CHAPTER 25
THE TERM STRUCTURE AND INTEREST RATE DYNAMICS

1. (C) the same as it was on January 1, 20x6.

Explanation

If the spot rates evolve exactly as indicated by the forward curve, the forward price would remain unchanged.

(Module 25.2, LOS 25.c)

Related Material

SchweserNotes - Book 4

2. (C) TED spread.

Explanation

Comparing the TED spread with the 10-year swap spread, the TED spread more accurately reflects the risk in the banking system, while the 10-year swap spread mostly reflects differing supply and demand conditions. An I-spread refers to a bond yield net of the swap rate of the same maturity.

(Module 25.4, LOS 25.g)

Related Material

SchweserNotes - Book 4

3. (C) bullish steepening.

Explanation

During recessionary times, central banks may reduce short-term rates leading to a bullish steepening.

(Module 25.6, LOS 25.k)

Related Material

SchweserNotes - Book 4

4. (C) buying the 2-year bond in the spot market, going long the forward contract and selling the 3-year bond in the spot market.

Explanation

$F_{(2,1)} = P_3/P_2$ = \$98.98 but is quoted at \$94.55 and hence is cheap — buy it. A combination of a long position in the 2-year spot market, rolled over for 1 year at a locked-in forward rate (i.e., a long position in forward), would generate a return higher than the quoted 3-year spot rate.

(Module 25.1, LOS 25.a)

Related Material

SchweserNotes - Book 4

5. (B) exclusively represent expected future spot rates.

Explanation

The pure expectations theory, also referred to as the unbiased expectations theory, purports that forward rates are solely a function of expected future spot rates. Under the pure expectations theory, a yield curve that is upward (downward) sloping, means that short-term rates are expected to rise (fall). A flat yield curve implies that the market expects short-term rates to remain constant.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

6. (B) Upward sloping.

Explanation

The liquidity theory holds that investors demand a premium to compensate them for interest rate exposure and the premium increases with maturity. Add this premium to a flat curve and the result is an upward sloping yield curve.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

7. (C) $0.9345

Explanation

$f(2,1) = \left(1+S_3\right)^3 / \left(1+S_2\right)^2 - 1 = 7.01\%$

$F_{(2,1)} = 1/[1+ f(2,1)] = 1/(1.0701) = \$0.9345$

(Module 25.1, LOS 25.a)

Related Material

8. (B) an increase in the credit spread embedded in the reference.

Explanation

The swap spread is the spread between the fixed-rate on a market-rate swap and the Treasury rate on a similar maturity note/bond. Since the fixed rate is calculated from the reference rate yield curve, it is increased as the credit spread embedded in the reference rate yield curve increases.

(Module 25.4, LOS 25.f)

Related Material

SchweserNotes - Book 4

Holly Jameson, CFA, has recently started a new role as a bond analyst at her employer, Holt Investment Management, LLC, based in Farland. Her team leader has provided her with up-to-date but incomplete data on the benchmark term structure of interest rates, shown in Exhibit 1.

Exhibit 1: Farland Treasury Bond Rates

Maturity (years)	Spot	Forward	Par
1	2.30%	-	2.30%
2			3.14%
3			4.35%

Holly is evaluating a three-year, 6% annual coupon, benchmark bond trading at $108.30.

In a discussion in the staff dining room shortly after she joined the firm, Holly's colleague, Doug Ross, made a confident assertion:

"I really don't know how some people find bond trading difficult. For each specific maturity, spot rates are always lower than forward rates, and forward rates are always lower than corresponding yield-to-maturity. So you can always achieve a higher return investing in shorter maturity bonds by rolling down the yield curve. I've been doing that since my first day on the job."

Holt offers both domestic and international bonds to its clients to enable them to benefit from risk reduction through diversification. She has carried out some preliminary research on the Happyland bond market and has found that the yield curve has an unexpected shape and does not seem to be driven by interest rate expectations. She asks her team leader, Al Smith, for advice, who tells her:

"Things are strange in Happyland. Rates are influenced simply by supply and demand of bonds of specific maturities. Different types of investors want particular maturity bonds, and they never seem to deviate from their preferences. High demand for five-year bonds has pushed prices up and yields down."

Alex Allan, a bond analyst colleague of Holly, started another discussion with the group by stating.

"I'm more interested in what happens to bond prices when the yield curve changes. I need to estimate how much prices will change when short-term yeids increase while long-term yields stay constant."

9. (C) overvalued by $3.75.

Explanation

There are two approaches to valuation of the bond.

Approach 1: Bootstrap the missing spot rates:

The two-year spot rate can be derived using the one-year spot rate (2.3%) and two-year par rate (3.14%) as follows:

$$100 = \frac{3.14}{1.023} + \frac{103.14}{(1+S_2)^2}$$

$$96.93 = \frac{103.14}{(1+S_2)^2}$$

$$(1+S_2)^2 = \frac{103.14}{96.93} = 1.06406$$

$$S_2 = 3.15\%$$

Likewise, the three-year spot rate can be calculated using the one-year spot rate (2.3%), the two-year spot rate derived above (3.15%), and the three-year par rate (4.35%):

$$100 = \frac{4.35}{1.023} + \frac{4.35}{(1.0315)^2} + \frac{104.35}{(1+S_3)^3}$$

$$91.66 = \frac{104.35}{(1+S_3)^3}$$

$$(1+S_3)^3 = \frac{104.35}{91.66} = 1.13845$$

$$S_3 = 4.42\%$$

Having derived the relevant spot rates. Holly can now value the three-year, 6% benchmark bond discounting the future cash flows using the spot rates:

$$P_0 = \frac{6}{1.023} + \frac{6}{(1.0315)^2} + \frac{106}{(1.0442)^3} = 104.58$$

Approach 2: Use the three-year par rate (4.35%) as the yield and use the standard TVM keys:

N=3; I/Y= 4.35%; PMT = 6; FV = 100; CPT PV = $104.55

Note the difference in value is due to rounding error in calculating individual spot rates.

The bond is trading at $108.30, and is therefore overvalued by $3.75.

(Module 25.1, LOS 25.b)

Related Material

SchweserNotes - Book 4

10. (C) **inaccurate in both respects.**

Explanation

Ross's comments about the relative values of spots, forwards, and yields-to-maturity is inaccurate; when the yield curve is upward-sloping, forward curve will be higher than spot curve and spot curve will be higher than yield curve. If the yield curve is downward-sloping, the yield curve will be higher than the spot curve which will be higher than the forward curve.

Riding the yield curve describes a strategy whereby an investor will buy a bond with a maturity greater than his investment horizon and sell it before maturity. This strategy will provide higher returns than buying a bond and holding it to maturity over the same period only if the yield curve is upward sloping and its shape remains stable over the investment period. If the yield curve steepens sufficiently the strategy may produce losses.

(Module 25.2, LOS 25.d)

Related Material

SchweserNotes - Book 4

11. (B) **Segmented markets theory.**

Explanation

The segmented markets theory states that the shape of the yield curve is determined by varying levels of supply and demand for bonds of specific maturities, and investors only deal in bonds with their preferred maturities, regardless of yields on bonds of different maturity.

The preferred habitat theory has similar principles, but investors may be tempted to invest in bonds that are not of their preferred maturity if expected returns are attractive enough, with low prices and high yields.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

12. (A) **key rate duration.**

Explanation

Assuming an upward-sloping yield curve as a starting point, if short-term yields increase, but long-term yields remain constant, the yield curve will flatten. This is a non-parallel shift in the yield curve, which makes effective duration an inappropriate measure of bond price sensitivity. Key rate duration is the preferred measure for non-parallel shifts in the yield curve.

Effective duration is only suitable for measuring the sensitivity of a bond's price to parallel shifts in the yield curve. Macaulay duration measures the weighted average length of time to receive the present value of a bond's cash flows and is inappropriate in this instance.

(Module 25.6, LOS 25.i)

Related Material

SchweserNotes - Book 4

13. (B) key rate duration associated with the maturity of the rate that changed.

Explanation

This is how an analyst uses key rate durations: For a given change in the yield curve, each rate change is multiplied by the associated key rate duration. The sum of those products gives the change in the value of the portfolio. If only the five-year interest rate changes, for example, then the effect on the portfolio will be the product of that change times the five-year key rate duration.

(Module 25.6, LOS 25.i)

Related Material

SchweserNotes - Book 4

14. (C) bearish flattening.

Explanation

During expansionary times, to combat rising inflation, central banks may raise short-term rates leading to a bearish flattening of the yield curve.

(Module 25.6, LOS 25.k)

Related Material

SchweserNotes - Book 4

15. (C) higher.

Explanation

Since a bond with an embedded call option would trade at a lower price than a comparable option-free bond (i.e., its market price would be lower), the additional spread needed to force the model value to the (lower) market price will be higher. Because the Z-spread would inadvertently include compensation for option risk as well as for credit and liquidity risks, it is not appropriate for valuing bonds with embedded options.

(Module 25.4, LOS 25.g)

Related Material

SchweserNotes - Book 4

16. (C) the real economy and inflation.

Explanation

Volatility in long-term rates is most likely linked to uncertainty about the real economy and inflation, whereas volatility in short-term rates is most likely linked to monetary policy.

(Module 25.6, LOS 25.j)

Related Material

SchweserNotes - Book 4

17. (A) swap rate and the corresponding Treasury rate.

Explanation

The swap spread is the swap rate minus the corresponding Treasury rate.

(Module 25.4, LOS 25.f)

Related Material

SchweserNotes - Book 4

18. (C) added to the spot rate curve to generate discount rates for each of the bond's cash flows such that the present value of the cash flows is exactly equal to the market price of the bond.

Explanation

Z-spread is the constant spread added to the spot rate curve to generate discount rates which then value the bond at its current market price. The difference between yields of a risky and government bond will be same as the Z-spread only when the yield curve is flat. A Zero-volatility binomial tree does not exist!

(Module 25.4, LOS 25.g)

Related Material

SchweserNotes - Book 4

19. (C) less than current forward rates.

Explanation

When expected spot rates are less than the forward rates priced by the market, bonds are undervalued (they are discounted at too high a rate) and hence should be purchased.

(Module 25.2, LOS 25.c)

Related Material

SchweserNotes - Book 4

20. (C) liquidity preference theory.

Explanation

Under the liquidity preference theory, investors would earn an extra return for investing in longer-maturity bonds rather than in shorter-maturity bonds. Such extra positive risk-premium linked to maturity of the bonds is absent in the pure expectations and the market segmentation theory.

(Module 25.2, LOS 25.d)

Related Material

SchweserNotes - Book 4

21. (C) **expected future spot rate plus a rate exposure premium.**

Explanation

The liquidity theory of the term structure proposes that forward rates reflect investors' expectations of future rates plus a liquidity premium to compensate them for exposure to interest rate risk, and this liquidity premium is positively related to maturity. The implication of the liquidity theory is that forward rates are a biased estimate of the market's expectation of future rates, since they include a liquidity premium.

(Module 25.2, LOS 25.h)

Related Material

SchweserNotes - Book 4

22. (A) **6.36%**

Explanation

$F_{(2,3)} = P_5 / P_2 = 0.7835/0.9426 = 0.8312$

$[1+f(2,3)]^3 = 1/F_{(2,3)} = 1/0.8312 = 1.2031$

$f(2,3) = 6.36\%$

(Module 25.1, LOS 25.a)

Related Material

SchweserNotes - Book 4

23. (A) **67 bps.**

Explanation

The 3-year swap fixed rate SFR3 is determined by solving:

$SFR_3 (P_1 + P_2 + P_3) + P_3 = 1$ or $SFR_3 (0.9615 + 0.9070 + 0.8396) + 0.8396 = 1$

$SFR_3 (2.7081) = 0.1604$

$SFR_3 = 0.1604/2.7081 = 5.92\%$

Swap spread = SFR_3 – 3-year government bond yield = 5.92% – 5.25%

= 0.67% or 67 bps

(Module 25.3, LOS 25.e)

Related Material

SchweserNotes - Book 4

24. (B) **monetary policy.**

Explanation

Volatility in short-term rates is most likely linked to monetary policy, whereas volatility in long-term rates is most likely linked to uncertainty about the real economy and inflation.

(Module 25.6, LOS 25.j)

Related Material

SchweserNotes - Book 4

25. (A) longer than the investor's horizon.

Explanation

If the yield curve is upward sloping and is expected to remain the same, higher returns can be obtained by riding the yield curve, i.e., buying bonds with a longer maturity than the investor's horizon.

(Module 25.2, LOS 25.d)

Related Material

SchweserNotes - Book 4

26. (B) upward sloping.

Explanation

The liquidity theory holds that investors demand a premium to compensate them to interest rate exposure and the premium increases with maturity. When the yield curve under pure expectations is flat (i.e., interest rates in future are expected to be same as current rates), addition of liquidity premium (which increases with maturity) would result in an upward sloping yield curve.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

27. (C) Curvature

Explanation

Changes in the shape of yield curve is explained by (in order of importance): level, steepness and curvature.

(Module 25.6, LOS 25.i)

Related Material

SchweserNotes - Book 4

28. (C) Short-term rates are typically more volatile than long-term rates.

Explanation

Volatility of rates is inversely related to maturity: long-term rates are less volatile than short-term rates.

(Module 25.6, LOS 25.j)

Related Material

SchweserNotes - Book 4

29. (B) more comparable across countries and have a greater number of yields at various maturities.

Explanation

Swap rate curves are typically determined by dollar denominated borrowing based on MRR. These rates are determined by market participants and are not regulated by governments. Swap rate curves are not affected by technical market factors that

affect the yields on government bonds. Swap rate curves are also not subject to sovereign credit risk (potential government default on debt) that is unique to government debt in each country. Thus swap rate curves are more comparable across countries because they reflect similar levels of credit risk. There is also a wider variety of maturities available for swap rate curves, relative to a yield curve based on US Treasury securities, which has only four on-the-run maturities of two years or more. Swap rate curves typically have 11 quotes for maturities between 2 and 30 years.

(Module 25.3, LOS 25.e)

Related Material

SchweserNotes - Book 4

30. (B) **positive.**

Explanation

TED spread is defined as MRR minus T-bill yield and is expected to be positive to reflect the higher credit risk implied in MRR relative to T-bills. This would hold true regardless of the slope of the yield curve.

(Module 25.4, LOS 25.g)

Related Material

SchweserNotes - Book 4

31. (A) **300 bps**

Explanation

Since the spot rate curve is flat, we can simply compute the yield on the bond and subtract the spot rate from it to obtain the Z-spread.

PV = – 95.72; N = 15; PMT = 7.50; FV = 100; I/Y = ? = 8%.

Z-spread = 8% - 5% = 3% or 300bps

(Module 25.4, LOS 25.g)

Related Material

SchweserNotes - Book 4

32. (C) **reflects sovereign credit risk.**

Explanation

Swap rate curves are typically determined by dollar denominated borrowing based on MRR. These rates are determined by market participants and are not regulated by governments. Swap rate curves are not affected by technical market factors that affect the yields on government bonds. The swap rate curve is also not subject to sovereign credit risk (potential government default on debt) that is unique to each country.

(Module 25.3, LOS 25.e)

Related Material

SchweserNotes - Book 4

33. (C) level and curvature.

Explanation

The decrease in short-term and long-term rates is an indication of change in level of interest rates. Because intermediate-term rates change differently than the short-term and long-term rates, there is also a change in the curvature of the yield curve.

(Module 25.6, LOS 25.i)

Related Material

SchweserNotes - Book 4

34. (C) The segmentation theory.

Explanation

The market segmentation theory contends that lenders and borrowers have preferred maturity ranges, and that supply and demand forces in each maturity range determines yields. This theory relies on the idea that some investors have restrictions (either legal or practical) on their preferred maturity structure and that they are unwilling or unable to move out of their preferred ranges.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

35. (B) for the full investment horizon, or for part of it, and then rolling over the proceeds for the balance of the investment horizon at the forward rate.

Explanation

The pure expectations theory can be explained using a "break-even rate" line of reasoning. The break-even rate is the forward rate that leaves investors indifferent between investing for the full term of their investment horizon or investing in part of the horizon and rolling the investment over at the "break-even" forward rate for the remainder of the term.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

36. (A) steeper than the spot curve and above the spot curve.

Explanation

When the spot curve is upward sloping, the forward curve will be lie above the spot curve and will also be upward sloping with a steeper slope.

(Module 25.1, LOS 25.a)

Related Material

SchweserNotes - Book 4

37. (A) **preferred habitat theory**

Explanation

Money market funds generally invest in short-term securities. Their inclination to chase higher yields in the longer maturity spectrum is consistent with the preferred habitat theory whereby investors will leave their preferred habitat if they are compensated with higher returns. If Market segmentation theory held, investors would not have left their market segment and therefore no regulatory action would be necessary.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

38. (B) **Short-term holding period return of long-maturity bonds exceeds the short-term holding period returns of short-maturity bonds.**

Explanation

Market evidence shows that short-term holding period returns from investing in long-maturity bonds exceed the short-term holding period returns from investing in short-maturity bonds.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

39. (C) **10**

Explanation

Select all forward rates f(j,k) such that $j + k \leq 5$. There are 10 forward rates possible: $f(1,1)$, $f(1,2)$, $f(1,3)$, $f(1,4)$, $f(2,1)$, $f(2,2)$, $f(2,3)$, $f(3,1)$, $f(3,2)$, $f(4,1)$

(Module 25.1, LOS 25.a)

Related Material

SchweserNotes - Book 4

40. (B) **long-term rates to be higher than investors' expectations of future rates, because of the liquidity premium**

Explanation

The liquidity theory of the term structure proposes that forward rates reflect investors' expectations of future rates plus a liquidity premium to compensate them for exposure to interest rate risk, and this liquidity premium is positively related to maturity. The implication of the liquidity theory is that forward rates, since they include a liquidity premium, are a biased estimate of the market's expectation of future spot rates.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

41. (A) Bullish flattening.

Explanation

During periods of market turmoil, a flight to safety may reduce long-term government bond yields resulting in a bullish flattening of the yield curve.

(Module 25.6, LOS 25.k)

Related Material

SchweserNotes - Book 4

42. (B) 7.09%

Explanation

S_1 = 5.00% given

For the 2-year par bond,

$$100 = \frac{6.00}{(1.05)} + \frac{106}{(1+S_2)^2}$$

$$94.29 = \frac{106}{(1+S_2)^2}$$

$(1+S_2)^2 = 106/94.29 = 1.1242$

$(1+S_2) = 1.0603$

$S_2 = 6.03\%$

For the 3-year par bond,

$$100 = \frac{7.00}{(1.05)} + \frac{7.00}{(1.0603)^2} + \frac{107.00}{(1+S_3)^3}$$

$$87.11 = \frac{107.00}{(1+S_3)^3}$$

$(1+S_3)^3 = 107/87.11 = 1.2283$

$(1+S_3) = 1.0709$ or $S_3 = 7.09\%$

(Module 25.1, LOS 25.b)

Related Material

SchweserNotes - Book 4

43. (B) local expectations theory.

Explanation

Local expectations theory asserts that in the very short term, the expected return for every bond is the risk-free rate but does not extend the risk-neutrality assumption to every maturity strategy like the unbiased expectations theory.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

44. (B) government spot curve.

Explanation

While wholesale banks extensively hedge their assets and/or liabilities using the swap market, retail banks typically have very little exposure to the swap market. Accordingly, the government spot curve is most appropriate for retail banks while the swap rate curve may be most appropriate for wholesale banks.

(Module 25.3, LOS 25.e)

Related Material

SchweserNotes - Book 4

45. (C) the fixed rate on an interest rate swap and the rate on a Treasury bond of maturity equal to that of the swap.

Explanation

A swap spread is the difference between the fixed rate on an interest rate swap and a Treasury bond of maturity equal to that of the swap.

(Module 25.4, LOS 25.f)

Related Material

SchweserNotes - Book 4

46. (B) 3% if the bond is held to maturity provided that the yield curve remains flat at 3%.

Explanation

There is no price risk for a default-free bond held to maturity. However, there is reinvestment risk for the coupon payments received during the life of the bond (in this instance, the bond is a par bond and hence has the same coupon rate as its yield). If the yield curve shifts down, the reinvestment rate would be lower and the realized holding period return would be lower than 3%.

(Module 25.1, LOS 25.a)

Related Material

SchweserNotes - Book 4

47. (B) interest rates are expected to increase in the future.

Explanation

The yield curve slopes upward because short-term rates are lower than long-term rates. Since market rates are determined by supply and demand, it follows that investors (demand side) expect rates to be higher in the future than in the near-term.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

48. (B) **purchase bonds because the market is discounting future cash flows at "too high" of a discount rate.**

Explanation

If an investor believes future spot rates will be lower than indicated by today's forward rates, then she should purchase bonds (at a presumably attractive price) because the market appears to be discounting future cash flows at "too high" of a discount rate.

(Module 25.2, LOS 25.c)

Related Material

SchweserNotes - Book 4

49. (C) **Segmented markets theory.**

Explanation

Under segmented markets theory investors in one maturity segment of the market will not move into any other maturity segments.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

50. (A) **increase the duration of the portfolio.**

Explanation

The question is asking for least appropriate strategy. Given an expectation of steepening of the yield curve, an active bond manager would reduce the duration of the portfolio.

(Module 25.2, LOS 25.c)

Related Material

SchweserNotes - Book 4

51. (A) **2.01%**

Explanation

S_1 = 1.00% given

For a 2-year bond,

$$100 = \frac{2.00}{(1.01)} + \frac{102}{(1+S_2)^2}$$

$$98.01 = \frac{102}{(1+S_2)^2}$$

$(1+S_2)^2 = 102/98.01 = 1.0407$

$(1+S_2) = 1.0201$

$S_2 = 2.01\%$

(Module 25.1, LOS 25.b)

Related Material

SchweserNotes - Book 4

52. (A) the yield curve usually slopes upward.

Explanation

The pure expectations hypothesis says that the shape of the yield curve only reflects expectations of future short-term rates. Yet, the yield curve generally slopes upward. The liquidity theory says that the yield curve incorporates expectations of short-term rates; however, the tendency for the yield curve to slope upward reflects the demand for a higher return to compensate investors for the extra interest rate risk associated with bonds with longer maturities.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

53. (B) $982.65

Explanation

Add the Z-spread to each of the spot rates to discount the bond's cash flows

$$\frac{25}{\left(1+\frac{0.045+0.0045}{2}\right)}+\frac{25}{\left(1+\frac{0.05+0.0045}{2}\right)^2}+\frac{25}{\left(1+\frac{0.0525+0.0045}{2}\right)^3}+\frac{1025}{\left(1+\frac{0.055+0.0045}{2}\right)^4}$$

= $982.65

(Module 25.4, LOS 25.g)

Related Material

SchweserNotes - Book 4

54. (B) 6.06%

Explanation

% Δ P = –(0.50)(1.0) – (2.70)(0.25) – (7.23)(–1) = 6.06%

(Module 25.6, LOS 25.i)

Related Material

SchweserNotes - Book 4

55. (C) an interest rate for some future period.

Explanation

The pure expectations theory can be explained using a "locked-in-rate" line of reasoning, whereby forward rates are interpreted as the rate that can be "locked in" for some future period.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

56. (C) 1%

Explanation

$(1+S_2)^2 = (1+s_1)[1+f(1,1)]$

$f(1,1) = (1.04)^2/(1.07) - 1 = 0.0108 = 1.08\%$

(Module 25.1, LOS 25.a)

Related Material

SchweserNotes - Book 4

57. (B) expected future spot rates.

Explanation

The pure expectations theory, also referred to as the unbiased expectations theory, purports that forward rates are solely a function of expected future spot rates. This implies that long-term interest rates represent the geometric mean of future expected short-term rates, nothing more.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

58. (A) Less than the current forward rate.

Explanation

Existence of a liquidity premium under the liquidity preference theory implies that the current forward rate is an upwardly biased estimate of the future spot rate.

(Module 25.5, LOS 25.h)

Related Material

SchweserNotes - Book 4

Lihua Zhou has recently been hired by Ragun Asset Management, and is currently working for the fixed income team. Zhou receives a communication from Cindy Roll, chief economist, and makes the following notes:

Forecast 1:	U.S. Federal Reserve is increasingly concerned with rising inflation and expected to tighten monetary policy during the next meeting.
Forecast 2:	The EU zone is expected to see a bullish flattening of the yield curve.

Zhou notices that the firm's portfolio in the EU zone is almost exclusively medium remaining maturity (10 - 11 years) notes.

Zhou attends an informal discussion group with colleagues who have also recently joined the firm. During their discussion, Amanda Eden, one of Ragun's risk analysts, made two comments:

Comment 1:	"There are lots of bond spreads, each with different bases. For instance, the spread I'm tracking at the moment measures the difference between the return on Treasury bills and the interest rate used to price the Eurodollar futures contracts."
Comment 2:	"If the spread widens, it's an indicator that risk in the banking system is increasing."

59. (C) A bearish flattening.

Explanation

To combat rising inflation, central banks may raise short-term rates (tightening monetary policy) resulting in a bearish flattening (increase in short-term rates) of the yield curve.

(Module 25.6, LOS 25.k)

Related Material

SchweserNotes - Book 4

60. (A) Rotate into a barbell strategy.

Explanation

A bullish flattening of the yield curve would result from decline in longer-term yields. Current portfolio composition is described as intermediate-term bullet portfolio. A rotation into a barbell strategy (short- and long-term) would allow price gains on longer maturity portion of the barbell, while keeping the change duration neutral. A shift to longer-term bullet would be most advantageous but would increase the duration of the portfolio (not duration-neutral). A shift to short bullet portfolio would not capitalize the expectations in Forecast 2.

(Module 25.6, LOS 25.k)

Related Material

SchweserNotes - Book 4

61. (A) TED spread.

Explanation

TED spread is the difference between the MRR (captures the risk of interbank loans) and T-bill yield. The MRR-OIS spread measures the difference between MRR and the overnight indexed swap rate, and is a measure of general credit risk and well-being in the banking system.

The Z-spread is the constant spread, when added to benchmark spot rates, makes the present value of a bond's future cash flows equal to its market value. The Z-spread measures credit, liquidity, and option risk on a risky bond.

(Module 25.4, LOS 25.g)

Related Material

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62. (A) correct.

Explanation

A widening TED spread is an indicator that interbank loans are becoming more risky, and that market participants believe banks are becoming more likely to default.

(Module 25.4, LOS 25.g)

Related Material

SchweserNotes - Book 4

63.

	$f(1,1)$	$f(2,1)$
(C)	6%	7%

Explanation

$f(1,1) = (1+S_2)^2 / (1+S_1) - 1 = 6\%$

$f(2,1) = ((1+S_3)^3 / (1+S_2)^2 - 1 = 7\%$

(Module 25.1, LOS 25.a)

Related Material

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64. (A) may have any shape.

Explanation

The liquidity theory holds that investors demand a premium to compensate them to interest rate exposure and the premium increases with maturity. Even after adding the premium to a steep downward sloping yield curve the result will still be downward sloping.

(Module 25.5, LOS 25.h)

Related Material

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65. (C) 4.08%

Explanation

SFR_2 can be computed as:

$$SFR_2/(1+S_1)+SFR_2/(1+S_2)^2+1/(1+S_2)^2=1$$

$$SFR_2/(1.0305)+SFR_2/(1.041)^2+1/(1.041)^2=1$$

$$SFR_2/(1.0305)+SFR_2/(1.0837)+1/(1.0837)=1$$

$$SFR_2/(1.0305)+SFR_2/(1.0837)=0.07722$$

$$SFR_2(1/(1.0305)+1/(1.0837))=0.07722$$

$$SFR_2(1.8932)=0.07722$$

$SFR_2 = 0.07722/1.8932 = 0.0408$ or 4.08%

(Module 25.4, LOS 25.f)

Related Material

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66. (B) Statement 2 but not statement 1.

Explanation

Swap rates are not spreads and hence the swap rate curve does not indicate credit spread. The swap rate curve can be used instead of government bond yield curve to indicate premium for time value of money.

(Module 25.3, LOS 25.e)

Related Material

SchweserNotes - Book 4

67. (A) Decrease the key rates at the short end of the yield curve.

Explanation

Decreasing the key rates at the short end of the yield curve makes an upward sloping yield curve steeper. Performing the corresponding change in portfolio value will determine the risk of a steepening yield curve.

(Module 25.3, LOS 25.e)

Related Material

SchweserNotes - Book 4

68. (A) changing the yield of a specific maturity.

Explanation

Key rate duration can be defined as the approximate percentage change in the value of a bond or bond portfolio in response to a 100 basis point change in a key rate, holding all other rates constant, where every security or portfolio has a set of key rate durations, one for each key rate maturity point.

(Module 25.6, LOS 25.i)

Related Material

SchweserNotes - Book 4

69. (C) Swap rates are less volatile than government bond yields.

Explanation

Lower volatility of swap rates relative to government bond yields as a generalization is an incorrect statement.

(Module 25.3, LOS 25.e)

Related Material

SchweserNotes - Book 4

Martha Garret, CFA, manages fixed-income portfolios for Jones Brothers, Inc. (JBI). JBI has been in the portfolio management business for over 23 years and provides investors with access to actively managed equity and fixed-income portfolios. All of JBI's fixed-income portfolios are constructed using U.S. debt instruments. Garret's primary portfolio responsibilities are the Quasar Fund and the Nova Fund, both of which are long fixed-income portfolios consisting of Treasury securities in all maturity ranges. The Quasar Fund holdings as of March 15 are provided in Exhibit 1. A comparison of key rate durations for the Quasar Fund and Nova Fund is provided in Exhibit 2.

Exhibit 1: Quasar Fund

Bond	Maturity (years)	Coupon	Yield	Par Value	Market value	Duration
A	2	5.0%	5.0%	4,000,000	4,000,000	1.86
B	5	4.5%	6.0%	3,500,000	3,278,851	4.32
C	15	8.0%	7.0%	2,750,000	3,000,468	8.90
D	30	6.5%	4.0%	6,450,000	9,238,340	15.90

Exhibit 2: Key Rate Durations for Quasar Fund & Nova Fund

Fund	Maturity (years)			
	2	5	15	30
Quasar Fund	0.90	1.20	1.80	6.10
Nova Fund	0.40	2.50	3.40	1.10

Of particular importance to Garret and her colleagues is the degree of interest rate risk exposure unique to each portfolio under JBI's management. Driving the increased awareness of the portfolios' interest rate exposure is the double-digit growth in assets under management that JBI's fixed-income portfolios have experienced in the past five years. Interest in the company's fixed income portfolios continues to grow and as a result, all portfolio managers are required to attend weekly meetings to discuss key portfolio risk factors. At the last meeting, Miranda Walsh, a principal at JBI, made the following comments:

"The variance of daily interest rate changes has been trending higher over the past three months, leading us to believe that a period of high volatility is approaching in the next 12 to 18 months. However, the reliability is questionable because the volatility estimates were derived using an option pricing model, which assumes constant interest rates."

"Also, the Treasury spot rate curve currently has a similar shape to the yield curve on Treasury coupon securities, which according to the market segmentation theory of interest rate term structure, indicates a relatively high level of demand from investors for intermediate term securities. Overzealous trading by investors unwilling to move into other maturity ranges may create mispricing and opportunities for arbitrage."

After the meeting, Walsh and JBI's other principals met to discuss a new international portfolio opportunity. At Walsh's suggestion, the principals selected Garret as the lead portfolio manager for the new fund, which will be titled the Atlantic Fund. One of the other portfolio managers, Greg Terry, CFA, suggested to Garret that she utilize the MRR swap curve as a benchmark for the Atlantic fund rather than using local government yield curves. Terry justifies his suggestion by claiming that "the lack of government regulation in the swap market makes swap rates and curves directly comparable between different countries despite fewer maturity points with which to construct the curve as compared to a government yield curve. Furthermore, credit risk in the swap curves of various countries is similar, thus avoiding the complications associated with different levels of sovereign risk embedded in government yield curves." Intrigued by the idea of using the swap curve, Garret has her assistant begin gathering a range of current and forward MRR rates.

70. (C) **Walsh is incorrect with respect to both interest rate volatility and term structure.**

Explanation

Option pricing models assume a constant volatility of interest rates but not a constant level of interest rates. Walsh's first statement is incorrect. The market segmentation theory says that the term structure of interest rates is determined solely by the supply/demand for a given maturity sector. The statement is incorrect, however, because high demand from investors (who wish to lend money) would push interest rates lower, not higher, as observed in the term structure.

(Module 25.3, LOS 25.e)

Related Material

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71. (B) **incorrect because there are actually more maturity points to construct the swap curve.**

Explanation

Terry's justification is incorrect. There are actually more maturity points in the swap market from which a swap curve can be derived. The rest of Terry's statements are correct.

(Module 25.6, LOS 25.i)

Related Material

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