Asset Alocation - Answers

CAPITAL MARKET EXPECTATIONS

THE TOTAL POINT VALUE FOR THIS QUESTION SET IS 9 POINTS

Lindsey Buckingham, CFA, chief economist at World Financial Management (WFM), is being interviewed by a prominent financial reporter. Buckingham explains that the global economy is still sluggish. Short-term interest rates in the United States are significantly lower than long-term rates. The U.S. economy is still feeling the effects of a major recession, brought on by the coronavirus. The federal government is using its two primary tools to close the output gap.

Question 1 of 17

Identify the two primary tools that Buckingham refers to and **explain** what the government is doing with each tool.

Explanation

The tools are monetary and fiscal policy. Both are expansionary.

- **Monetary policy:** The money supply is being increased at an above-average rate, primarily driving down short-term rates to stimulate the economy.
- **Fiscal policy:** It is expansive with the deficit (government spending – taxes) being increased to stimulate the economy.

Scoring key:

4 points total: 1 point each for identifying the two tools. 1 point each for explaining what kinds of actions are consistent with expansionary policy for each.

(Module 1.4, LOS 1.h)

Related Material
SchweserNotes - Book 1

Question 2 of 17

Given these two government tools, **describe** the *most likely* shape of the yield curve: flat, moderately steep, steep, or inverted.

Explanation

When both monetary and fiscal policies are stimulative, the yield curve is steep (upward sloping) and the economy is likely to grow.

Scoring key:

2 points total: 2 points for stating that when both monetary and fiscal policies are stimulative, the shape of the yield curve is steep (upward sloping).

(Module 1.4, LOS 1.i)

Related Material
SchweserNotes - Book 1

Question 3 of 17

As the meeting is ending, the reporter asks Buckingham, "What is the best time to buy equity and sell bonds? Is it the slowdown, early expansion, or initial contraction?"

Which of the following stages of the business cycle will be relatively better for stock rather than bond returns?

A) Slowdown.
B) **Early expansion.** ✓
C) Initial contraction.

Explanation

The correct answer is early expansion.

Scoring key:

1 point for selecting early expansion.

(Module 1.3, LOS 1.f)

Related Material
SchweserNotes - Book 1

Question 4 of 17

Justify your response by referring to both stock and bond performance in the stage chosen.

Explanation

In an early expansion, stocks move in anticipation of economic activity and are generally rising. In contrast, bond yields would be bottoming or begin to rise, eventually leading to declining bond prices and poor returns.

Candidate discussion:*Note that a slowdown would favor bonds, and in a contraction, stock prices do not increase until later in the contraction.*

Scoring key:

2 points for a correct discussion of expected stock and bond performance during early expansion.

(Module 1.3, LOS 1.f)

Related Material
SchweserNotes - Book 1

TOPIC: CAPITAL MARKET EXPECTATIONS

THE TOTAL POINT VALUE FOR THIS QUESTION SET IS 12 POINTS

Steve Summer works in the capital marketing forecasting unit of Global Asset Management (GAM). He has been asked to review the firm's long-term bond market return expectations for Country X. His unit has been using bond YTM (yield to maturity) as estimated return, but Summer believes the reinvestment assumptions inherent in the YTM approach are unrealistic. He decides to apply the risk premium (building block) approach.

The current 1-year government bond nominal yield is 3.10%, and Summer's projects the following risk premiums:

Estimated inflation	2.00%
Credit premium for AAA vs. govt. bonds	20 bp
Credit premium for A vs. AAA bonds	30 bp
Credit premium for BBB vs. A bonds	35 bp
Maturity premium for 20 vs. 1-year bonds	10 bp
Liquidity premium for corporate vs. govt. bonds	8 bp

GAM's investment policy committee has become concerned by recent economic and political trends. While they think each is a very low probability event, they ask Summer to consider how asset classes are most likely to behave if the economy enters either a period of increasing inflation, or a period of deflation and potentially negative interest rates. Summer focuses his analysis on four asset classes:

- Cash equivalents (CE)
- Bonds (B) in the form of default-free government bonds
- Equity (E)
- Real estate (RE) in the form of income-producing rental property

Summer is also preparing an analysis of two emerging market economies, Estan and Mstan. He has prepared data for several key variables to consider:

Variable	Estan	Mstan
Expected nominal GDP trend growth	6%	4.5%
Population growth rate	4.0%	2.5%
Court system	Well developed with relatively independent judges	Judges are appointed and removed frequently
Central bank	The central bank was just placed under direct control of the country's president and guarantees an "easy money policy"	A quasi-independent entity following a Taylor rule approach
Foreign debt to GDP	75%	40%
Foreign ST debt to foreign currency reserves	150%	80%
Capital flows approach to currency forecast	Depreciation of currency value	Appreciation of currency value

Question 5 of 17

Using only the data provided and the risk premium (building block) approach, **calculate** the return in percent for 20-year A rated corporate bonds.

Explanation

The correct answer is 3.78%.

3.10 + 0.20 + 0.30 + 0.10 + 0.08 = 3.78%

Candidate discussion: *Based on the case facts and question asked, inflation and the BBB premium are not relevant because the starting point provided is the 1-year nominal rate. The nominal rate already includes an inflation component, and the bond evaluated is rated A, not BBB rated.*

Scoring key:

3 points for 3.78% and up to 2 points partial credit for showing any four of the five correct buildup components.

(Module 2.1, LOS 2.a)

Related Material
SchweserNotes - Book 1

Question 6 of 17

For the increasing inflation scenario, **explain** which asset classes are likely to perform well.

Explanation

Increasing inflation results in increasing interest rates, and CE does well as interest rates increase.

RE does well as real property values and rental income increase with inflation.

Scoring key:

2 points: 1 point each for a correct discussion of CE and RE.

(Module 1.3, LOS 1.f)

Related Material
SchweserNotes - Book 1

Question 7 of 17

For the deflation scenario, **explain** which asset class is likely to perform well.

Explanation

B does well as the coupons and principal are nominally fixed, but increase in purchasing power.

Candidate discussion: *It may be tempting to argue CE will do well in deflation. CE is better than stock or RE, which are likely to decline in nominal value, but CE can potentially earn negative returns when there is deflation. In contrast, B will continue to earn the higher coupon rates locked in before deflation started.*

Scoring key:

2 points: 2 points for a correct discussion of B.

(Module 1.3, LOS 1.f)

Related Material
SchweserNotes - Book 1

Question 8 of 17

Explain which emerging market economy, Estan or Mstan, would *most likely* be classified as higher risk, and **justify** the classification with three reasons based on the data provided.

Explanation

Estan is higher risk.

- Nominal per capita growth rates are equal at 2%, but the central bank analysis indicates greater inflation risk and the likelihood of insufficient real per capita growth to maintain political stability.
- Monetary policy is less responsible than Mstan, where the Taylor rule approach balances real growth with control of inflation.
- Estan is overleveraged with foreign debt exceeding 50% of GDP.
- Foreign currency reserves to service ST foreign debt are lower at only eight months (1 / 150%).
- The capital flows approach indicates currency outflow from Estan and currency depreciation.

Candidate discussion: *The only issue indicating higher risk for Mstan is a less stable court system. The higher nominal growth for Estan does not indicate lower risk because it is offset by higher population growth and some indication of higher inflation. Thus, real per capita growth in Estan is likely low, and this can lead to political instability.*

Scoring key:

5 points total: 2 points for Estan and 1 point each for three reasons.

(Module 2.2, LOS 2.b)

Related Material
SchweserNotes - Book 1

TOPIC: ASSET ALLOCATION

THE TOTAL POINT VALUE FOR THIS QUESTION SET IS 10 POINTS

Seth Batten, CFA, is working with two different clients. The first, Client A, is a high-net-worth individual subject to a marginal tax rate of 50% (combined federal and state) on ordinary income and a 20% capital gains tax rate. Client A has a risk aversion factor of 3. The second account, Client B, is a tax-exempt institution having a risk aversion factor of 7. Both clients have long time horizons.

Clients A and B are each considering hiring one of the separate account managers profiled in Figure 1. All three managers use the S&P 500 as their index benchmark. The S&P 500 is expected to average a 9.0% annual return over the next 10 years.

Figure 1: Manager Comparison Data

Portfolio Manager	Expected Annual Total Return	Expected Standard Deviation	Expected Annual Turnover	Management and Trading Costs
X	10.1%	15.1%	50%	0.40%
Y	10.6%	15.3%	100%	0.70%
Z	9.5%	14.9%	15%	0.20%

Question 9 of 17

Which of the following portfolio managers would Client A choose based on the certainty equivalent return?

A) Manager X.

B) **Manager Y.** ✓

C) Manager Z.

Explanation

Client A should select Manager Y.

Scoring key:

1 point for choosing Manager Y.

(Module 4.1, LOS 4.a)

Related Material
SchweserNotes - Book 1

Question 10 of 17

Compute your analysis for each portfolio manager.

Explanation

X: $0.101 - 0.5(3)(0.151)^2 = 0.0668$

Y: $0.106 - 0.5(3)(0.153)^2 = 0.0709$

Z: $0.095 - 0.5(3)(0.149)^2 = 0.0617$

Candidate discussion: *Certainty equivalent return = expected portfolio return − 0.5(risk aversion) (portfolio variance). The calculation can also be performed using a percentage for the return and standard deviation instead of decimal form and adjusting the 0.5 to 0.005, resulting in the same conclusion. For example, the calculation for Client A and Manager X would be calculated as 10.1% – 0.005(3)(15.1%)^2 = 6.68%.*

Scoring key:

3 points for the calculation of the certainty equivalent return for each manager.

(Module 4.1, LOS 4.a)

Related Material
SchweserNotes - Book 1

Question 11 of 17

Based on the risk aversion factors only, **identify** which client is *more likely* to exhibit a low tolerance for shortfall risk. **Justify** your response. Consider each issue in isolation.

Explanation

Client B has a low tolerance for shortfall risk.

With the higher risk aversion factor, Client B is more risk averse and would have a lower tolerance for shortfall risk.

Scoring key:

1 point for correct identification, and if that is correct, 2 points for the justification.

(Module 4.1, LOS 4.a)

Related Material
SchweserNotes - Book 1

Question 12 of 17

Based on tax considerations only, **identify** which client is *more likely* to have higher turnover. **Justify** your response. Consider each issue in isolation.

Explanation

Client B is more likely to have higher turnover.

Client B has a zero tax rate and can trade without tax drag, while Client A will have to reduce turnover to defer taxes and reduce tax drag

Candidate discussion: *Client A is more aggressive (a lower risk aversion) and may have higher turnover than Client B, but that does not answer the question asked. The question was specific to how taxes affect turnover.*

Scoring key:

1 point for correct identification, and if that is correct, 2 points for the justification.

(Module 3.6, LOS 3.j)

Related Material
SchweserNotes - Book 1

TOPIC: ASSET ALLOCATION

THE TOTAL POINT VALUE FOR THIS QUESTION SET IS 14 POINTS

Lane Stone, CFA, and Jaynelle Spencer, CFA, are institutional portfolio managers with Global Asset Management (GAM). They recently attended a conference on modern asset allocation tools and have been doing some additional reading. They put together the following summary points:

I. An asset class with lower return and risk can, by definition, be excluded from analysis. It cannot be on the efficient frontier of portfolios made up of higher return and lower risk assets.
II. In Reverse Optimization we start with what we assume to be the optimal portfolio weights from the global market portfolio and derive the expected returns consistent with those weights.
III. Black-Litterman is another way to deal with concentrated portfolios and has the advantage of allowing short sales to profit from overvalued securities.
IV. Black-Litterman is an extension of mean-variance optimization (MVO) where implied returns are view adjusted to reflect the investor's unique views of future returns.

Question 13 of 17

Determine whether each of the comments made is correct. If it is incorrect, **explain** why it is incorrect.

Explanation

I. *Comment*: An asset class with lower return and risk can, by definition, be excluded from analysis. It cannot be on the efficient frontier of portfolios made up of higher return and lower risk assets.

Is the comment correct? No.

Explanation: An asset that, on a stand-alone basis, may be unattractive could—with low enough correlation—be attractive because it would allow increasing the weight in higher risk and return assets, to the benefit of the portfolio.

II. *Comment*: In Reverse Optimization we start with what we assume to be the optimal portfolio weights from the global market portfolio and derive the expected returns consistent with those weights.

Is the comment correct? Yes.

Explanation: None needed.

III. *Comment*: Black-Litterman is another way to deal with concentrated portfolios and has the advantage of allowing short sales to profit from overvalued securities.

Is the comment correct? No.

Explanation: The Black-Litterman method is used to derive return estimates for a mean-variance optimization. A common constraint in mean-variance optimization is the nonnegativity constraint, which means all weights in the portfolio are positive and between 0% and 100% (there are no short positions).

IV. *Comment:* Black-Litterman is an extension of mean-variance optimization (MVO) where implied returns are view adjusted to reflect the investor's unique views of future returns.

Is the comment correct? No.

Explanation: Black-Litterman is an extension of reverse optimization where the output of reverse optimization are the implied returns which are then view adjusted according to the investor's beliefs of future returns. These view adjusted returns are then used as inputs into a MVO to derive outputs such as revised asset allocations.

Scoring key:

8 points possible: 2 points for the yes decision. 1 point each for the three no decisions, and 1 point for explaining each no.

(Module 4.1, LOS 4.a)

Related Material
SchweserNotes - Book 1

Question 14 of 17

Stone and Spencer then examine a list of portfolios for inclusion in their clients' asset allocation.

Portfolio	Exp. Return	Exp. Std. Dev.
A	7.25%	8.50%
B	8.00%	8.30%
C	8.75%	14.25%

Which of the portfolios is *least likely* on the efficient frontier?

A) Portfolio A. ✓

B) Portfolio B.

C) Portfolio C.

Explanation

Portfolio A is least likely on the efficient frontier.

Scoring key:

1 point for choosing Portfolio A.

(Module 4.1, LOS 4.a)

(Module 4.3, LOS 4.d)

Related Material
SchweserNotes - Book 1

Question 15 of 17

Justify your choice of portfolio.

Explanation

Portfolio A cannot be in the efficient frontier because it has a lower return and higher risk (standard deviation) than Portfolio B.

Scoring key:

2 points for the justification of portfolio choice.

(Module 4.1, LOS 4.a)

(Module 4.3, LOS 4.d)

Related Material
SchweserNotes - Book 1

Question 16 of 17

The inclusion of which of the following portfolios would *most likely* mean that an investor's asset allocation must be rebalanced more frequently? Use only the information provided in the table.

A) Portfolio A.

B) Portfolio B.

C) **Portfolio C.** ✓

Explanation

The correct answer is Portfolio C.

Scoring key:

1 point for choosing Portfolio C.

(Module 3.6, LOS 3.j)

Related Material
SchweserNotes - Book 1

Question 17 of 17

Justify your choice of portfolio.

Explanation

Portfolio C has the highest volatility of the three portfolios. The inclusion of Portfolio C would imply that an investor's asset allocation must be rebalanced more frequently. This is because higher volatility increases the likelihood that an actual allocation will diverge over time from the target asset allocation.

Scoring key:

2 points for the justification of portfolio choice.

(Module 3.6, LOS 3.j)

Related Material
SchweserNotes - Book 1