SS9-10 Asset Allocation and Related Decisions in Portfolio Management

Müller and a client discuss other approaches to asset allocation that are not based on optimization models or goals- based models. Müller makes the following comments to the client:

Comment 1 An advantage of the "120 minus your age" heuristic over the 60/40 stock/bond heuristic is that it incorporates an age- based stock/bond allocation.

Comment 2 The Yale model emphasizes traditional investments and a commitment to active management.

Comment 3 A client's asset allocation using the 1/N rule depends on the investment characteristics of each asset class.

1 Which of Müller's comments about the other approaches to asset allocation is correct?

A. Comment 1

B. Comment 2

C. Comment 3

Solution: A

Comment 1 is correct because the "120 minus your age" rule reduces the equity allocation as the client ages, while the 60/40 rule makes no such adjustment. Comments 2 and 3 are not correct. The Yale model emphasizes investing in alternative assets (such as hedge funds, private equity, and real estate) as opposed to investing in traditional asset classes (such as stock and bonds). The 1/N rule allocates an equal weight to each asset without regard to its investment characteristics, treating all assets as indistinguishable in terms of mean returns, volatility, and correlations.

Another client, Lars Velky, represents Velky Partners (VP), a large institutional investor with $500 million in investable assets. Velky is interested in adding less liquid asset classes, such as direct real estate, infrastructure, and private equity, to VP's portfolio. Velky and Monteo discuss the considerations involved in applying many of the common asset allocation techniques, such as MVO, to these asset classes. Before making any changes to the portfolio, Monteo asks Velky about his knowledge of risk budgeting. Velky makes the following statements:

Statement 1: An optimum risk budget minimizes total risk.

Statement 2: Risk budgeting decomposes total portfolio risk into its constituent parts.

Statement 3: An asset allocation is optimal from a risk- budgeting perspective when the ratio of excess return to marginal contribution to risk is different for all assets in the portfolio.

2 Which of Velky's statements about risk budgeting is correct?

A. Statement 1

B. Statement 2

C. Statement 3

Solution: B

The goal of risk budgeting is to maximize return per unit of risk. A risk budget identifies the total amount of risk and attributes risk to its constituent parts. An optimum risk budget allocates risk efficiently.

Raye reviews the Laws' current financial position. The Laws have an investment portfolio consisting of $800,000 in equities and $450,000 in fixed-income instruments. Raye notes that 80% of the equity portfolio consists of shares of WS. The Laws also own real estate valued at $400,000, with $225,000 in mortgage debt. Raye estimates the Laws' pre-retirement earnings from WS have a total present value of $1,025,000. He estimates the Laws' future expected consumption expenditures have a total present value of $750,000.

The Laws express a very strong desire to fund their children's college education expenses, which have an estimated present value of $275,000. The Laws also plan to fund an endowment at their alma mater in 20 years, which has an estimated present value of $500,000. The Laws tell Raye they want a high probability of success funding the endowment. Raye uses this information to prepare an economic balance sheet for the Laws.

3. Using the economic balance sheet approach, the Laws' economic net worth is closest to:

A. $925,000.

B. $1,425,000.

C. $1,675,000.

Solution: A

The Laws' economic net worth is closest to $925,000. An economic balance sheet includes conventional financial assets and liabilities, as well as extended portfolio assets and liabilities that are relevant in making asset allocation decisions. The economic balance sheet for the Law family is shown in the following exhibit.

Assets	**Liabilities and Net Worth**
Financial Assets	Financial Liabilities

	450,000	Mortgage debt	225,000
	400,000		
Equity	800,000		
Extended Assets		**Extended Liabilities**	
Human capital	1,025,000	Children's education	275,000
		Endowment funding	500,000
		Present value of consumption	750,000
Total Economic Assets	2,675,000	Total Economic Liabilities	1,750,000
		Economic Net Worth	925,000

Economic net worth is equal to total economic assets minus total economic liabilities ($2,675,000 – $1,750,000 = $925,000).

The firm's policy is to rebalance a portfolio when the asset class weight falls outside of a corridor around the target allocation. The width of each corridor is customized for each client and proportional to the target allocation. Beade recommends wider corridor widths for high-risk asset classes, narrower corridor widths for less liquid asset classes, and narrower corridor widths for taxable clients with high capital gains tax rates.

4. Beade's suggested change in the corridor width of the rebalancing policy is correct regarding:

A. high-risk asset classes.

B. less liquid asset classes.

C. taxable clients with high capital gains tax rates.

Solution: A

Higher-risk assets should have a wider corridor to avoid frequent, costly rebalancing. Beade's other suggestions are not correct. Less liquid asset classes should have a wider, not narrower, corridor width. Less liquid assets should have a wider corridor to avoid frequent rebalancing. For taxable investors, transactions trigger capital gains in jurisdictions that tax them. For such investors, higher tax rates on capital gains should be associated with wider (not narrower) corridor widths.

Client Haunani Kealoha has a large fixed obligation due in 10 years. Beade assesses that Kealoha has substantially more funds than are required to meet the fixed obligation. The client wants to earn

a competitive risk-adjusted rate of return while maintaining a high level of certainty that there will be sufficient assets to meet the fixed obligation.

5. The asset allocation approach most appropriate for client Kealoha is best described as:

A. a surplus optimization approach.

B. an integrated asset–liability approach.

C. a hedging/return-seeking portfolios approach.

Solution: C

The hedging/return-seeking portfolios approach is best for this client. Beade should construct two portfolios, one that includes riskless bonds that will pay off the fixed obligation in 10 years and the other a risky portfolio that earns a competitive risk-adjusted return. This approach is a simple two-step process of hedging the fixed obligation and then investing the balance of the assets in a return-seeking portfolio.

Statement 1: The Sharpe ratio is suitable for measuring the success of TAA relative to SAA.

Statement 2: Discretionary TAA attempts to capture asset-class-level return anomalies that have been shown to have some predictability and persistence.

Statement 3: TAA allows a manager to deviate from the IPS asset-class upper and lower limits if the shift is expected to produce higher expected risk-adjusted returns.

6. Which of Capara's statements regarding tactical asset allocation is correct?

A. Statement 1.

B. Statement 2.

C. Statement 3.

Solution: A

The Sharpe ratio is suitable for measuring the success of TAA relative to SAA. Specifically, the success of TAA decisions can be evaluated by comparing the Sharpe ratio realized under the TAA with the Sharpe ratio that would have been realized under the SAA.

Subscriber 2

"I have observed that many of the overseas markets for Korean export goods are slowing, while the United States is experiencing a rise in exports. Both trends can combine to possibly affect the value of the won (KRW) relative to the US dollar. As a result, I am considering a speculative currency trade on the KRW/USD exchange rate. I also expect the volatility in this exchange rate to increase."

7. For Subscriber 2, and assuming all of the choices relate to the KRW/USD exchange rate, the best way to implement the trading strategy would be to:

A. write a straddle.

B. buy a put option.

C. use a long NDF position.

Solution: C.

Based on predicted export trends, Subscriber 2 most likely expects the KRW/USD rate to increase (i.e., the won—the price currency—to depreciate relative to the USD). This would require a long forward position in a forward contract, but as a country with capital controls, a NDF would be used instead. (Note: While forward contracts offered by banks are generally an institutional product, not retail, the retail version of a non-deliverable forward contract is known as a "contract for differences" (CFD) and is available at several retail FX brokers.)

A is incorrect because Subscriber 2 expects the KRW/USD rate to increase. A short straddle position would be used when the direction of exchange rate movement is unknown and volatility is expected to remain low.

B is incorrect because a put option would profit from a decrease of the KRW/USD rate, not an increase (as expected). Higher volatility would also make buying a put option more expensive.

Subscriber 3

"India has relatively high interest rates compared to the United States and my market view is that this situation is likely to persist. As a retail investor actively trading currencies, I am considering borrowing in USD and converting to the Indian rupee (INR). I then intend to invest these funds in INR-denominated bonds, but without using a currency hedge."

8. Which of the following market developments would be most favorable for Subscriber 3's trading plan?

A. A narrower interest rate differential.

B. A higher forward premium for INR/USD.

C. Higher volatility in INR/USD spot rate movements.

Solutions: B.

Subscriber 3's carry trade strategy is equivalent to trading the forward rate bias, based on the historical evidence that the forward rate is not the center of the distribution for the spot rate. Applying this bias involves buying currencies selling at a forward discount and selling currencies

trading at a forward premium. So a higher forward premium on the lower yielding currency—the USD, the base currency in the INR/USD quote—would effectively reflect a more profitable trading opportunity. That is, a higher premium for buying or selling the USD forward is associated with a lower US interest rate compared to India. This would mean a wider interest rate differential in favor of Indian instruments, and hence potentially more carry trade profits.

A is incorrect because Subscriber 3's carry trade strategy depends on a wide interest rate differential between the high-yield country (India) and the low-yield country (the United States). The differential should be wide enough to compensate for the unhedged currency risk exposure.

C is incorrect because a guide to the carry trade's riskiness is the volatility of spot rates on the involved currencies, with rapid movements in exchange rates often associated with a panicked unwinding of carry trades. All things being equal, higher volatility is worse for carry trades.

The second client, BC Fundos de Pensao (BC), manages pension funds for numerous local companies and has currency exposure to the USD, the EUR, and the GBP. BC wants Sabanai to provide guidance on using active currency management strategies for the portfolios they manage. Peixaria has been assigned this task and has collected information on one-year yield levels in the United States, United Kingdom, and Eurozone, as well as one-year implied volatility for various currency pairs extracted from option pricing models. This information is provided in Exhibit 2.

Exhibit 2	
One-Year Yield Levels and Implied Volatilities	
Panel A	
Country	**One-Year Yield**
United States	0.05%
United Kingdom	0.40%
Eurozone	0.11%
Panel B	
Currency Pair	**One-Year Implied Volatility**
USD/GBP	5.50%
GBP/EUR	7.50%
USD/EUR	9.50%

9. Based on the information in Exhibit 2, it would be best for Sabanai to implement a carry trade for BC by borrowing in:

A. GBP and investing in USD.

B. USD and investing in GBP.

C. EUR and investing in GBP.

Solution: B.

An appropriate active currency management strategy that may add value to BC's portfolios would be to borrow in USD and invest in GBP. The spread in yields is widest between the United Kingdom and the United States, and the USD/GBP currency pair has the lowest implied volatility, which is better for a carry trade.