Material

SchweserNotes - Book 3

27. (B) 65.

Explanation

The price-weighted index equals [(50 + 35 + 110) / 3] = 65.

(Study Session 11, Module 34.1, LOS 34.e)

Related Material

SchweserNotes - Book 3

28. (A) Bond deviations tend to be relatively constant.

Explanation

Bond prices are quite volatile as measured by the bond's duration.

(Study Session 11, Module 34.2, LOS 34.i)

Related Material

SchweserNotes - Book 3

29. (A) **reconstitution.**

Explanation

Reconstitution refers to changing the securities that make up an index. Reconstitution of an index is required if one of its constituent securities goes out of existence (for example, a maturing bond or an expiring futures contract) or no longer meets the requirements to be included in the index.

(Study Session 11, Module 34.2, LOS 34.f)

Related Material

SchweserNotes - Book 3

30. (A) **removing some securities from the index and adding others.**

Explanation

Reconstitution begins with evaluating the securities in an index against the index's criteria. Securities that are no longer representative of the index are removed and replaced with different securities that do meet the criteria. Adjusting the weights of the securities that constitute an index is termed rebalancing.

(Study Session 11, Module 34.2, LOS 34.f)

Related Material

SchweserNotes - Book 3

31. (A) **Both of these analysts.**

Explanation

Because of the wide universe of bonds that trade in financial markets, indexes are available (or can be constructed) based on virtually any feature or classification of bonds.

(Study Session 11, Module 34.2, LOS 34.i)

Related Material

SchweserNotes - Book 3

32. (D) **Weighting methodology varies among index providers and leads to differences in index risk and returns.**

Explanation

Weighting methodology is a major issue for commodity indexes. Several different methodologies are used, including equal weighting and global production values. Differences in weighting cause differing exposures for the indexes and lead to different risk and return profiles.

Commodity indexes represent futures contracts on commodities, not the actual spot prices of commodities. Commodity index returns come from three sources: the risk-free rate of return, changes in futures prices, and the roll yield.

(Study Session 11, Module 34.2, LOS 34.j)

Related Material

SchweserNotes - Book 3

33. (B) sector index.

Explanation

A sector index measures the returns for an industry sector such as financials. Style indexes measure the returns to strategies that are differentiated by market capitalization and by value or growth. A broad market index typically consists of constituent securities that represent 90% or more of the total market capitalization for a given market.

(Study Session 11, Module 34.2, LOS 34.h)

Related Material

SchweserNotes - Book 3

34. (A) an index that matches the manager's investment approach.

Explanation

An index chosen as a benchmark for an investment manager's performance should include securities in the manager's investment universe. For example, the performance of an emerging market bond fund manager should be measured relative to the performance of an emerging market bond index.

(Study Session 11, Module 34.2, LOS 34.g)

Related Material

SchweserNotes - Book 3

35. (B) target market.

Explanation

The first decision that must be made is choosing the target market the index will represent. Only then can the index provider determine which constituent securities should be included and which weighting scheme is most appropriate to measure the target market's returns.

(Study Session 11, Module 34.1, LOS 34.c)

Related Material

SchweserNotes - Book 3

36. (A) earnings.

Explanation

Fundamental-weighted indexes, such as those weighted on earnings, dividends, or book values, tend to weight value stocks more heavily than growth stocks.

For Further Reference:

(Study Session 11, Module 34.1, LOS 34.d)

CFA® Program Curriculum, Volume 4, page 200

Related Material

SchweserNotes - Book 3

37. (A) **inappropriate, because the index does not reflect the actual bonds in which the fund invests.**

Explanation

Security market indexes may be used as benchmarks for the performance of active managers, but the index chosen should represent the universe of securities from which the manager is choosing. Here, an index of high yield bonds would be a more appropriate benchmark.

For Further Reference:

(Study Session 11, Module 34.2, LOS 34.f)

CFA® Program Curriculum, Volume 4, page 209

Related Material

SchweserNotes - Book 3

38. (B) **Price-weighted series.**

Explanation

Firms that split their stock price will have the identical weight before and after the split in both the unweighted and the market value-weighted series. However, in the price-weighted series, large successful firms will lose weight within the index due to simply splitting their stock. This creates a downward bias in a price-weighted series. Standard and Poor's 500 Index is a market value-weighted index.

(Study Session 11, Module 34.1, LOS 34.d)

Related Material

SchweserNotes - Book 3

39. (B) **An index may reflect dividends paid by its constituent securities.**

Explanation

An index that is designed to measure total return will include dividends in its calculation. Some security market indices use estimated prices when actual prices are not available. The percent change in a security market index is the return on a portfolio of its constituent securities. Whether this represents an estimate of the market return depends on the nature and purpose of the index (for example, a security market index may be designed to represent a particular industry or asset class).

(Study Session 11, Module 34.1, LOS 34.d)

Related Material

SchweserNotes - Book 3

CO

40. (B) fundamental-weighted index.

Explanation

An index based on company fundamentals, for example on earnings or book value, will assign more weight to stocks with low P/E or price-to-book ratios compared to a value-weighted index. This is similar to managing an equity portfolio using a value strategy.

(Study Session 11, Module 34.1, LOS 34.e)

Related Material

SchweserNotes - Book 3

41. (B) An equal dollar investment is made in each stock in the index.

Explanation

An equal weighted price indicator series assumes that an equal dollar investment is made in each stock in the index. All stocks carry equal weight regardless of their price or market value.

(Study Session 11, Module 34.1, LOS 34.d)

Related Material

SchweserNotes - Book 3

42. (C) A price-weighted index assumes an equal number of shares (one of each stock) represented in the index.

Explanation

The descriptions of value weighted and unweighted indexes are switched. The denominator of a price-weighted index must be adjusted to reflect stock splits and changes in the sample over time. A market value-weighted series assumes you make a proportionate market value investment in each company in the index.

(Study Session 11, Module 34.1, LOS 34.d)

Related Material

SchweserNotes - Book 3

43. (B) constituent securities have paid dividends.

Explanation

The difference between a price and total return index is that cash distributions are included in a total return index. The two will differ when the constituent securities make cash distributions over the period. Otherwise, the two versions will be the same.

(Study Session 11, Module 34.1, LOS 34.b)

Related Material

SchweserNotes - Book 3

44. (B) **can be calculated by multiplying the beginning value by the geometrically linked series of periodic total returns.**

Explanation

The value of a total return index can be calculated by multiplying the beginning value by the geometrically linked series of index total returns. The value of a total return index includes both the price changes of the securities that constitute the index and any cash flows from the securities (dividends, interest, and other distributions). A total return index cannot increase at a slower rate (or decrease at a faster rate) than an otherwise identical price return index because cash flows from the securities cannot be negative.

(Study Session 11, Module 34.1, LOS 34.b)

Related Material

SchweserNotes - Book 3

45. (B) **the percent change in the index value.**

Explanation

Percentage changes in the value of a security market index over time represent the performance of the market, segment, or asset class from which the securities are chosen.

(Study Session 11, Module 34.1, LOS 34.a)

Related Material

SchweserNotes - Book 3

46. (C) **less than the price index if the price index increases and greater than the price index if the price index decreases.**

Explanation

A price index only includes the prices of the constituent securities in the calculation of the index value. A total return index includes the prices and the dividends paid in the calculation of the index value. If all of the constituents are non-dividend paying stocks, then the total return index will be the same as the price index at the end of the year. Otherwise the total return index will be greater than the price index.

(Study Session 11, Module 34.1, LOS 34.b)

Related Material

SchweserNotes - Book 3

47. (A) **total return.**

Explanation

The total return on a security market index includes cash flows from the securities (dividends and interest) as well as price changes. Price return only accounts for changes in the price of the security. Cash flow return (or yield) refers to the internal rate of return of a portfolio.

(Study Session 11, Module 34.1, LOS 34.b)

Related Material

SchweserNotes - Book 3

48. (A) A 100% increase in the stock price of Company A will have a smaller impact on the price-weighted index than a 100% increase in the stock price of Company C.

Explanation

A 100% change in the stock price of Company C will have a larger impact than a 100% change in either stocks A or B on the price-weighted index. A price-weighted index adds together the market price of each stock in the index and then divides this total by the number of stocks in the index. The price-weighted index assumes you purchase one share of each stock represented in the index. The price-weighted index is influenced most by given percentage changes in the higher priced stocks.

(Study Session 11, Module 34.1, LOS 34.e)

Related Material

SchweserNotes - Book 3