

# CFA LEVEL II

## Portfolio Management

### Economics and Investment Markets

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#### ***CFA L2 Candidates***

*We've been receiving huge number of requests for help in understanding some challenging Case Studies of CFA Institute core.*

*Here, we are providing some support (in the form of audio explanation) to help all L2 candidates understand the same. The Case Studies all belong to the CFA Institute—we are just providing some support to help understand the concepts involved.*

*Hope it helps!*

## Economics and Investment Markets

Julie Carlisle is a financial planner at a large wealth management firm. One of her clients, Esteban Blake, just received a sizable inheritance. He invests a portion of the inheritance in an annuity that will immediately increase his income by a substantial amount. He enlists Carlisle's help to invest the remaining amount of the inheritance.

Blake informs Carlisle he would like some short-term bonds in his portfolio. Carlisle proposes purchasing a one-year domestic government zero-coupon bond. It has a face value of \$100 and is currently priced at \$96.37. Carlisle estimates the one-year real risk-free rate at 1.15% and expects inflation over the next year to be 2.25%.

In an effort to provide Blake with some exposure to international markets, Carlisle proposes three countries to look for investment opportunities. Selected data on the three countries are presented in Exhibit 1.

Exhibit 1 Selected Macroeconomic Data

	Nominal GDP Growth	Inflation Rate	Volatility of Real GDP Growth	Yield Curve Shape	Trailing 12- Month Equity Index P/E
Country #1	6.5%	4.0%	Low	Flat	16.5
Country #2	5.0%	2.5%	High	Upward slope	17.3
Country #3	3.5%	2.0%	Low	Flat	18.2

In her analysis, Carlisle observes that the spread between the three-year default-free nominal bond and the default-free real zero-coupon bond in Country #3 is 2.0%.

Blake expresses concern that stocks may be currently overvalued in Country #3 given the country's 20-year historical equity index P/E of 16.0. Carlisle comments:

I think the equilibrium P/E in Country #3 has increased because of changes in market conditions.

Carlisle predicts that Country #3 will slip into a recession next quarter. She thinks it will be short-lived, lasting only 12 months or so, and considers the impact of such a recession on the performance of the country's stocks and bonds.

## Economics and Investment Markets

### Exhibit 2 Three-Year Corporate Bonds from Country #3

<b>Corporate Bond</b>	<b>Moody's Investors Service Rating</b>	<b>Spread*</b>
Bond A	Aaa	1.4%
Bond B	Baa1	3.2%
Bond C	B3	5.3%

\* Spread versus three-year sovereign bond

## Question 18

Holding all else constant, the change in Blake's income will most likely result in:

- A. an increase in his marginal utility of consumption.
- B. an increase in his intertemporal rate of substitution.
- C. a decrease in his required risk premium for investing in risky assets.

## Answer

**C is correct.**

The additional annuity payment substantially increases Blake's income and wealth, which decreases his marginal utility of consumption. As a result, the average loss of marginal utility from any risk taking decreases as his wealth increases. Thus, he requires a lower risk premium and is willing to buy more risky assets.

### Question 19

The implied premium for inflation uncertainty for the one-year government zero-coupon bond proposed by Carlisle is closest to:

- A. 0.23%.
- B. 0.37%.
- C. 1.10%.

### Answer

**B is correct.**

The pricing equation for a default-free nominal coupon-paying bond is

$$P_t^i = \sum_{s=1}^N \frac{CF_{t+s}^i}{(1 + l_{t,s} + \theta_{t,s} + \pi_{t,s})^s}$$

For a one-year bond, the pricing formula reduces to

$$P_t = \frac{CF_{t+1}}{(1 + l_{t,1} + \theta_{t,1} + \pi_{t,1})^1}$$

Thus, the implied premium for inflation uncertainty for the one-year government zero-coupon bond is calculated as

$$\begin{aligned} \pi_{t,1} &= \frac{CF_{t+1}}{P_t} - (1 + l_{t,1} + \theta_{t,1}) \\ &= \frac{100}{96.37} - (1 + 0.0115 + 0.0225) \\ &= 1.0377 - 1.0340 \\ &= 0.0037, \text{ or } 0.37\% \end{aligned}$$

## Question 20

Based on the data in Exhibit 1, current real short-term interest rates would most likely be highest in:

- A. Country #1.
- B. Country #2.
- C. Country #3.

## Answer

**B is correct.**

Real short-term interest rates are positively related to both real GDP growth and the volatility of real GDP growth. Country #1 and Country #2 have the highest real GDP growth, as estimated by the difference between nominal GDP growth and average inflation ( $6.5\% - 4.0\% = 2.5\%$  and  $5.0\% - 2.5\% = 2.5\%$ , respectively), while Country #3 has the lowest real GDP growth ( $3.5\% - 2.0\% = 1.5\%$ ). Looking at the volatility of real GDP growth, Country #2 has high real GDP growth volatility, whereas Country #1 and Country #3 have low real GDP growth volatility. Therefore, Country #2 would most likely have the highest real short-term interest rates.

## Question 21

The recent change in Country #3's breakeven inflation rate suggests that the expected rate of inflation over the next three years is:

- A. less than 2.0%.
- B. equal to 2.0%.
- C. greater than 2.0%.

## Answer

**A is correct.**

The difference, or spread, between the yields on the country's three-year default-free nominal and on the default-free real zero-coupon bonds is 2.0%. This spread is known as the breakeven rate of inflation (BEI), which is composed of the expected rate of inflation plus a risk premium for the uncertainty of future inflation. Because this risk premium component is most likely positive, because investors are unlikely to be very confident in their ability to predict inflation accurately, the expected rate of inflation component would be less than 2.0%.

## Question 22

Which of the following changes in market conditions best supports Carlisle's comment regarding the equilibrium P/E for Country #3?

- A. An increase in the equity risk premium
- B. A decrease in uncertainty about future inflation
- C. A decrease in expectation of future real earnings growth

## Answer

**B is correct.**

Stock prices are a function of expected cash flows discounted by inflation expectations, the uncertainty of future inflation, and the equity risk premium, among other factors. Holding all else equal, a decline in the uncertainty of future inflation would result in lower discount rates and higher valuations. This result would support a higher equilibrium P/E, thus justifying Country #3's current trailing P/E being higher than its historical average.



**Question 23**

If Carlisle's prediction about the economy of Country #3 is realized, the yield curve in Country #3 will most likely:

- A. remain flat.
- B. become upward sloping.
- C. become downward sloping.

**Answer**

**B is correct.**

The yield curve in Country #3 is currently flat (Exhibit 1), and Carlisle predicts a recession. During a recession, short-term rates tend to be lower because central banks tend to lower their policy rate in these times. However, the impact of monetary policy on longer-term rates will not be as strong because the central bank will usually be expected to bring short-term rates back to normal as the recession recedes. Thus, the slope of the yield curve will likely become upward sloping during the recession.

## Question 24

Based on Exhibit 2, if Carlisle's prediction for Country #3 is realized, then over the next 12 months:

- A. Bond A would be expected to outperform Bond C.
- B. Bond B would be expected to outperform Bond A
- C. Bond C would be expected to outperform Bond B.

## Answer

**A is correct.**

If Country #3 experiences a recession over the next 12 months, the credit spreads for corporate bonds would be expected to widen as investors sell the low-quality debt of issuers with high default risk and trade up to the higher-quality debt of issuers with low default risk. The issuers with a good credit rating (like Aaa rated Bond A) tend to outperform those with lower ratings (like B3 rated Bond C) as the spread between low and higher quality issuers widens. As a result, Bond A would be expected to outperform Bond C over the next 12 months.