

## **Learning Module 2: Security Market Indices**

Q.103 A Dow Jones ETF was \$117 exactly one year ago. It is now at \$128 and has paid a \$3 dividend. The Dow Jones ETF's price return is *closest to*:

- A. 8.6%.
- B. 9.4%.
- C. 11.9%.

The correct answer is **B**.

Price return doesn't include dividend payment. (Only the total return includes it)  
Therefore;

$$\frac{128 - 117}{117} = 9.4\%$$

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (b) Calculate and interpret the value, price return, and total return of an index.***

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Q.104 A price-weighted index is composed of 3 stocks. Stock A is trading at \$221, stock B at \$51 and stock C at \$42. One year later, stock A is now worth \$159, stock B is \$71, and stock C is \$45. The total return for this index is *closest to*:

- A. -12.42%.
- B. -14.18%.
- C. 18.15%.

The correct answer is **A**.

The total return can be calculated as follows:

$$\begin{aligned}T_0 &= \frac{(\$221 + \$51 + \$42)}{3} = 104.6667 \\T_1 &= \frac{(\$159 + \$71 + \$45)}{3} = 91.6667 \\\text{Total return} &= \frac{(91.6667 - 104.6667)}{104.6667} = -12.42\%\end{aligned}$$

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (b) Calculate and interpret the value, price return, and total return of an index.**

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Q.106 An equal-weighted index is composed of 3 stocks. Stock A is trading at \$53, stock B at \$75 and stock C at \$81. One year later, stock A is now worth \$41, stock B is \$76, and stock C is \$128. The total return for this index is *closest to*:

- A. 12.24%.
- B. 81.99%.
- C. 166.50%.

The correct answer is **A**.

In an equal-weighted index, we assume that we put the same amount of money in each stock.

$$\begin{aligned}\text{Stock A's return} &= \frac{(41 - 53)}{53} = -22.64\% \\ \text{Stock B's return} &= \frac{(76 - 75)}{75} = 1.33\% \\ \text{Stock C's return} &= \frac{(128 - 81)}{81} = 58.02\% \\ \text{Equal-weighted return} &= \frac{(-22.64\% + 1.33\% + 58.02\%)}{3} = 12.24\%\end{aligned}$$

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (e) Calculate and analyze the value and return of an index given its weighting method.**

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Q.107 A capitalization-weighted index is composed of 2 stocks. Stock A is trading for \$75, and stock B is trading for \$51. If there are 6 million shares outstanding in stock A, and 13 million shares outstanding in stock B, then the index value is *closest to*:

- A. 47.59
- B. 58.58
- C. 60.70

The correct answer is **C**.

The index value is obtained by adding up the market value of the stocks in an index, whereas the market value of a capitalization-weighted index is obtained by dividing the price of a share by the number of the stock's outstanding shares.

Recall that in market-capitalization weight of security i is:

$$w_i^W = \frac{Q_i P_i}{\sum_{j=1}^N Q_j P_j}$$

Where:

$w_i$  = fraction of the portfolio that is allocated to security i or weight of security i

$Q_i$  = number of shares outstanding of security i

$P_i$  = share price of security i.

N = number of securities in the index.

Stock A's market capitalization =  $\$75 \times 6,000,000$  shares =  $\$450,000,000$

Stock B's market capitalization =  $\$51 \times 13,000,000$  shares =  $\$663,000,000$

$$\begin{aligned}\text{Index value} &= \frac{\$75 \times \$450,000,000}{\$450,000,000 + \$663,000,000} + \frac{\$51 \times \$663,000,000}{\$450,000,000 + \$663,000,000} \\ &= 30.32 + 30.38 \\ &= 60.70\end{aligned}$$

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (e) Calculate and analyze the value and return of an index given its weighting method.**

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Q.108 An index with a fundamental weighting has:

- A. a value tilt.
- B. an earnings tilt.
- C. a market capitalization tilt.

The correct answer is **A**.

An index with a fundamental weighting is designed to reflect the economic footprint of companies rather than their market capitalization. This approach often leads to a value tilt because it emphasizes companies that are undervalued relative to their fundamental characteristics, such as earnings, dividends, or sales. By focusing on these intrinsic values, a fundamental index aims to provide a more accurate representation of a company's economic significance and potential for long-term growth.

This method contrasts with market capitalization-weighted indexes, where companies with higher market values have a larger influence on the index's performance, potentially skewing it towards overvalued companies. The fundamental weighting approach seeks to mitigate this by allocating weights based on economic size and value, thus offering a potentially more stable and representative index composition that may appeal to investors looking for value investment opportunities.

**B is incorrect.** Suggesting that an index with a fundamental weighting has an earnings tilt is partially correct but incomplete. While earnings can be a component of fundamental analysis, a fundamental weighting approach encompasses a broader range of financial metrics beyond just earnings. These can include sales, book value, cash flow, and dividends, among others. .

**C is incorrect.** Market capitalization weighting bases the weight of each company in the index on its market value, which can lead to a concentration in larger companies that may not necessarily reflect their fundamental economic value. In contrast, fundamental weighting deliberately moves away from market capitalization as the sole determinant of weight, aiming instead to allocate weights based on a company's economic fundamentals.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.***

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Q.818 A Finance student wants to create an index with the stock he bought in a paper trading account. The notes from his record show the following:

Initial price - Stock A: \$10; Stock B: \$15  
Current price - Stock A: \$15; Stock B: \$30

Assuming an initial index value of 105, the equal-weighted index value for the two stocks is now *closest to*:

- A. 75
- B. 150
- C. 183.75

The correct answer is C.

$$\text{Price change in Stock A} = \frac{(15 - 10)}{10} = 50\%$$
$$\text{Price change in Stock B} = \frac{(30 - 15)}{15} = 100\%$$
$$\text{Percentage change in the index} = \frac{(50\% + 100\%)}{2} = 75\%$$
$$\text{New index value} = 105 \times (1 + 75\%) = 183.75\%$$

Tip: Remember that for equal-weighted indices, you calculate the individual returns of the given securities then divide those individual returns by the number of securities given.

**CFA Level I, Topic 6 - Equity, Learning Module 2: Security Market Indices. LOS (e): Calculate and analyze the value and return of an index given its weighting method.**

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Q.819 The market float of a stock is best described as its:

- A. total outstanding shares.
- B. shares available to domestic investors.
- C. outstanding shares excluding those held by controlling shareholders.

The correct answer is **C**.

The market float of a stock is best described as the number of outstanding shares excluding those held by insiders, controlling shareholders, and other locked-in parties. This metric is crucial for investors as it provides a clearer picture of the stock's liquidity and potential volatility. Shares that are not part of the market float are typically not available for trading on the open market, which means they do not contribute to the stock's liquidity.

The market float is a more accurate representation of the shares that are actively traded, influencing both the ease with which investors can buy or sell shares and the stock's price movements. A higher market float generally indicates better liquidity, making it easier for investors to enter or exit positions without significantly impacting the stock price. Conversely, a low market float can lead to higher volatility due to the limited supply of shares available for trading.

**A is incorrect.** The total outstanding shares include all shares issued by the company, including those held by insiders, controlling shareholders, and other entities that may not freely trade their shares on the open market. The market float specifically excludes these shares, focusing only on those available for public trading, which is a critical distinction for investors assessing a stock's liquidity and volatility.

**B is incorrect.** The concept of market float is not limited by geographical boundaries or investor nationality. Instead, it encompasses all shares that are freely tradable by the public, regardless of the investors' location. The key factor determining whether shares are part of the market float is their availability for public trading, not the investors' domestic or international status.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.***

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Q.820 Most of the widely used global security indices are:

- A. price-weighted.
- B. equal-weighted.
- C. market-capitalization weighted.

The correct answer is **C**.

Most of the widely used global security indices are market-capitalization weighted. This method involves weighting each component of the index according to its market capitalization, adjusted for float, which represents the proportion of shares publicly available for trading. The rationale behind using market capitalization as a weighting mechanism is that it reflects the total market value of a company's outstanding shares, providing a more accurate representation of its size and influence in the market.

This approach ensures that larger companies have a greater impact on the index's performance, which is considered a more realistic measure of the market's movements. Float-adjusted market capitalization further refines this by considering only shares available to the public, excluding those held by insiders, governments, or other restricted entities, thus offering a clearer picture of market dynamics.

**A is incorrect.** A high stock price does not necessarily correlate with a company's overall market value. Therefore, while some indices, like the Dow Jones Industrial Average, are price-weighted, they are not representative of the most widely used global security indices.

**B is incorrect.** Equal-weighted indices assign the same weight to each stock in the index, regardless of the company's size or market value. This approach treats all companies equally, giving smaller companies the same influence as larger ones. While this can highlight the performance of smaller companies and offer a different perspective on the market, it does not accurately reflect the overall market dynamics dominated by larger companies. Consequently, equal-weighted indices are less common among the major global security indices, which tend to favor a market-capitalization-weighted approach to better represent market movements.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.***

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Q.821 The returns of hedge fund indices are *most likely*:

- A. biased upward.
- B. biased downward.
- C. similar to other indices.

The correct answer is **A**.

The returns of hedge fund indices are most likely biased upward. This phenomenon can be attributed to several factors inherent in the reporting and compilation of hedge fund performance data. One of the primary reasons for this bias is the voluntary nature of performance reporting in the hedge fund industry. Hedge funds that perform well are more inclined to report their performance, while those that perform poorly or fail may opt not to disclose their results. This selective reporting leads to what is known as survivorship bias, where the aggregated performance data reflects only the funds that have survived and chosen to report, inherently skewing the average performance upwards.

Another contributing factor to the upward bias is the issue of backfill bias (or instant history bias), which occurs when a hedge fund decides to start reporting to a database and is allowed to include historical performance data. Funds that have performed well in the past are more likely to take advantage of this and start reporting, adding their positive historical returns to the database and thus further inflating the perceived average performance of hedge funds.

**B is incorrect.** The voluntary nature of performance reporting and the presence of survivorship and backfill biases contribute to an upward bias in reported hedge fund returns. Poorly performing funds are less likely to report their performance, and the aggregation of data from reporting funds does not accurately represent the entire hedge fund universe, leading to an overestimation of average performance.

**C is incorrect.** Unlike many traditional investment indices, which may have more standardized and mandatory reporting requirements, hedge fund indices suffer from voluntary reporting biases that can significantly distort the perception of their performance. The comparison is not straightforward due to the different nature of reporting and compilation methodologies used in hedge fund indices versus other types of investment indices.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (k) Describe indexes representing alternative investments.***

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Q.822 Which of the following is *not* a real estate index category?

- A. Appraisal index.
- B. Initial sales index.
- C. Repeat sales index.

The correct answer is **B**.

An initial sales index is not recognized as a category within real estate indices. Real estate indices are essential tools for tracking the performance of property markets. They provide valuable insights into market trends, helping investors make informed decisions. The recognized categories of real estate indices include appraisal indices, repeat sales indices, and Real Estate Investment Trust (REIT) indices. Each of these categories serves a specific purpose and is constructed using different methodologies to capture various aspects of the real estate market.

**A is incorrect.** Appraisal indices are a legitimate category of real estate indices. They are based on the valuations provided by professional appraisers. These indices are particularly useful for capturing the value changes in real estate properties over time. Appraisal indices are often used for commercial real estate and can provide insights into market trends, although they may be subject to appraisal bias and lag, reflecting the appraisers' opinions rather than actual transaction prices.

**C is incorrect.** Repeat sales indices are a recognized category of real estate indices. These indices track the price changes of the same property over different transactions. This method helps in understanding how the value of specific properties changes over time, providing a more accurate reflection of market trends by eliminating the need to account for differences between properties. The Case-Shiller index is a well-known example of a repeat sales index, widely used to track residential real estate prices in the United States.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (k) describe indexes representing alternative investments.***

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Q.823 When creating a security market index, the target market:

- A. is usually a broadly defined asset class.
- B. determines the number of securities to be included in the index.
- C. determines the investment universe and the securities available for inclusion in the index.

The correct answer is **C**.

The target market plays a crucial role in determining the investment universe and the securities available for inclusion in a security market index. This decision is foundational in the creation of an index as it sets the boundaries and criteria for what securities can be considered for inclusion.

The target market can be defined based on various factors such as asset class, geographic region, market capitalization, or industry sector. By defining the investment universe, the target market essentially dictates the pool of securities from which the index can be constructed.

**A is incorrect.** While it is true that the target market can be a broadly defined asset class, this statement does not fully capture the role of the target market in determining the investment universe and the specific securities eligible for inclusion in the index. The target market's definition is more nuanced and can encompass a wide range of criteria beyond just asset class.

**B is incorrect.** The statement that the target market determines the number of securities to be included in the index is misleading. While the target market definition influences the pool of eligible securities, the actual selection and number of securities included in an index are determined by the index's methodology. This methodology may include criteria such as liquidity, market capitalization thresholds, and weighting schemes.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (g) Describe uses of security market indexes.***

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Q.824 Given the following information:

**Stock A**

Beginning price: 10\$

Ending price: 14\$

Total dividend in the period: 1\$

The total return of the index is *closest to*:

- A. 10%.
- B. 40%.
- C. 50%.

The correct answer is C.

The total return of Stock A can be calculated by considering both the capital gains (or losses) and the dividends received during the period. The formula for total return is given by:

$$\text{Total return} = \frac{(\text{Endingprice} + \text{Dividends} - \text{Beginningprice})}{\text{Beginningprice}}$$

Applying the given values for Stock A:

$$\text{Total return} = \frac{(14 + 1 - 10)}{10} = 50\%$$

This calculation shows that the total return, which includes both the price appreciation from \$10 to \$14 and the \$1 dividend, amounts to a 50% return on the initial investment.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (b) Calculate and interpret the value, price return, and total return of an index.**

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Q.825 Given the following information for a 2-stock index for the year 2016:

Stock A

Beginning price: 10\$

Ending price: 14\$

Total dividend in the period: 1\$

Stock B

Beginning price: 10\$

Ending price: 13\$

Total dividend in the period: 1\$

The equally weighted price return of the index is *closest to*:

- A. 35%.
- B. 40%.
- C. 50%.

The correct answer is **A**.

When calculating an index's return using the price return method, we ignore the income(in the form of interest and dividends) generated by the assets in the portfolio.

$$\begin{aligned} \text{Stock A} &= \frac{(14 - 10)}{10} = 40\% \\ \text{Stock B} &= \frac{(13 - 10)}{10} = 30\% \\ \text{Price return of the index} &= \frac{(30\% + 40\%)}{2} = 35\% \end{aligned}$$

Tip: Remember that for equal-weighted indices, you calculate the individual returns of the given securities then divide those individual returns by the number of securities given. Also, remember not to include the dividends since this is a price return and not a total return calculation.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (b) Calculate and interpret the value, price return, and total return of an index.***

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Q.826 Given the following information for a 3-stock index for the year 2016:

Stock A

Beginning price: 10\$

Ending price: 14\$

Total dividend in the period: 1\$

Stock B

Beginning price: 10\$

Ending price: 13\$

Total dividend in the period: 1\$

Stock C

Beginning price: 10\$

Ending price: 12\$

Total dividend in the period: 1\$

The total return of this equal-weight index is *closest to*:

- A. 30%.
- B. 35%.
- C. 40%.

The correct answer is **C**.

The total return considers the income generated by the assets in the portfolio in the form of interest and dividends. Also, equal weight is a type of weighting that gives the same weight or importance to each stock in a portfolio or index fund.

$$\begin{aligned} \text{Stock A: } & \frac{(14 + 1 - 10)}{10} = 50\% \\ \text{Stock B: } & \frac{(13 + 1 - 10)}{10} = 40\% \\ \text{Stock C: } & \frac{(12 + 1 - 10)}{10} = 30\% \\ \text{The total return for the index} & = \frac{(30\% + 40\% + 50\%)}{3} = 40\% \end{aligned}$$

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (b) Calculate and interpret the value, price return, and total return of an index.**

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Q.827 The value of a price return index and a total return index consisting of identical equal-weighted dividend-paying equities will be equal:

- A. only at inception.
- B. at inception and on rebalancing dates.
- C. at inception and on reconstitution dates.

The correct answer is **A**.

The value of a price return index and a total return index consisting of identical equal-weighted dividend-paying equities will be equal only at inception. This is because at the inception of both indices, the starting values are set to be the same for comparison purposes.

A price return index measures the performance of the stocks based solely on the changes in their market prices, excluding dividends. On the other hand, a total return index reflects the performance of the stocks considering both the capital gains (price increases) and the dividends paid out to shareholders.

As time progresses, the total return index will start to diverge from the price return index because it reinvests dividends back into the index, thus capturing the compound interest effect of those dividends. This reinvestment leads to a higher value of the total return index compared to the price return index, which does not account for dividends.

**B is incorrect.** Rebalancing involves adjusting the weights of the components in the index, which could occur due to changes in market capitalization or to maintain the index's investment strategy. While rebalancing might temporarily align the values of both indices, it does not account for the ongoing accumulation of reinvested dividends in the total return index, which leads to a divergence in values over time. Therefore, rebalancing does not ensure equality in the values of the price return and total return indices.

**C is incorrect.** Reconstitution refers to the process of changing the constituents of the index, which might happen due to various criteria such as mergers, acquisitions, or significant changes in the companies' market capitalizations. Similar to rebalancing, reconstitution does not address the fundamental difference between price return and total return indices regarding dividend treatment. The total return index will continue to outperform the price return index over time due to the reinvestment of dividends, making their values unequal post-inception, regardless of reconstitution events.

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***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (b) Calculate and interpret the value, price return, and total return of an index.***

Q.828 Which of the following index weighting methods *most likely* requires the most frequent rebalancing?

- A. Price-weighting.
- B. Equal-weighting.
- C. Market-capitalization weighting.

The correct answer is **B**.

Equal-weighted indices require the most frequent rebalancing to maintain equal weights across all constituent stocks. As stock prices fluctuate, the percentage of each stock in the index changes, necessitating regular adjustments (typically quarterly) to realign each stock's weighting back to equal proportions.

**B is correct.** In a price-weighted index, the weight of each stock is based on its price per share, so changes in stock prices directly impact their relative weights within the index. However, this type of index automatically adjusts as stock prices change, and does not require rebalancing in the traditional sense. Adjustments are necessary primarily when structural changes such as stock splits or changes in index composition occur.

**C is incorrect.** Market-capitalization weighted indices adjust naturally to changes in stock prices and the total market capitalization of the constituent companies. While these indices do require rebalancing, it is generally less frequent compared to equal-weighted indices. Rebalancing is mainly needed to reflect significant changes in market cap due to corporate actions or to accommodate changes in the composition of the index.

**CFA Level I, Topic 6 - Equity, Learning Module 2: Security Market Indices. LOS (f): Describe rebalancing and reconstitution of an index.**

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Q.1126 Which of the following statement is *least likely* accurate?

- A. A price return index only reflects the prices of constituent securities.
- B. The values of both a price return index and a total return index are not the same at inception.
- C. A total return index reflects prices and assumes reinvestment of all income received since inception.

The correct answer is **B**.

Typically, both a price return index and a total return index start with the same value at inception (such as 1000 or 100). The divergence in their values occurs over time. A total return index includes the reinvestment of dividends and other income along with the price changes of the securities, while a price return index includes only the price changes. However, at the point of inception, there is no difference in value since no dividends or income have been accumulated or reinvested yet.

**A is incorrect.** This option correctly identifies that a price return index only reflects the prices of constituent securities. It measures the capital gains or losses of the securities within the index, excluding any income generated from dividends or interest. This characteristic is fundamental to understanding the difference between a price return index and a total return index, making this statement accurate and relevant to distinguishing between the two types of indices.

**C is incorrect.** This option accurately describes a total return index, which not only reflects the prices of its constituent securities but also assumes the reinvestment of all income received since inception, such as dividends and interest. This reinvestment aspect is what differentiates a total return index from a price return index, as it captures the total return of the index constituents, including both capital gains and income returns.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (b) Calculate and interpret the value, price return, and total return of an index.***

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Q.1172 What is the simplest method to weigh an index and the one used by Charles Dow to construct the Dow Jones Industrial Average?

- A. Price-weighting.
- B. Fundamental weighting.
- C. Market-capitalization weighting

The correct answer is **A**.

The simplest method to weigh an index, as used by Charles Dow for the construction of the Dow Jones Industrial Average (DJIA), is the price-weighting method. This method assigns weights to each constituent security in the index based on its price. The formula for calculating the weight of each security in a price-weighted index is given by:

$$\frac{\text{Price of the constituent security}}{\text{Sum of all prices of the constituent securities in the index}}$$

This approach implies that stocks with higher prices have a greater impact on the index's performance, regardless of the company's size or the number of shares outstanding. The DJIA is one of the most well-known examples of an index that uses price weighting, making it straightforward to calculate and understand.

**B is incorrect.** It requires the analysis of financial statements and the application of specific criteria to determine the weights of the constituent securities. Fundamental weighting is not the method used by Charles Dow for the DJIA, as it involves a more sophisticated analysis of company fundamentals rather than a straightforward calculation based on stock prices.

**C is incorrect.** Market-capitalization weighting, also known as cap-weighting, assigns weights to securities in an index based on the total market value of their outstanding shares (share price multiplied by the number of shares outstanding).

This method reflects the relative size of companies within the index, with larger companies having a greater impact on the index's performance. While market-capitalization weighting is widely used in many modern indices, it is not the method employed by Charles Dow for the DJIA.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (c) Describe the choices and issues in index construction and management.**

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Q.1173 Which of the following is *least likely* a drawback of equal-weighting?

- A. Simple to construct at the initiation.
- B. Securities that constitute the largest fraction of the target market value are underrepresented.
- C. After the index is constructed and the prices of constituent securities change, the index is no longer equally weighted.

The correct answer is **A**.

The simplicity in construction stems from the straightforward approach of allocating an equal amount of capital to each constituent security at the inception of the index or portfolio. This method does not require complex calculations or adjustments based on market capitalization or other factors, making it accessible and easy to implement for portfolio managers.

The equal-weighting strategy ensures that no single security has a disproportionate impact on the portfolio's performance at the outset, promoting diversification and potentially reducing the risk associated with heavy concentration in a few large-cap stocks.

**B is incorrect.** Equal-weighting assigns the same weight to all securities, regardless of their market capitalization. As a result, large-cap stocks, which might have a significant impact on the market's overall movement, have the same influence as smaller-cap stocks within the equal-weighted portfolio.

This can lead to a divergence in performance between the equal-weighted portfolio and market-cap-weighted benchmarks, especially in market environments where large-cap stocks outperform.

**C is incorrect.** The value of each security in the portfolio will change at different rates due to market movements, causing some securities to occupy a larger or smaller proportion of the portfolio than others over time. To maintain an equal-weighted structure, the portfolio requires frequent rebalancing, which can lead to higher transaction costs and tax implications.

This rebalancing process is necessary to realign the portfolio back to its equal-weighted distribution, ensuring that the strategy's intended diversification benefits and risk profile are preserved.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.**

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Q.1174 Which of the following is *most likely* a primary disadvantage of market capitalization-weighting?

- A. Constituent securities are held in proportion to their value in the target market.
- B. Its simplicity and failure to take into account other factors such as the volume of shares sold.
- C. Constituent securities whose prices have risen the most (or fallen the most) have a greater (or lower) weight in the index.

The correct answer is **C**.

The primary disadvantage of market capitalization-weighting is that it can lead to a concentration of the index in a few large companies whose stock prices have increased significantly. This weighting method calculates the weight of each constituent security in the index based on its market capitalization, which is the product of the security's price and the number of shares available.

As a result, securities whose prices have risen the most gain a greater weight in the index, potentially making the index less representative of the overall market or sector it aims to measure. This can skew the index's performance, especially if a few large companies perform exceptionally well or poorly compared to the broader market.

It also means that as a company's stock price increases, an index fund tracking the index will automatically buy more of that stock at higher prices, which could exacerbate the concentration risk and potentially lead to higher volatility in the index.

**A is incorrect.** Holding constituent securities in proportion to their value in the target market is actually a characteristic of market capitalization-weighting, not a disadvantage. This method ensures that the index reflects the relative sizes of companies within the market or sector it represents. While this approach has its drawbacks, such as potentially leading to concentration in a few large stocks, it is not inherently a disadvantage but rather a fundamental aspect of how market capitalization-weighted indexes are constructed.

**B is incorrect.** The criticism that this method fails to take into account other factors, such as the volume of shares sold, points to a broader discussion about the limitations of market capitalization-weighting. While it is true that this method does not consider factors like trading volume, liquidity, or fundamental company metrics, these are not typically considered primary disadvantages.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.**

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Q.1175 What do you call this method that attempts to address the disadvantages of market-capitalization weighting by using measures of a company's size that are independent of its security price?

- A. Optimal Weighting.
- B. Fundamental Weighting.
- C. Market-capitalization weighting method.

The correct answer is **B**.

Fundamental weighting is a method that seeks to overcome the limitations associated with market-capitalization weighting by utilizing metrics of a company's size that do not depend on its stock price. This approach involves weighting the constituent securities of an index or portfolio based on fundamental company data such as book value, cash flow, earnings, dividends, revenues, and the number of employees.

The rationale behind this method is to provide a more balanced representation of a company's economic footprint, rather than its market value, which can be influenced by market sentiment and other transient factors. By focusing on these fundamental aspects, investors can potentially achieve a more stable and diversified portfolio that may better reflect the underlying economic value of the constituent companies.

**A is incorrect.** Optimal weighting refers to the process of determining the best weight allocation among different assets in a portfolio to achieve a specific objective, such as minimizing risk or maximizing return, given certain constraints.

This concept is fundamentally different from fundamental weighting, which does not primarily focus on optimizing portfolio performance based on risk-return characteristics but rather on selecting weights based on company fundamentals.

**C is incorrect.** Market-capitalization weighting method weights each constituent security in a portfolio or index based on its market capitalization, which is the product of the company's share price and the total number of its outstanding shares.

This method can lead to portfolios where larger companies constitute a more significant portion of the investment, potentially overshadowing smaller companies regardless of their economic fundamentals. This approach contrasts with fundamental weighting, which seeks to mitigate the influence of stock prices on the portfolio's composition by focusing on fundamental economic indicators.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.**

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Q.1177 Which of the following statement regarding reconstitution is *most likely* accurate?

- A. Reconstitution does not create turnover in an index.
- B. Reconstitution is similar to a portfolio manager deciding to change the securities in his or her portfolio.
- C. Reconstitution is necessary because the weights of the constituent securities change as their market prices change.

The correct answer is **B**.

Reconstitution refers to the process of changing the constituent securities in an index, which is akin to a portfolio manager deciding to change the securities in their portfolio. This process is essential in maintaining the relevance and accuracy of the index. As market conditions change, some securities may no longer meet the criteria for inclusion in the index, while others may become eligible.

By periodically reviewing and adjusting the composition of the index, its administrators ensure that it continues to reflect the segment of the market it is intended to represent. This practice is crucial for investors who rely on indices as benchmarks or as the basis for index funds and exchange-traded funds (ETFs).

**A is incorrect.** When securities are added or removed from an index, funds and other investment vehicles that track this index must buy or sell shares of the respective companies to mirror the index's new composition. This activity generates turnover, which refers to the buying and selling of securities, leading to transaction costs and potential tax implications for investors. Therefore, reconstitution directly contributes to turnover within an index, contrary to what option A suggests.

**C is incorrect.** Changing market values of the constituent securities can cause their proportions in the index to deviate from the intended weights. While rebalancing and reconstitution are related in that they both aim to maintain the integrity and relevance of the index, they address different aspects of index management.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (f) Describe rebalancing and reconstitution of an index.**

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Q.1178 Which of the following is *least likely* a major use of market indices?

- A. Market indices act as proxies for measuring and modeling returns.
- B. Market indices act as proxies for asset classes in asset allocation models.
- C. Market indices measure the overall performance of the economy as a whole.

The correct answer is **C**.

Security market indices may not accurately reflect the overall attitude of investors or the 'market' because the indices consist of only a few of the stocks traded in the market. The main uses of market indices are to:

1. Serve as proxies for measuring risk and return
2. Serve as proxies for asset classes
3. Gauge market sentiments
4. Model portfolios for index and exchange-traded funds.
5. Benchmark active managers

**A is incorrect.** Market indices are indeed used as proxies for measuring and modeling returns. They provide a convenient and effective way to track the performance of specific market segments, industries, or the market as a whole.

By comparing the performance of individual investments or portfolios against relevant market indices, investors and analysts can gauge the relative performance of these investments. This helps in assessing the effectiveness of investment strategies and in making informed decisions.

**B is incorrect.** Market indices also act as proxies for asset classes in asset allocation models. Asset allocation is a key component of investment strategy, involving the distribution of investments across various asset classes to achieve a desired risk-return profile.

Market indices representing different asset classes, such as equities, bonds, or commodities, provide a reference point for the performance of these classes. This allows investors to model their portfolios based on the performance of these indices, facilitating strategic asset allocation and diversification.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (g) Describe uses of security market indexes.***

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Q.1179 A security market index represents the:

- A. risk of a security market.
- B. value of the security market as a whole.
- C. value of a given security market, market segment, or asset class.

The correct answer is **C**.

A security market index is a statistical measure that reflects the composite value of a selected group of stocks, which represents a significant portion of the market or a specific sector of the economy. The purpose of a security market index is to provide investors and analysts with an indicator of the overall market performance and trends.

It allows for comparisons between the performance of individual securities or portfolios and the market or sector as a whole. By tracking a market index, investors can gauge the health of the market or sector it represents, making it a crucial tool for investment decision-making.

**A is incorrect.** Suggesting that a security market index represents the risk of a security market is misleading. While market indices can be used to infer certain market risks, such as volatility by observing the fluctuations in the index value over time, they primarily serve as a measure of market performance and not directly of risk.

Risk assessment involves a more complex analysis, including factors such as market volatility, economic indicators, and individual security performance, which cannot be solely determined by an index.

**B is incorrect.** Stating that a security market index represents the value of the security market as a whole is too broad and imprecise. While it is true that some indices aim to reflect the overall market, such as broad market indices (e.g., S&P 500, which represents a significant portion of the U.S. equity market), not all indices serve this purpose.

Many indices are designed to track specific sectors of the economy, market segments, or asset classes (e.g., technology stocks, small-cap stocks, or bonds). Therefore, saying that an index represents the value of the entire security market overlooks the diversity and specificity of indices available to investors.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (a) Describe a security market index.**

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Q.1645 Which of the following is *least likely* used in the calculation of the return on security market indices?

- A. Total returns.
- B. Price returns.
- C. After-tax returns.

The correct answer is C.

Given the complexity and individual variability in tax implications, security market indices typically do not incorporate after-tax returns in their calculations. Instead, indices focus on pre-tax price and total returns to provide a standardized measure of performance that is applicable to a broad investor base, without the need to account for the myriad of individual tax considerations.

When calculating the return on security market indices, the focus is typically on either price returns or total returns. Price return indices consider only the changes in the prices of the constituent securities, ignoring any income generated from these securities, such as dividends.

On the other hand, total return indices account for both the price changes and the income from the constituent securities, assuming that this income is reinvested in the index. This approach provides a more comprehensive view of the performance of the securities within the index.

**A is incorrect.** They provide a complete picture of the performance of the securities within the index. This method includes both the capital gains (or losses) from price changes and the income generated from the securities, such as dividends or interest payments. By assuming the reinvestment of this income, total return indices accurately reflect the true performance of the index over time.

**B is incorrect.** Price returns are also used in the calculation of the return on security market indices, albeit providing a more limited perspective than total returns. Price returns focus solely on the changes in the prices of the constituent securities, without accounting for any income generated from these securities. While this approach simplifies the calculation, it may not fully capture the overall performance of the index, especially in markets where income from securities plays a significant role in total returns.

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**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (b) Calculate and interpret the value, price return, and total return of an index.**

Q.1646 Which of the following questions is *least likely* considered in the construction and management of market indices?

- A. How often should the index be rebalanced?
- B. What is the target market the index is intended to measure?
- C. Which securities among the high-performing securities should be included?

The correct answer is C.

Market indices are designed to provide a snapshot of the market or a specific segment of the market, reflecting its overall performance and characteristics. Including only high-performing securities would introduce a significant bias, making the index unrepresentative of the market it aims to measure.

Indices should include a range of securities that accurately reflect the market's composition, including both high and low-performing securities, to ensure a balanced and accurate representation.

**A is incorrect.** The frequency of rebalancing is a critical consideration in the construction and management of market indices. Rebalancing refers to the process of realigning the weightings of the securities within the index. This is necessary to maintain the index's intended representation of the market, as the value of individual securities changes over time due to market movements.

Deciding how often to rebalance involves a trade-off between reflecting market changes accurately and minimizing transaction costs and market impact. Therefore, the question of rebalancing frequency is highly relevant to index construction and management.

**B is incorrect.** Determining the target market that the index is intended to measure is fundamental to its construction. The target market defines the scope and focus of the index, guiding the selection of securities to be included. It determines whether the index will represent a broad market, such as a national economy, or a specific sector, such as technology or healthcare.

The target market also influences other key decisions, such as the criteria for including securities and the weighting methodology. Without a clear understanding of the target market, it would be impossible to construct an index that serves its intended purpose of providing meaningful insights into market performance.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (c) Describe the choices and issues in index construction and management.**

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Q.1647 Which of the following is *most likely* a disadvantage of price-weighted indices?

- A. Its construction is too simple.
- B. The percentage changes in the price of low-priced securities have a greater impact.
- C. The percentage changes in the price of high-priced securities have a greater impact.

The correct answer is **C**.

The primary disadvantage of a price-weighted index is that the percentage changes in the price of high-priced securities have a disproportionately greater impact on the index's overall value. In a price-weighted index, each component stock contributes to the index based on its price per share, rather than its total market capitalization. This means that companies with higher stock prices have more influence on the index's movements, regardless of their actual size or the total value of shares outstanding.

This can lead to a situation where the index's performance is skewed by the movements of a few high-priced stocks, rather than reflecting a more balanced view of the market as a whole. This characteristic of price-weighted indices can distort the perception of market trends and diminish the index's utility as a benchmark for investors.

**A is incorrect.** The simplicity of the construction of price-weighted indices is often cited as an advantage rather than a disadvantage. The method involves simply adding up the prices of the constituent stocks and dividing by a divisor, which is adjusted for stock splits and other corporate actions.

This simplicity can make price-weighted indices easier to understand for some investors. However, this simplicity also leads to the significant drawback mentioned above, where the index may not accurately reflect the market's movements due to its overemphasis on high-priced stocks.

**B is incorrect.** The index is calculated based on the price per share of the included stocks, without considering the total market capitalization. Therefore, a significant percentage change in a low-priced stock will have a much smaller impact on the index compared to a similar percentage change in a high-priced stock.

This characteristic can lead to misinterpretation of the market's overall direction, especially if a few high-priced stocks experience large price movements while the broader market remains relatively stable.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.**

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Q.1648 Which of the following is the *most appropriate* term for excluding shares held by owners and shares unavailable for foreign buyers while constructing a market-capitalization-weighted index?

- A. Free float.
- B. Index float.
- C. Market float.

The correct answer is **A**.

The term "free float" refers to the shares of a company that are available for trading in the public markets. It excludes shares held by insiders, governments, or other restricted entities that are not available for purchase by the average investor.

When constructing a market-capitalization-weighted index, it is crucial to consider only the free float since it represents the portion of the company's shares that can actually influence the market based on supply and demand dynamics.

By focusing on the free float, the index provides a more accurate representation of the market's movements and valuations, as it reflects the trading activity of readily available shares. This approach ensures that the index is not disproportionately influenced by large holdings that are not actively traded, thereby offering a clearer picture of market trends and investor sentiment.

**B is incorrect.** The term "index float" is not a commonly used term within the context of market-capitalization-weighted indexes. While it might suggest a concept related to the calculation or adjustment of indexes, it does not specifically refer to the exclusion of shares held by insiders or unavailable for foreign buyers, which is the precise definition of free float.

**C is incorrect.** "Market float" is a broader term that could be interpreted in various ways, but it does not specifically denote the exclusion of shares held by insiders or shares that are not available for foreign buyers in the context of constructing a market-capitalization-weighted index.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.**

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Q.1649 Which of the following is *least likely* a market-capitalization weighted index?

- A. S&P 500 Composite Index.
- B. Dow Jones Industrial Average.
- C. Financial Times Ordinary Share Index.

The correct answer is **B**.

The Dow Jones Industrial Average (DJIA) is not a market-capitalization weighted index but rather a price-weighted index. In a price-weighted index, companies are weighted based on their stock price rather than their total market capitalization.

This means that companies with higher stock prices have a more significant impact on the index's performance, regardless of their actual market size. This method can lead to a skewed representation of the market, as it does not account for the total value of a company's outstanding shares.

**A is incorrect.** The S&P 500 Composite Index is a market-capitalization weighted index. This means that each company's weight in the index is proportional to its market capitalization, which is calculated by multiplying the number of its outstanding shares by its per-share market value.

This method ensures that companies with higher market capitalizations have a greater impact on the index's performance. The S&P 500 is widely recognized for its representation of the U.S. equity market's large-cap sector, making it a benchmark for many investment products and strategies.

**C is incorrect.** The Financial Times Stock Stock Exchange index, also known as the FTSE 100, is a market-capitalization weighted index in the context of this question. It's important to clarify that the FTSE 100, like the S&P 500, weights its constituents based on market capitalization, reflecting the market value of the companies within the index.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.***

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Q.1650 Which of the following index weighting method is based on earnings, dividend, or cash flow?

- A. Price weighting.
- B. Equally weighting.
- C. Fundamental weighting.

The correct answer is C.

Fundamental weighting is a method used in constructing stock indices where stocks are weighted based on fundamental company metrics such as earnings, dividends, or cash flows rather than their market prices. This approach aims to reflect the economic footprint of companies in the index, providing a measure that some argue is more representative of the market or sector's actual value.

By focusing on these underlying fundamentals, the index can potentially offer a more stable and less volatile measure of performance compared to traditional market capitalization-weighted indices. This method assumes that companies with stronger fundamentals are likely to perform better over the long term, making them more significant contributors to the index's overall performance.

**A is incorrect.** It does not consider the total market value or the economic size of the companies. For example, a company with a higher stock price but smaller market capitalization could disproportionately influence the index compared to a larger company with a lower stock price. This approach contrasts with fundamental weighting, which bases the index composition on economic factors rather than stock prices alone.

**B is incorrect.** Equal weighting assigns the same weight to every stock in the index, regardless of the company's size, price, or economic fundamentals. This method ensures that smaller companies have the same influence on the index as larger companies, potentially offering a more diversified exposure to the market or sector.

However, it does not consider the economic significance of companies based on their earnings, dividends, or cash flows. While equal weighting can reduce the concentration risk associated with large-cap stocks dominating the index, it does not specifically aim to reflect the economic value of companies as fundamental weighting does.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.***

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Q.1651 Using the following table, calculate the price-weighted one-month return for the index.

	Price on June 30, 2016	Price on July 31, 2016	Numbers of shares
Stock A	40	35	20,000
Stock B	18	25	10,000
Stock C	32	40	10,000
Stock D	25	20	15,000

- A. 4.35%
- B. 5.65%
- C. 11.80%

The correct answer is **A.**

The price-weighted return for 30 June is

$$\frac{(40 + 18 + 32 + 25)}{4} = 28.75$$

And the price-weighted return for 31 July is

$$\frac{(35 + 25 + 40 + 20)}{4} = 30.$$

The one-month price-weighted return is

$$\frac{30}{28.75} - 1 = 4.35\%$$

. Alternatively, we could arrive at the same answer using the below method:

Price on June 30, 2016

$$40 + 18 + 32 + 25 = 115$$

Price on June 31, 2016

$$35 + 25 + 40 + 20 = 120$$

So that:

$$\text{Return} = \frac{120 - 115}{115} = 4.35\%$$

Tip: For price-weighted return, simply add the prices at each point, then get the return.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes,  
LOS (e) Calculate and analyze the value and return of an index given its weighting  
method.**

---

Q.1652 A hypothetical price-weighted index is comprised of four securities, whose information is given in the following table:

	Price on June 30, 2016	Price on July 31, 2016	Numbers of shares
Stock A	40	35	20,000
Stock B	18	25	10,000
Stock C	32	40	10,000
Stock D	25	20	15,000

Assuming that Stock C splits 2-for-1 on August 1st, 2016 and that there are no other changes in the prices of the securities, the new denominator for the index is *closest to*:

- A. 3.33
- B. 4.35
- C. 5

The correct answer is **A**.

The 2-for-1 split of Stock C will decline the price of the stock to  $\frac{40}{2} = 20$

Since the price-weighted index at the closure was  $\frac{(35+25+40+20)}{4} = 30$ , the new denominator will be adjusted for the split:

$$\begin{aligned} \frac{(35 + 25 + 20 + 20)}{D} &= 30 \\ D &= \frac{(35 + 25 + 20 + 20)}{30} = 3.33 \end{aligned}$$

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes,  
LOS (e) Calculate and analyze the value and return of an index given its weighting  
method.**

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Q.1653 Using the data given in the following table, calculate the market-capitalization-weighted return on the index. Assume June 30, 2016, as the base period and that the number of shares is constant over both periods.

	Price on June 30, 2016	Price on July 31, 2016	Numbers of shares
Stock A	40	35	20,000
Stock B	18	25	10,000
Stock C	32	40	10,000
Stock D	25	20	15,000

- A. -1.5%
- B. -3.5%
- C. 1.5 %

The correct answer is **A**.

Using the market-capitalization weighted return method, the return in the base year is

$$(40 \times 20,000 + 18 \times 10,000 + 32 \times 10,000 + 25 \times 15,000) = 1,675,000.$$

The market cap-weighted return in July is

$$(35 \times 20,000 + 25 \times 10,000 + 40 \times 10,000 + 20 \times 15,000) = 1,650,000.$$

Hence, the market capitalization for the period is

$$\frac{1,650,000}{1,675,000} \times 100 = 98.50$$

and the market-capitalization weighted return is

$$\frac{98.5}{100} - 1 = -1.5\%$$

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (e) Calculate and analyze the value and return of an index given its weighting method.**

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Q.1654 Which of the following activities involves adding and subtracting the securities that make up an index?

- A. Repricing.
- B. Rebalancing.
- C. Reconstructing.

The correct answer is **C**.

Reconstructing an index involves periodically reviewing and adjusting the composition of the index by adding and subtracting securities. This process ensures that the index accurately reflects the current market conditions and maintains its intended characteristics. For example, if a company's market capitalization grows significantly, it might be added to an index that tracks large-cap stocks.

Conversely, if a company's performance declines and it no longer meets the criteria for inclusion in the index, it may be removed. This ongoing process of reconstruction is crucial for maintaining the relevance and accuracy of the index, making it a valuable tool for investors and analysts who rely on it to gauge market trends and performance.

**A is incorrect.** Repricing refers to the practice of adjusting the strike price of employee stock options that are out of the money (i.e., the stock's current market price is lower than the option's strike price) to a lower strike price, making them more attractive and potentially valuable to employees. This practice is typically employed as a means to retain and motivate employees during periods when the company's stock price has declined.

**B is incorrect.** Rebalancing is the process of realigning the proportions of securities within a portfolio or index to their target weights. Over time, as some investments may perform better than others, the actual weight of each security in the portfolio or index can drift away from the target allocation. Rebalancing involves buying or selling securities to bring their weights back to the desired levels.

This process is essential for maintaining the risk profile and investment strategy of the portfolio or index. While rebalancing does involve adjusting the holdings within an index, it does not specifically entail adding or subtracting securities to reflect changes in the market or the criteria for index inclusion, distinguishing it from reconstructing.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (f) Describe rebalancing and reconstitution of an index.***

---

Q.1655 A market index is *least likely* used:

- A. to measure beta and risk-adjusted returns.
- B. as a benchmark for measuring the performance of portfolios.
- C. as a reflection of the management's sentiment of the companies whose securities are included in the index.

The correct answer is C.

Market indices are primarily used to gauge the overall performance and health of the financial markets or specific sectors within those markets.

The main uses of market indices are to:

- Benchmark active managers
- Serve as proxies for measuring risk and return
- Gauge market sentiments
- Serve as proxies for asset classes
- Model portfolios for index and exchange-traded funds.

However, they are not designed to reflect the management's sentiment of the companies whose securities are included in the index.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (a) Describe uses of security market indexes.***

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Q.1656 Which of the following is *least likely* a type of equity market index?

- A. Russell 2000 Index
- B. S&P 500 Bond Index
- C. NASDAQ Composite Index

The correct answer is **B**.

This index is indeed a bond index, not an equity index. Equity market indices are designed to represent the performance of stocks or equities in the market. They provide a snapshot of the market's health and are used by investors to gauge the performance of their stock portfolios against the broader market.

The S&P 500 Bond Index, however, tracks the performance of public obligations of the U.S. government, municipal securities, corporate bonds, and other investment-grade fixed-income securities, making it distinct from equity indices which focus on stock market investments.

**A is incorrect.** It captures the performance of U.S. small-cap stocks, which are often more sensitive to economic changes than their large-cap counterparts. The inclusion of the Russell 2000 Index as an option in the question highlights the diversity of equity indices, which can range from those tracking the largest companies to those focusing on smaller, potentially more growth-oriented firms.

**C is incorrect.** The NASDAQ Composite Index is another example of an equity market index. It includes all the stocks listed on the NASDAQ stock market, making it a broad-based index that reflects the performance of more than 3,000 stocks.

It includes companies from various industries, but it is particularly well-known for its heavy concentration of technology stocks. This makes the NASDAQ Composite a crucial index for investors interested in the tech sector, further underscoring the variety of equity indices available to track different segments of the market.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (h) Describe types of equity indexes.***

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Q.1657 Which of the following is *most likely* a potential challenge faced by investors during the construction of fixed income securities indices?

- A. A diverse universe of securities.
- B. A lack of diverse investment vehicles.
- C. Investment barriers imposed by authorities/government

The correct answer is **A**.

The construction of fixed income securities indices faces several challenges, with a diverse universe of securities being a significant one. The fixed-income market encompasses a wide range of securities issued by various entities such as public corporations, governments, government agencies, and private firms. Each of these issuers can produce a multitude of fixed-income securities, each with its unique characteristics such as maturity, interest rate, and credit quality.

This diversity results in a vast and complex universe of fixed-income securities, significantly larger than the universe of equity securities. To accurately represent a specific segment of the fixed-income market, an index must include thousands of different securities, which complicates the construction and maintenance of the index.

**B is incorrect.** The statement suggests that a lack of diverse investment vehicles is a challenge in constructing fixed income securities indices. However, the challenge is not the lack of diversity in investment vehicles but rather the overwhelming diversity and complexity of the fixed-income securities themselves. The vast array of fixed-income products available provides ample opportunities for diversification but complicates index construction and maintenance.

**C is incorrect.** While investment barriers imposed by authorities or governments can indeed pose challenges to investors, they are not the most significant challenge faced during the construction of fixed income securities indices. The primary challenge stems from the diverse and complex universe of fixed-income securities and the issues related to accurately representing this diversity in an index.

***CFA Level I, Topic 6 - Equity, Learning Module 2: Security Market Indices. LOS (c): Describe the choices and issues in index construction and management.***

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Q.1658 Downie Jones is a hedge fund manager. He is analyzing different indices to compare the performance of hedge funds. Which one of these indices is *most appropriate* for Jones?

- A. FTSE EPRA.
- B. Morningstar Style Index.
- C. HFRX Equal Weighted Strategies EUR Index.

The correct answer is C.

The HFRX Equal Weighted Strategies EUR Index is the most appropriate choice for Downie Jones to compare the performance of hedge funds. This index is specifically designed to measure the return on hedge funds, making it an ideal tool for Jones's analysis.

The HFRX Equal Weighted Strategies EUR Index encompasses a broad range of hedge fund strategies, providing a comprehensive overview of the hedge fund industry's performance. By using this index, Jones can accurately assess the effectiveness and profitability of different hedge fund strategies in comparison to the broader market.

**A is incorrect.** The FTSE EPRA/NAREIT Global Real Estate Index Series is designed to represent general trends in eligible real estate equities worldwide. Relevant to investors in global real estate securities, it focuses on publicly-traded Real Estate Investment Trusts (REITs) and real estate holding companies. While it provides valuable insights into the real estate sector, it is not tailored to the analysis of hedge funds.

**B is incorrect.** The Morningstar Style Index is designed to categorize equity portfolios based on their investment style, size, and value orientation. It offers a framework for evaluating and comparing traditional equity investments, including mutual funds and individual stocks. However, the Morningstar Style Index does not specifically address the unique characteristics and strategies of hedge funds.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (k) Describe indexes representing alternative investments.***

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Q.1659 Using the data given in the following table, calculate the market-capitalization weighted return on the index.

	Price on June 30, 2016	Price on July 31, 2016	Numbers of shares
Stock A	40	50	20,000
Stock B	18	25	10,000
Stock C	32	40	10,000
Stock D	25	30	15,000

- A. 20.96%
- B. 25.37%
- C. 29.88%

The correct answer is **B**.

Using the market-capitalization weighted return method the return in the base year is  $(40 \times 20,000 + 18 \times 10,000 + 32 \times 10,000 + 25 \times 15,000) = 1,675,000$ .

Market cap-weighted return on July 31 is  $(50 \times 20,000 + 25 \times 10,000 + 40 \times 10,000 + 30 \times 15,000) = 2,100,000$ .

Hence, the market capitalization for the period is  $\frac{2,100,000}{1,675,000} \times 100 = 125.37$  and the market-capitalization weighted return is  $\frac{125.37}{100} - 1 = 25.37\%$

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.**

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Q.3608 An equal-weighted index consists of the following stocks:

	Starting Price	Ending Price	Dividends
Stock A	20.00	22.00	0.75
Stock B	15.00	18.00	1.00
Stock C	30.00	33.00	1.50
Stock D	13.00	11.00	2.00

The total return of the index is *closest to*:

- A. 12.85%.
- B. 13.85%.
- C. 14.85%.

The correct answer is **B**.

	Starting Price	Ending Price	Dividends	Return
Stock A	20.00	22.00	0.75	$(22 + 0.75 - 20)/20 = 13.75\%$
Stock B	15.00	18.00	1.00	$(18 + 1 - 15)/15 = 26.67\%$
Stock C	30.00	33.00	1.50	$(33 + 1.50 - 30)/30 = 15.00\%$
Stock D	13.00	11.00	2.00	$(11 + 2 - 13)/13 = 0.00\%$

As the index is an equal-weighted index:

$$\text{Total index return} = \frac{1}{4} \times 13.75\% + \frac{1}{4} \times 26.67\% + \frac{1}{4} \times 15.00\% + \frac{1}{4} \times 0.00\% = 13.85\%$$

Tip: Remember that for equal-weighted indices, you calculate the individual returns of the given securities then divide those individual returns by the number of securities given. Also, remember to add dividends since it's a total return index.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.**

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Q.3609 The composition of a price-weighted index is given in the following exhibit:

Exhibit 1: Price-Weighted Index

	Price - Beginning of period	Price - End of period
Stock A	\$40	\$38
Stock B	\$20	\$22
Stock C	\$35	\$40
Stock D	\$26	\$20
Stock E	\$50	\$55
Stock F	\$22	\$25

The return generated during the period by the index is *closest to*:

- A. 3.6%.
- B. 4.6%.
- C. 5.6%.

The correct answer is **A**.

	Price - Beginning of period	Weight in the index	Return generated during the period
Stock A	\$40	$40/193 = 20.73\%$	$(38 - 40)/40 = -5\%$
Stock B	\$20	$20/193 = 10.36\%$	$(22 - 20)/20 = 10.00\%$
Stock C	\$35	$35/193 = 18.13\%$	$(40 - 35)/35 = 14.29\%$
Stock D	\$26	$26/193 = 13.47\%$	$(20 - 26)/26 = -23.08\%$
Stock E	\$50	$50/193 = 25.91\%$	$(55 - 50)/50 = 10.00\%$
Stock F	\$22	$22/193 = 11.40\%$	$(25 - 22)/22 = 13.64\%$
Total	\$193		

The return generated by the index during the period can be calculated as under:

	Weight in the index (X)	Return generated during the period (Y)	(X * Y)
Stock A	20.73%	-5%	-1.04%
Stock B	10.36%	10.00%	1.04%
Stock C	18.13%	14.29%	2.59%
Stock D	13.47%	-23.08%	-3.11%
Stock E	25.91%	10.00%	2.59%
Stock F	11.40%	13.64%	1.55%
Total			3.63%

A shorter way of arriving at the same answer is shown below.

Steps 1. Add the prices at the beginning of the period and divide the sum by the number of securities given.

$$\frac{\$ (40 + 20 + 35 + 26 + 50 + 22)}{6} = 32.17$$

2. Add the prices at the end of the period and divide the sum by the number of securities given.

$$\frac{\$(38 + 22 + 40 + 20 + 55 + 25)}{6} = 33.33$$

3. Divide step 2 by step 1, and subtract one from the answer

$$\frac{33.33}{32.17} - 1 = 0.036058 \approx 3.6\%$$

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (e) Calculate and analyze the value and return of an index given its weighting method.**

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Q.3611 Which of the following is *least likely* accurate for a market capitalization weighted index?

- A. The rebalancing of the index is not required.
- B. Index investing is similar to momentum investing.
- C. Index investing results in an accumulation of undervalued stocks.

The correct answer is **C**.

For a market-capitalization weighted index:

- With the change in security price, the security weight changes. Hence, rebalancing is not required.
- Momentum strategy is a strategy in which traders acquire stocks moving in one direction (generally increasing price). In a market-capitalization-weighted index, the weight of securities increases with a price increase. Hence, index investing is similar to a momentum strategy.
- The weight of securities increases with a price increase. Hence, index investing may result in the accumulation of overvalued stocks.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) compare the different weighting methods used in index construction.**

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Q.3612 Which of the following is *most likely* correct regarding fixed-income indices?

- A. The turnover in equity indices exceeds that of fixed-income indices.
- B. As compared to fixed-income indices, index investing is easier in the case of equity indices.
- C. The high level of liquidity in fixed-income securities makes the pricing of fixed income indices easier than that of equity indices.

The correct answer is **B**.

Index investing is generally easier in the case of equity indices compared to fixed-income indices. This is primarily due to the inherent characteristics of the securities that make up these indices. Equity indices consist of stocks, which typically have higher liquidity and are traded more frequently on major exchanges.

This liquidity facilitates easier replication of the index by investors or fund managers, making index investing more straightforward. In contrast, fixed-income securities, such as bonds, may not be traded as frequently, and the market for these securities can be less transparent, leading to challenges in accurately replicating the index.

**A is incorrect.** The statement that the turnover in equity indices exceeds that of fixed-income indices is not accurate. Fixed-income indices often experience higher turnover than equity indices. This higher turnover is due to the nature of fixed-income securities, where bonds mature and new issues come to market regularly.

As a result, fixed-income indices need to be updated more frequently to reflect the changing composition of the bond market, leading to higher turnover compared to equity indices.

**C is incorrect.** The assertion that the high level of liquidity in fixed-income securities makes the pricing of fixed-income indices easier than that of equity indices is misleading. In reality, fixed-income securities, especially those outside of highly liquid government bonds, can exhibit lower levels of liquidity compared to stocks.

This lower liquidity can make it more challenging to obtain accurate and timely pricing information for fixed-income securities, complicating the pricing of fixed-income indices. Equity securities, being generally more liquid and traded on centralized exchanges, allow for more straightforward and transparent pricing, making the pricing of equity indices less complex.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (j) Describe types of fixed-income indexes.***

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Q.3613 The majority of hedge fund indices are:

- A. price-weighted indices.
- B. equal-weighted indices.
- C. fundamental-weighted indices.

The correct answer is **B**.

Most hedge fund indices are constructed as equal-weighted indices. This method of index construction ensures that each hedge fund within the index contributes equally to the overall performance metric, regardless of the size or capital under management of the individual funds.

This approach is particularly suitable for hedge fund indices because it aims to provide a more representative measure of the average performance of funds within the index, without allowing larger funds to disproportionately influence the outcome. Equal weighting is beneficial in the hedge fund context because it avoids bias towards larger funds, which might not necessarily reflect the performance of the sector as a whole.

**A is incorrect.** The price of a hedge fund's shares is not a relevant metric for assessing its performance. Hedge funds are investment vehicles that aim for absolute returns, and their performance is typically evaluated based on returns or other risk-adjusted measures, rather than share prices.

**C is incorrect.** Fundamental-weighted indices use company data such as earnings, dividends, sales, or book value to determine the weight of each component in the index. This approach is more common in equity indices, where the underlying assumption is that these fundamentals can provide insight into the company's future performance.

However, for hedge funds, which may employ a wide range of investment strategies across different asset classes, such fundamentals are not directly applicable. Hedge fund indices focus on the performance of the funds themselves, rather than the fundamental characteristics of the underlying investments. Therefore, fundamental weighting is not a suitable method for constructing hedge fund indices.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.***

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Q.3614 The components of a price-weighted index are given in exhibit 1.

#### Exhibit 1: Price-weighted Index

	Share Price	Market Capitalization
Stock A	\$92.16	\$123 million
Stock B	\$52.73	\$167 million
Stock C	\$98.12	\$35 million
Stock D	\$12.03	\$188 million
Stock E	\$35.67	\$163 million
Stock F	\$12.54	\$158 million

If a portfolio manager wants to beat this index, the strategy that would give him the highest probability of beating the index would be to:

- A. overweight Stock C.
- B. overweight Stock D.
- C. underweight Stock D.

The correct answer is **A**.

In a price-weighted index, the index's value is determined by the average price of the constituent stocks, meaning that stocks with higher prices have a more significant impact on the index's performance.

Therefore, to increase the probability of outperforming such an index, a portfolio manager should focus on stocks with higher prices that are likely to perform well. Stock C, with a share price of \$98.12, is one of the highest-priced stocks in the given exhibit.

By overweighting Stock C in the portfolio, the manager increases the portfolio's sensitivity to the performance of high-priced stocks, which can lead to a higher probability of outperforming the price-weighted index if Stock C's price appreciates.

**B is incorrect.** Overweighting Stock D, which has a share price of \$12.03, would not be the most effective strategy for outperforming a price-weighted index. Despite its large market capitalization, the low share price of Stock D means it has less influence on the index compared to higher-priced stocks.

Therefore, focusing on Stock D would not leverage the characteristic of a price-weighted index where higher-priced stocks have more impact on the index's performance.

**C is incorrect.** Underweighting Stock D in the portfolio would not directly contribute to outperforming the price-weighted index. While it might reduce the portfolio's exposure to a lower-priced stock, which has less influence on a price-weighted index, the key to outperforming the index lies in overweighting stocks with higher prices that have a greater potential to appreciate.

Simply underweighting Stock D does not address the strategic approach needed to leverage the price-weighted index's characteristics effectively.

**LOS (h) Describe types of equity indexes.**

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Q.3615 The components of a market-capitalization index are given in exhibit 1.

Exhibit 1: Market-capitalization Index

Company	Stock Price	Shares Outstanding
AAA	\$100.32	100 million
BBB	\$80.96	160 million
CCC	\$72.17	35 million
DDD	\$66.13	180 million

If a portfolio manager wants to beat this index, the strategy that would *most likely* give him the highest probability of beating the index would be to:

- A. overweight Stock AAA.
- B. overweight Stock BBB.
- C. overweight Stock DDD.

The correct answer is **B**.

$$\text{Market capitalization}_{\text{AAA}} = \$100.32 \times 100 \text{ million} = \$10.03 \text{ billion}$$

$$\text{Market capitalization}_{\text{BBB}} = \$80.96 \times 160 \text{ million} = \$12.95 \text{ billion}$$

$$\text{Market capitalization}_{\text{CCC}} = \$72.17 \times 35 \text{ million} = \$2.53 \text{ billion}$$

$$\text{Market capitalization}_{\text{DDD}} = \$66.13 \times 180 \text{ million} = \$11.90 \text{ billion}$$

As its market capitalization is the largest, stock BBB will have the largest weight in the index. Therefore, if the portfolio manager wants to have the highest probability of beating the index, he must overweight Stock BBB in his portfolio.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (h) Describe types of equity indexes.**

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Q.3616 The performance of commodity indices can be different from that of the underlying commodities because:

- A. the indices consist of futures contracts.
- B. the indices also have an equity component.
- C. the indices overweight certain commodities.

The correct answer is **A**.

Commodity indices often do not mirror the exact performance of the underlying commodities primarily because these indices are composed of futures contracts. Futures contracts are standardized agreements to buy or sell a commodity at a predetermined price at a specific time in the future.

The pricing of these contracts incorporates expectations about the future supply and demand of the commodity, as well as the cost of carry, which includes storage costs, insurance, and interest rates. These factors can cause the performance of the commodity index, which is based on futures contracts, to diverge from the spot price movements of the commodities themselves.

This divergence can be particularly pronounced during periods of market stress or when there are significant changes in the supply and demand dynamics of the underlying commodities.

**B is incorrect.** This option incorrectly suggests that the presence of an equity component in commodity indices is a primary reason for the performance difference between the indices and the underlying commodities.

While it is true that some investment products may blend commodities with equities to achieve certain investment objectives, pure commodity indices typically do not contain equity components. Their performance difference from the underlying commodities is mainly due to the use of futures contracts, not equities.

**C is incorrect.** Overweighting certain commodities within an index can indeed affect its performance compared to a more evenly distributed index or the broader commodity market. However, this is not the primary reason why the performance of commodity indices can differ from that of the underlying commodities.

The core reason lies in the nature of the instruments used to construct the indices—futures contracts—and the various factors influencing futures pricing, such as the cost of carry and market expectations about future price movements.

Overweighting is more related to the index construction methodology and its impact on performance relative to other indices or investment benchmarks, rather than the fundamental difference in performance caused by the use of futures contracts.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (k) Describe indexes representing alternative investments.***

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Q.3617 Which of the following does the return on commodity indices reflect?

- I. The risk-free interest rate.
  - II. The changes in futures contract prices.
  - III. The roll yield.
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- A. I.
  - B. II & III.
  - C. I, II & III.

The correct answer is **C**.

The return on commodity indices is a multifaceted concept that encompasses several components, including:

- i. the risk-free interest rate,
- ii. changes in futures contract prices, and
- iii. the roll yield.

Each of these elements plays a crucial role in determining the overall return that investors might expect from investing in commodity indices.

The **risk-free interest rate** is a fundamental component of the return on commodity indices. It represents the return that investors can expect to earn on an investment that is considered free from credit risk.

In the context of commodity indices, the risk-free rate is relevant because the collateral required to hold futures positions typically earns this rate. Therefore, the risk-free interest rate directly influences the total return that investors receive from their investment in commodity indices.

The **Changes in futures contract prices** are another critical factor that affects the return on commodity indices. Commodity indices are often constructed using futures contracts on various commodities. As the prices of these futures contracts change due to fluctuations in the underlying commodity prices, the value of the commodity index also changes.

This means that investors in commodity indices are exposed to the price volatility of the commodities included in the index, and changes in futures contract prices can lead to gains or losses for the investors.

The **roll yield** is an additional component of the return on commodity indices that arises from the process of rolling futures contracts. When futures contracts approach their expiration dates, they must be replaced with new contracts with later expiration dates to maintain the investment position.

The roll yield refers to the gain or loss that results from this rolling process, depending on the structure of the futures curve. If the futures curve is in contango (future prices are higher than spot prices), rolling into more expensive contracts can result in a negative roll yield.

Conversely, if the futures curve is in backwardation (future prices are lower than spot prices), rolling into cheaper contracts can generate a positive roll yield.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes,  
LOS (k) Describe indexes representing alternative investments.**

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Q.3618 An equity analyst wants to create an index to measure the yields of US T-Bills. Which of the following is *most likely* the primary issue in creating such an index?

- A. The index will be difficult to price.
- B. The index will require frequent reconstitution.
- C. Creating an index of fixed income security is not possible.

The correct answer is **B**.

The primary issue in creating an index to measure the yields of US T-Bills is the need for frequent reconstitution. US Treasury Bills (T-Bills) are short-term government securities with maturities of less than one year. Due to their short maturity period, T-Bills are redeemed and reissued frequently. An index tracking the yields of such securities would need to be updated regularly to reflect the issuance of new T-Bills and the redemption of maturing ones. This frequent reconstitution is necessary to ensure that the index accurately reflects the current yield environment of US T-Bills. Moreover, the process of reconstitution involves selecting which T-Bills to include in the index, which can be a complex task given the variety of T-Bills issued with different maturities throughout the year.

**A is incorrect.** While pricing can be a challenge in creating fixed income indices due to the over-the-counter nature of many fixed income markets, this is not the primary issue for an index of US T-Bills. T-Bills are highly liquid, widely traded securities, and their prices are readily available. The U.S. Department of the Treasury regularly publishes T-Bill yields, making it relatively straightforward to price an index based on these securities.

**C is incorrect.** It is entirely possible to create an index of fixed income securities, including US T-Bills. Numerous fixed income indices exist, tracking various segments of the bond market, including government, corporate, and municipal bonds. These indices serve as benchmarks for the performance of fixed income investments and are used by investors to gauge the health of the bond market.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes,  
LOS (j) Describe types of fixed-income indexes.**

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Q.3619 In fundamentally weighted multi-market indices, the securities are weighted based on:

- A. market capitalization while the country weight in the index is based on its GDP.
- B. market capitalization while the country weight in the index is based on its domestic currency exchange rate compared to a basket of currencies.
- C. market capitalization while the country weight in the index is based on the number of constituent securities that originate from this country.

The correct answer is **A**.

In fundamentally weighted multi-market indices, securities are weighted based on their market capitalization, while the weight of each country within the index is determined by its Gross Domestic Product (GDP). This approach aims to provide a more economically representative view of the global markets, as it considers the economic size and output of each country rather than just the market value of its companies.

By using GDP as a weighting factor, these indices can offer a broader perspective on global economic activity, potentially leading to a more diversified and balanced investment portfolio. This method acknowledges that countries with larger economies can have a more significant impact on the global market, regardless of the market capitalization of their individual securities.

**B is incorrect.** This option suggests that the country weight in the index is based on its domestic currency exchange rate compared to a basket of currencies. This method would introduce a high level of volatility and currency risk into the index, which is not the objective of fundamentally weighted indices.

The use of currency exchange rates would also not accurately reflect the economic size or output of a country, which is better represented by GDP. Therefore, this approach is not used in fundamentally weighted multi-market indices.

**C is incorrect.** This option proposes that the country weight in the index is based on the number of constituent securities that originate from the country. While this method might reflect the diversity of companies within a country's market, it does not account for the economic size or significance of the country on a global scale.

A country with a large number of small companies could be overweighted compared to a country with fewer but much larger companies. This would not provide an accurate representation of the global economy, which is why GDP is a preferred measure for weighting countries in fundamentally weighted multi-market indices.

***CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (d) Compare the different weighting methods used in index construction.***

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Q.3871 The market float of a stock is *best* described as its:

- A. Total outstanding shares.
- B. Shares available to domestic investors.
- C. Outstanding shares excluding those held by controlling shareholders.

The correct answer is **C**.

The market float of a stock is best described as the number of shares that are available for trading by the general public, excluding those held by insiders, controlling shareholders, and other locked-in parties. This is because the market float provides a more accurate representation of the liquidity and availability of the stock in the open market.

Shares that are held by controlling shareholders are often not traded frequently, as these shareholders tend to hold onto their shares for longer periods. The higher the market float, the more shares are available for trading, which typically leads to better liquidity and less price manipulation by large trades.

**A is incorrect.** Total outstanding shares refer to all shares currently issued by a company, including those held by controlling shareholders and restricted stock. This figure does not accurately reflect the number of shares available for public trading, as it includes shares that may not be readily sold or bought in the market. These do not provide an accurate representation of the stock's liquidity or how easily it can be traded in the open market.

**B is incorrect.** Shares available to domestic investors might exclude international shares but does not necessarily account for shares held by controlling shareholders or restricted stock. While the domestic versus international distinction can affect the accessibility of shares for certain investors, it does not directly relate to the availability of shares for trading by the general public, regardless of the investors' location.

The key factor in determining market float is whether the shares are locked in or freely tradable, not the geographic location of the investors.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (c) Describe the choices and issues in index construction and management.**

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Q.3876 The performance of commodity indices:

- A. Reflects the risk-free interest rate.
- B. Is affected solely by changes in commodity prices.
- C. Is identical to the performance of underlying commodities.

The correct answer is **A**.

The performance of commodity indices is influenced by several factors, including:

- i. the risk-free interest rate,
- ii. changes in futures prices, and
- iii. the roll yield.

This multifaceted influence means that the indices' performance can diverge significantly from that of the underlying physical commodities. The risk-free interest rate plays a crucial role because it affects the cost of carrying futures contracts.

These contracts are financial instruments used to buy or sell a commodity at a predetermined price at a specific time in the future. The pricing of these contracts incorporates the risk-free rate, which is the theoretical return of an investment with no risk of financial loss. This rate influences the futures prices and, consequently, the performance of commodity indices.

**B is incorrect.** This option posits that the performance of commodity indices is affected solely by changes in commodity prices. While changes in commodity prices are indeed a critical factor, they are not the sole determinant of the indices' performance.

The indices are based on futures contracts, which means their performance also depends on the risk-free interest rate and the roll yield. The interaction between these elements can lead to scenarios where the indices' performance diverges from the actual movement in commodity prices.

**C is incorrect.** Claiming that the performance of commodity indices is identical to the performance of underlying commodities ignores the complexity of how these indices are constructed and operate. Commodity indices are not direct investments in physical commodities but rather in futures contracts related to those commodities.

The performance of these indices is thus influenced by factors beyond the physical commodities' price movements, including the risk-free interest rate and the roll yield. These additional components can cause the indices' performance to diverge from that of the underlying commodities, making this option inaccurate.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (k) Describe indexes representing alternative investments.**

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Q.3877 Most of the widely used global security indices are:

- A. Price-weighted.
- B. Equal-weighted.
- C. Market capitalization-weighted.

The correct answer is **C**.

Most of the widely used global security indices are market capitalization-weighted. This method involves weighting each component of the index according to its market capitalization, adjusted for float, which represents the proportion of shares available for trading by the general public.

The rationale behind using market capitalization as a weighting mechanism is that it reflects the total market value of a company's outstanding shares, providing a more accurate representation of its size and influence in the market. This approach ensures that companies with a larger market capitalization have a greater impact on the index's performance, which is considered a more realistic measure of the market's movements.

**A is incorrect.** Price-weighted indices assign weights based on the price of a company's shares, rather than its total market capitalization. In a price-weighted index, a stock with a higher price per share will have a greater influence on the index's performance, regardless of the company's overall size or market value.

This can lead to a distortion in the representation of the market, as smaller companies with high stock prices might exert undue influence over the index, overshadowing larger companies with more modest share prices. This method is not as widely used for global security indices due to its potential for misrepresentation of market dynamics.

**B is incorrect.** Equal-weighted indices assign the same weight to each stock in the index, regardless of the company's size or market capitalization. This approach treats all companies equally, giving the same importance to smaller companies as to larger ones.

While this can provide a more diversified index and reduce the dominance of large-cap stocks, it does not accurately reflect the market's structure, where larger companies naturally have a greater impact on market movements.

Equal weighting can also lead to higher turnover and associated costs, as the index must be rebalanced frequently to maintain equal weights.

**CFA Level 1, Topic 6 - Equity Investments, Learning Module 2: Security Market Indexes, LOS (c) Describe the choices and issues in index construction and management.**

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