



Africans
Who Invest

BUILDING WEALTH, CAREERS AND COMPANIES

INTERVIEW GUIDE 12

Investment Management and Asset Allocation

How capital owners set objectives, build and risk-
manage portfolios, measure results and select
managers.

How to use this guide

This guide is about managing a portfolio rather than analysing a security. Guide 10, Public Markets and the Stock Pitch, covers single-company research, sector frameworks and the pitch itself; where the two meet, this guide points there rather than repeating it.

Most questions have two layers. **What to say** is a short answer you could give in an interview. The notes underneath explain why it is right, so you can handle the follow-up.

Do not memorise answers word for word. Learn the logic, then practise saying it out loud.

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A note on conventions

Worked examples use round numbers and, where tax matters, a 25% rate unless stated. Returns are geometric unless noted. Most African markets report under IFRS and trade in local currency; say which market and currency you are assuming, because both change the answer. Regulatory allocation limits differ by country and change, so confirm the current rules for the market in question.

The capital and who owns it

Investment management interviews start with a question of seat. An allocator, a multi-asset manager and a manager-selection analyst do related but different jobs, and the interview follows the seat.

1.1 What is the difference between an asset owner and an asset manager?

What to say

An asset owner owns the capital and answers to a mission: a pension fund to its members, an insurer to its policyholders, an endowment to its institution. It sets the long-term allocation and hires managers. An asset manager runs money for other people against a mandate and earns a fee on assets. Owners think in liabilities and decades; managers think in mandates and benchmarks.

This guide is about managing a portfolio. Guide 10 covers analysing and pitching individual securities; where the two meet, this guide points there rather than repeating it.

1.2 What does each type of asset owner actually optimise?

Owner	Objective and constraint
Defined-benefit pension	Meet promised payments to members. Optimises the funded ratio, assets relative to the present value of liabilities, so liabilities drive the allocation
Defined-contribution pension	Grow members' individual accounts. Optimises long-term real return per unit of risk, with a glide path by member age
Life insurer	Match long-dated, predictable claims. Heavily constrained by regulatory capital, so it holds mostly high-grade bonds and matches duration

Endowment or foundation	Fund a spending rate, often 4% to 5% of assets, in perpetuity while preserving real value. Long horizon, high tolerance for illiquidity
Sovereign wealth fund	Depends on mandate: stabilisation funds hold liquid assets against a commodity shock; savings funds invest for future generations; development funds invest domestically for growth
Family office	Preserve and transfer wealth across generations, with tax and concentration issues specific to the family
Outsourced CIO	Runs the whole allocation on an owner's behalf, so it does both the allocation and the manager selection

If an interviewer asks how you would invest a pool of money, the first question back is always what the money is for and when it is needed.

1.3 Why does a pension fund invest differently from an endowment?

What to say

Because a pension has contractual liabilities with known timing, so its risk is the gap between assets and liabilities, and a fall in interest rates can hurt it even if markets rise. An endowment has a spending rule rather than a contract, no fixed maturity and the ability to cut spending, so it can take equity and illiquidity risk and ride out drawdowns. Same capital, different definition of risk.

1.4 How does an investment management firm make money?

What to say

A management fee on assets, so revenue scales with markets and with flows, plus a performance fee in hedge funds and some other strategies. That means the business is exposed to market levels, to fee pressure from passive competition, and to distribution: gathering and keeping assets matters as much as performance. Section 09 covers the fee mechanics.

1.5 Active or passive?

What to say

Both, deliberately. Passive is the right default in deep, efficient, well-covered markets where fees dominate the outcome. Active is worth paying for where the opportunity set is less efficient or where an index is a poor representation of the market: small caps, frontier and African equities, credit, and private markets. The honest framing is that active management is a zero-sum game before fees and negative-sum after, so the question is not whether skill exists but whether you can identify it in advance and buy it cheaply enough.

1.6 What roles exist on this side of the industry?

- **Asset allocation and strategy:** setting and adjusting the mix across asset classes.
- **Manager research and selection:** choosing and monitoring external managers. See Section 08.
- **Multi-asset portfolio management:** running a portfolio of asset classes or funds.
- **Risk:** measuring and constraining exposures independently of the portfolio managers.
- **Performance and investment operations:** the measurement, attribution and reporting infrastructure.
- **Client and consultant relations:** explaining the portfolio to the people whose money it is.

Sector and single-stock research sits alongside these and is the subject of Guide 10.

In African markets

The asset-owner side is where the growth is. Pension assets have expanded substantially across Nigeria, Kenya, Ghana and South Africa, regulators have gradually widened what pension funds may hold, and sovereign and development finance institutions are among the largest allocators on the continent. That creates allocation and manager-selection roles alongside stock-picking ones. If you interview with an African asset owner, expect the conversation to centre on currency, liquidity, governance and the local allocation limits rather than on which stock you like.

Mandates and the investment policy statement

The document that decides everything downstream. Allocator interviews frequently ask you to build one, out loud, from a short brief.

2.1 What is an investment policy statement, and what is in it?

Element	What it specifies
Purpose and governance	Who decides what: board, investment committee, staff, external managers, and the delegation limits between them
Return objective	Stated in real terms or relative to liabilities, not as a number plucked from ambition
Risk tolerance	Expressed in terms the owner feels: funded ratio volatility, maximum drawdown, probability of missing the objective
Time horizon	Single or multi-stage; a pension with a maturing membership has a shortening horizon
Liquidity needs	Known outflows: benefit payments, spending rate, capital calls
Constraints	Regulatory limits, currency restrictions, permitted instruments, exclusions, concentration limits
Strategic asset allocation	Target weights and permitted ranges by asset class
Benchmarks	For the total fund and each mandate
Rebalancing policy	Bands and who may authorise a deviation
Reporting and review	What is measured, how often, and when the policy itself is revisited

2.2 What is the difference between strategic and tactical asset allocation?

What to say

Strategic allocation is the long-run mix chosen to meet the objective, reviewed every few years. Tactical allocation is deliberate short-term deviation from it, within permitted ranges, to exploit a view on valuation or the cycle. The strategic decision does most of the work; tactical shifts should be sized so that being wrong is survivable and should have an explicit exit.

2.3 How do you set a return objective for a pension fund?

What to say

From the liabilities, not from a market forecast. Work out the discount rate implied by the promised benefits and the contribution rate the sponsor can bear, and the required return falls out. Then test whether that return is achievable at a risk the fund can survive. If it is not, something has to give: higher contributions, lower benefits, or a longer horizon. A fund that solves the gap by simply raising its return assumption has solved nothing.

WORKED BRIEF

An IPS for an African pension fund

A national defined-benefit scheme has assets of \$1.0bn and liabilities with a present value of \$1.1bn, so it is 91% funded. Average member age is 42, so net outflows begin in roughly eight years. Local regulation caps offshore assets at 20% of the portfolio and private assets at 10%. Inflation runs around 12%, and long local government bonds yield about 16%.

The interview question is how you would set the policy. The answer is in the next two questions.

2.4 How would you approach that brief?

What to say

First, define risk as the funded ratio rather than asset volatility, because the scheme's problem is a 9% deficit and liabilities that move with rates. Second, use the long bond yield as the anchor: at 16% nominal against 12% inflation, local government bonds offer a real return of roughly 4% with no credit risk, which already covers a large part of the required return and matches liability duration. Third, use the equity and private allocation for the real growth needed to close the deficit, and the offshore allowance, up to the 20% cap, mainly to diversify away from a single economy and currency. Fourth, set rebalancing bands and an explicit liquidity ladder for the eight years before outflows start. Fifth, agree with the board what funded-ratio loss would be unacceptable, and size risk to that.

Illustrative policy	Target	Range
Local government bonds, duration-matched	40%	30–50%
Local equities	20%	15–25%
Local corporate credit	10%	5–15%
Offshore equities	15%	10–20%
Private assets (infrastructure, PE)	10%	0–10%
Cash and near-cash	5%	2–10%

Illustrative only. Actual limits vary by country and change; confirm the current regulations for the market in question.

2.5 What would you tell the board about closing the deficit?

What to say

That there are only three levers: contributions, benefits and investment return, and that only the first two are under their control. Investment risk can raise the expected path but widens the distribution, which means a real chance of a worse funded ratio in five years. I would present the deficit closing under three scenarios rather than one plan, and be explicit that a higher return assumption is not a strategy.

2.6 What is a glide path?

What to say

A pre-agreed schedule that reduces risk as a condition improves or a horizon shortens. In defined contribution, allocation shifts from equities towards bonds as a member approaches retirement. In defined benefit, de-risking triggers reduce growth assets as the funded ratio improves, locking in gains rather than relying on a decision in the moment.

2.7 What constraints most often bind in practice?

- Regulatory limits on offshore, private and single-issuer holdings.
- Exchange control and repatriation rules, which can make an offshore allocation practically smaller than the legal cap.
- Liquidity: the need to pay benefits monthly regardless of markets.
- Governance capacity: a board that meets quarterly cannot run a tactical programme.
- Reputational and exclusion policies.

Asset classes as building blocks

An allocator does not ask what a company is worth. It asks what an asset class is expected to return, how it behaves against the others, and what it is for in the portfolio.

3.1 How do you build an expected return for an asset class?

What to say

From components rather than from history. Start with the real risk-free rate, add expected inflation to get the nominal anchor, then add the risk premia the asset earns. For equities: dividend yield plus real earnings growth plus expected inflation, with any adjustment for valuation change. For bonds: the starting yield is most of the answer for a buy-and-hold investor. For credit: the government yield plus the spread less expected losses.

Example. A market with a 3% dividend yield, 2% real growth and 3% expected inflation implies an 8% nominal expected return before any change in valuation. If the multiple is well above its long-run level, subtract something for reversion, and say so explicitly rather than hiding it.

3.2 What are capital market assumptions, and how are they used?

What to say

A house's long-run estimates of return, volatility and correlation for every asset class, usually over ten years. They are the inputs to the strategic allocation, so they matter enormously. Good practice is to build them from components, review them annually, and show how the recommended portfolio changes if they are wrong, because they will be.

3.3 What job does each asset class do in a portfolio?

Asset class	Role, and when it fails
Government bonds	Deflation and recession hedge, liability matching, liquidity. Fails in an inflation shock
Inflation-linked bonds	Protects real value directly. Expensive when breakevens are high; still loses if real rates rise
Credit	Yield above governments. Correlates with equities exactly when you need diversification
Equities	The main engine of long-run real return. Large drawdowns, poor short-horizon reliability
Real assets: property, infrastructure	Inflation-linked cash flows, long duration. Illiquid and valued infrequently, so risk is understated
Commodities	Inflation and supply-shock protection. No income and no intrinsic growth
Private equity	Return premium plus governance advantage. Illiquidity, leverage and smoothed valuations
Hedge funds	Return streams less dependent on market direction. Fees, dispersion between managers, and factor exposure dressed as skill
Cash	Optionality and liquidity. Guaranteed real loss when inflation exceeds the policy rate

3.4 Are correlations stable?

What to say

No, and treating them as constants is the most dangerous simplification in portfolio construction. The stock-bond correlation was negative through the low-inflation decades and turned positive when inflation returned, which removed the diversification that 60/40 portfolios depended on. Correlations also tend towards one in a crisis, when everything but the safest assets sells together. I would test a portfolio under a correlation regime shift rather than only at the historical average.

3.5 What is the difference between real and nominal thinking, and why does it matter more in Africa?

What to say

Because a 16% nominal return with 12% inflation is a 3.6% real return, while 6% nominal with 2% inflation is 3.9%: the second is better despite looking worse. Members' pensions and an endowment's spending are real obligations, so objectives should be set in real terms. In high-inflation markets, a portfolio that looks like it is compounding strongly in local currency may be barely holding its real value.

3.6 How should an allocator think about illiquid assets?

What to say

As a trade: give up the ability to sell in exchange for an expected premium and access to opportunities not available in public markets. It suits an owner with a long horizon and predictable outflows. Two honest caveats: reported volatility is low partly because the assets are valued infrequently, not because the risk is low, and the illiquidity premium is not guaranteed, particularly after fees.

3.7 What is the equity risk premium, and how large is it?

What to say

The extra return investors require for holding equities rather than the risk-free asset. It is not observable, so it is estimated either from long-run historical excess returns or from current valuations and expected growth. Developed-market estimates commonly sit somewhere around 4% to 6%, with a country risk premium added for riskier markets. Quote it as an assumption and say which method you used.

Fixed income for allocators

Bonds are where most allocator maths lives, and where candidates from equity backgrounds are weakest. Guide 02 covers the basics; this goes further.

4.1 Decompose a bond yield.

What to say

A nominal government yield is the real rate plus expected inflation plus an inflation risk premium and a term premium. A corporate yield adds a credit spread, which itself compensates for expected default losses plus a liquidity and risk premium. Breaking a yield into those parts tells you what you are actually being paid for and which component your view concerns.

4.2 What is breakeven inflation?

What to say

The difference between a nominal bond's yield and the real yield on an inflation-linked bond of the same maturity: the inflation rate at which the two produce the same return. If ten-year nominals yield 5.5% and ten-year linkers yield 2.0%, breakeven inflation is 3.5%. You prefer linkers if you think inflation will exceed that, and nominals if you think it will undershoot.

4.3 What is convexity, and why does it matter for a large bond portfolio?

What to say

Duration is a straight-line estimate of price sensitivity; convexity is the curvature. A positively convex bond gains more when yields fall than it loses when they rise by the same amount, so the duration estimate understates gains and overstates losses. It matters most for large yield moves and for long-duration portfolios.

Worked. A bond with modified duration 8 and convexity 100 when yields rise 1%: the duration estimate is -8% , the convexity adjustment is $+0.5 \times 100 \times 0.01^2 = +0.5\%$, so the estimated price change is about -7.5% .

4.4 What are key-rate duration and spread duration?

What to say

Key-rate duration measures sensitivity to a move in one part of the curve rather than a parallel shift, which is what you need when the curve steepens or flattens. Spread duration measures sensitivity to a change in credit spreads with government yields unchanged. A portfolio with spread duration of 4 loses about 4% if spreads widen by 100 basis points.

4.5 What are carry and roll-down?

What to say

Carry is the income earned from holding the bond: its yield, less funding cost if leveraged. Roll-down is the price gain as a bond ages along an upward-sloping curve towards a lower yield. Together they are the return you earn if nothing changes, which is why a steep curve can make even a flat-rate view profitable.

4.6 How do you compare local-currency and hard-currency emerging market debt?

Dimension	Local currency	Hard currency
Main risk	Currency and local inflation	Sovereign credit and global rates

Yield	Higher nominal, reflecting inflation	Treasury yield plus sovereign spread
Who bears devaluation	The investor	The issuing government
Default mechanics	Rare in local currency, since the government can print; inflation is the effective default	Real default risk, restructured through bondholder negotiation
Typical holder	Local pensions and banks	International funds

For an African pension fund the local market is the natural home; for a dollar-based investor the same bond is a currency position with a coupon attached.

4.7 What is asset-liability matching, and what is liability-driven investing?

What to say

Matching means holding assets whose cash flows and duration mirror the liabilities, so a change in rates moves both sides together and the funded ratio is stable. Liability-driven investing takes that further: the liability becomes the benchmark, and the portfolio is split into a matching component, usually long bonds and swaps, and a growth component to close any deficit.

4.8 Show me why duration mismatch matters.

A pension fund has assets of \$1.0bn with duration 5 and liabilities of \$1.1bn with duration 15. Rates rise by 1 percentage point.

	Before	After a 1% rate rise
Assets	\$1,000m	\$950m
Liabilities	\$1,100m	\$935m
Funded ratio	90.9%	101.6%

The fund became fully funded because its liabilities were more rate-sensitive than its assets. The same mismatch works violently in reverse when rates fall, which is what pushed many schemes into deficit in the low-rate era. A fund that holds short-duration assets against long liabilities is running an unintentional and very large interest rate bet.

4.9 Why would a fund use swaps or repo rather than buying more bonds?

What to say

To gain duration without spending capital. An interest rate swap or a repo-financed bond position can match liability duration while leaving most of the portfolio invested in growth assets. The cost is leverage, collateral requirements and the need to post variation margin, which turns into a liquidity problem exactly when rates move against you.

Portfolio construction

5.1 Why does diversification work?

What to say

Because assets that do not move together offset each other, so combining them keeps most of the expected return while reducing volatility below the weighted average of the parts. The work is done by correlation, not by the number of holdings.

Worked. Two assets, each with 20% volatility, equally weighted. At a correlation of +1 the portfolio's volatility is 20%. At 0 it is $\sqrt{(0.5^2 \times 0.2^2 + 0.5^2 \times 0.2^2)} = \sqrt{0.02} \approx 14.1\%$. At -1 it is zero.

5.2 Build a 60/40 portfolio from capital market assumptions.

Equities: 8% expected return, 16% volatility. Bonds: 4% and 6%. Correlation 0.2. Cash 3%.

Step	Calculation	Result
Expected return	$0.6 \times 8\% + 0.4 \times 4\%$	6.4%
Variance	$0.6^2 \times 0.16^2 + 0.4^2 \times 0.06^2 + 2 \times 0.6 \times 0.4 \times 0.16 \times 0.06 \times 0.2$	0.0107
Volatility	$\sqrt{0.0107}$	10.4%
Sharpe ratio	$(6.4\% - 3\%) \div 10.4\%$	0.33

Note that volatility is 10.4%, well below the 12% weighted average of the two, which is the diversification benefit in one number.

5.3 What are the efficient frontier and the capital market line?

What to say

The efficient frontier is the set of portfolios with the highest expected return for each level of risk. Adding a risk-free asset lets you combine cash with the single portfolio on the frontier with the highest Sharpe ratio, the tangency portfolio, and that straight line of combinations is the capital market line. In theory every investor holds the same risky portfolio and adjusts risk by moving along the line with cash or leverage.

5.4 Why do practitioners distrust mean-variance optimisers?

What to say

Because the output is extremely sensitive to the inputs, and expected returns are the least reliable input of all. Small changes produce wildly different, highly concentrated allocations, so the optimiser amplifies estimation error rather than diversifying it. The usual responses are to constrain weights, to shrink the return estimates towards a common prior, to use resampling, or to start from risk-based methods that do not require return forecasts at all.

5.5 What is risk parity?

What to say

Weighting assets so each contributes equally to portfolio risk rather than equally to capital, which means sizing inversely to volatility. It avoids forecasting returns, but it allocates heavily to low-volatility assets, usually bonds, so it often relies on leverage to reach a target return and it suffers when bonds and equities fall together.

Worked. With equity volatility of 16% and bond volatility of 6%, inverse-volatility weights are 27% equities and 73% bonds, before any leverage.

5.6 How much does asset allocation matter versus security selection?

What to say

For a diversified portfolio, the strategic allocation explains the large majority of the variation in returns over time, which is why allocators spend most of their effort on the mix. Be precise about the claim: it explains most of the variability of returns, which is not the same as most of the level of any one portfolio's return. The statistic is frequently misquoted.

5.7 How do you allocate to factors rather than to asset classes?

What to say

By identifying the underlying drivers that assets share, such as growth, inflation, credit and liquidity, and allocating to balanced exposure across them. The argument is that asset class labels disguise common risks: equities, credit and property are all growth exposures, so a portfolio that looks diversified across three asset classes may hold one risk. Guide 10 covers factors as a stock-level exposure; here they are an allocation choice.

5.8 What is a liquidity budget?

What to say

An explicit plan for how much of the portfolio can be turned into cash over different horizons, tested against the outflows the fund must meet: benefit payments, spending, capital calls and margin. The rule is that you never rely on selling an illiquid asset in a crisis, so the daily-liquid sleeve has to cover the worst realistic case.

5.9 How do you pace a private markets programme?

What to say

Commitments are not investments: capital is called over several years and returned over more, so reaching a target allocation requires committing steadily over several vintage years. You model expected calls and distributions to plan commitments, which also diversifies across vintages.

Worked. A \$500m fund targets 20% in private equity, so \$100m of net asset value. If roughly 60% of a commitment is invested at any one time and funds call capital over four years, annual commitments of about \$40m are needed to build and sustain the allocation. Committing \$100m in one year would overshoot and concentrate the programme in a single vintage.

5.10 What is the denominator effect?

What to say

When public markets fall, the private allocation rises as a percentage of the portfolio even though nothing has happened to the private assets, partly because they are valued with a lag. Funds then find themselves over-allocated, slow new commitments and sometimes sell fund stakes in the secondary market at a discount. It is the main practical argument for pacing and for allocation ranges rather than fixed targets.

5.11 How does rebalancing work, and what does it cost?

What to say

Set bands around each target and trade back when a weight breaches its band, rather than on a fixed calendar. Rebalancing is mechanically contrarian, so it tends to add a small amount of return and, more importantly, it keeps risk where the policy intended. The costs are transaction costs, taxes where relevant, and the psychological difficulty of buying what has just fallen.

Worked. A 60/40 portfolio with 5 percentage point bands. Equities rise 25% and bonds 2%, so the portfolio becomes 64.8% equities. That breaches the band, and returning to 60% means selling about 5.5% of the portfolio's value in equities and buying bonds.

Risk management

Risk in a portfolio is not the same as risk in a position. Here it means the chance of missing the objective, and the measures that tell you how close you are.

6.1 What is the difference between systematic and idiosyncratic risk?

What to say

Systematic risk affects everything together: recessions, rates, inflation. It cannot be diversified away, which is why the market compensates you for bearing it. Idiosyncratic risk is specific to one holding and can be diversified away, so in theory you are not paid for it. That distinction is the logic behind beta and the capital asset pricing model.

6.2 What is Value at Risk, and what is wrong with it?

What to say

VaR estimates the loss a portfolio is unlikely to exceed over a period at a confidence level: a one-day 95% VaR of \$1m means a worse day should occur about one time in twenty. Its weaknesses are that it says nothing about how bad the loss is beyond that threshold, that it relies on historical relationships that break in a crisis, and that it can be gamed by taking risks that are rare but enormous. Expected shortfall, the average loss in the tail beyond VaR, addresses part of this and is now preferred in regulation.

6.3 What do stress tests and scenarios add?

What to say

They ask what happens under specified conditions rather than what a statistical distribution implies: a 30% equity fall, a 300 basis point rate rise, a 40% currency devaluation, a repeat of a specific historical crisis. For an African portfolio I would always run a devaluation scenario and a commodity price shock, because those drive the outcome more than equity volatility does.

6.4 What is tracking error, and how is a risk budget set?

What to say

Tracking error is the volatility of returns relative to the benchmark, so it measures how different the portfolio is willing to be. A risk budget allocates that tolerance across decisions: how much tracking error comes from asset allocation, from manager selection and from currency. It forces an explicit answer to where the fund believes it has skill.

6.5 What is active share, and how does it differ from tracking error?

What to say

Active share measures how far the holdings differ from the benchmark, from 0% for an index fund to 100% for a portfolio with no overlap. Tracking error measures how differently the portfolio has behaved. A manager can have high active share and modest tracking error by holding different but similar-behaving names. Low active share with a high fee is the definition of a closet indexer.

6.6 How do you think about liquidity risk?

What to say

Liquidity is the ability to sell at a fair price without moving it, and it disappears when you need it most. I would size illiquid positions smaller than their expected return alone would justify, hold a buffer of genuinely liquid assets sufficient for the worst case, and never plan to meet an obligation by selling into a stressed market. For leveraged strategies, liquidity risk and margin risk are the same thing.

6.7 How do you decide whether to hedge currency, and what does it cost?

What to say

Start from the currency of the liability. If members are paid in naira, dollar assets carry currency risk that must be sized deliberately; if the investor's obligations are in dollars, local assets do. Currency adds volatility without a reliable long-run return, so many allocators hedge developed-market bond exposure fully, hedge equity exposure partially, and leave emerging market currency exposure unhedged because the cost is prohibitive.

The cost. Forward pricing is set by the interest rate differential, not by a forecast. Hedging a dollar asset back into a currency with a 18% policy rate when dollar rates are 4% costs roughly 14% a year in forward points. That is why local investors in high-rate markets rarely hedge: the hedge costs about what the local bond pays.

6.8 What instruments are used to manage exposure at the portfolio level?

Instrument	Use
Index futures	Adjust equity or bond exposure quickly and cheaply; equitise cash while managers are appointed
Interest rate swaps	Add or remove duration without buying bonds; the core tool of liability-driven investing
FX forwards	Hedge currency exposure; rolled periodically, with cash flow implications at each roll
Options	Buy downside protection or sell volatility for income; premium cost makes systematic hedging expensive
Total return swaps	Gain exposure to an index or asset without holding it, introducing counterparty risk

Any overlay creates collateral and margin obligations. A hedge that is right about the market and wrong about liquidity can still force the fund to sell assets at the bottom.

6.9 What non-market risks should an allocator worry about?

- **Counterparty and custody:** who holds the assets, and what happens if a broker or bank fails.
- **Operational:** valuation errors, failed settlements, fraud, cyber.

- **Governance:** a committee that cannot make timely decisions, or one that overrides policy after a drawdown.
- **Concentration through managers:** five managers holding the same crowded positions.
- **Regulatory and political:** changes to allocation limits, taxes or exchange control.
- **Behavioural:** selling at the bottom, which historically costs investors more than any market event.

Performance and attribution

Know these cold. They are the most reliably tested maths in an investment management interview.

7.1 What is the difference between time-weighted and money-weighted returns?

What to say

A time-weighted return measures the manager's performance independent of when money arrived, so it is the right measure for judging a manager. A money-weighted return, an internal rate of return, reflects the actual cash flows and therefore the investor's experience. They can differ dramatically when large contributions land just before a bad period.

Worked. A portfolio starts at \$100 and gains 10% to \$110. The client then contributes \$100, taking it to \$210, and the portfolio falls 5% to \$199.50. The time-weighted return is $1.10 \times 0.95 - 1 = +4.5\%$, but the money-weighted return is about -0.2% a year, because most of the capital was only present for the loss. The manager did fine; the investor did not.

7.2 Why use geometric rather than arithmetic averages?

What to say

Because compounding is what an investor earns, and volatility drags on it. A portfolio that gains 30% then loses 30% has an arithmetic average of 0% but is down 9% over two years, since $1.3 \times 0.7 = 0.91$, which is about -4.6% a year geometrically. The gap widens with volatility, so quoting arithmetic averages flatters a volatile record.

7.3 Walk me through the risk-adjusted measures.

Measure	Numerator ÷ denominator	Use
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Sharpe ratio	Excess return over cash ÷ total volatility	A standalone portfolio
Sortino ratio	Excess return ÷ downside deviation	Strategies with asymmetric returns, where upside volatility should not be penalised
Treynor ratio	Excess return ÷ beta	A component held inside an already diversified portfolio
Information ratio	Active return over benchmark ÷ tracking error	An active manager against a benchmark
Alpha (CAPM)	Actual return – (risk-free + beta × market excess)	Return beyond what market exposure explains
Calmar ratio	Return ÷ maximum drawdown	Strategies where path matters, such as those with leverage

Worked. A fund returns 11% with 12% volatility, 6% downside deviation, a beta of 1.1 and a 3% risk-free rate; its benchmark returned 8% with 5% tracking error. Sharpe is $8 \div 12 = 0.67$. Sortino is $8 \div 6 = 1.33$. Treynor is $8 \div 1.1 = 7.3$. The information ratio is $3 \div 5 = 0.6$.

7.4 Calculate alpha.

What to say

A fund returned 14%. The risk-free rate is 3%, its beta is 1.2 and the market returned 10%. CAPM predicts $3\% + 1.2 \times (10\% - 3\%) = 11.4\%$, so alpha is $14\% - 11.4\% = +2.6$ percentage points beyond what its market exposure explains.

7.5 Walk me through performance attribution.

What to say

Attribution splits active return into the decisions that produced it. The Brinson approach separates allocation, from over- or under-weighting a group, from selection, from picking better holdings within a group, plus an interaction term. Factor-based attribution instead explains returns by exposure to factors such as value, size and momentum, which is how you tell stock selection apart from a factor tilt.

Worked. The benchmark is 50% technology returning 10% and 50% staples returning 4%, so 7% overall. The portfolio held 70% technology returning 12% and 30% staples returning 3%, so 9.3%. Active return is +2.3 percentage points.

Effect	Calculation	Contribution
Allocation	$(0.70 - 0.50) \times 10\% + (0.30 - 0.50) \times 4\%$	+1.2%
Selection	$0.50 \times (12\% - 10\%) + 0.50 \times (3\% - 4\%)$	+0.5%
Interaction	$(0.70 - 0.50) \times 2\% + (0.30 - 0.50) \times (-1\%)$	+0.6%
Total active return		+2.3%

7.6 How do you choose a benchmark, and what makes a bad one?

What to say

A good benchmark is investable, unambiguous, specified in advance, and representative of the strategy's opportunity set and risk. Bad benchmarks are ones the manager could never hold, ones chosen after the fact, and ones with a risk profile the portfolio does not share. Comparing a global equity fund with cash tells you nothing. Benchmark choice quietly determines whether a manager looks skilful.

7.7 A manager beat the market last year. Skill or luck?

What to say

One year cannot tell you. I would ask whether the return came from a repeatable process or a single bet, whether it was earned by taking more risk, whether it survives fees, and whether the pattern holds across several years and different environments. Statistically, distinguishing genuine skill from noise takes a long record: at an information ratio of 0.5, you need roughly fifteen years of data for the result to be convincing at conventional confidence levels. That is why process evidence matters more than a number.

7.8 What is maximum drawdown, and why does it matter more than volatility to a client?

What to say

Maximum drawdown is the largest peak-to-trough fall. It matters because it is what the investor actually experiences, it determines whether they stay invested, and for a fund with outflows it determines whether assets have to be sold at the bottom. A strategy with a good Sharpe ratio and a 50% drawdown is not investable for most owners.

7.9 What is fee drag, and how large is it?

What to say

The cumulative cost of fees on compounded returns, which is far larger than the annual number suggests. Over ten years at an 8% gross return, a two-and-twenty fee structure turns \$1.00 into roughly \$1.54, while a 75 basis point flat fee turns it into about \$2.01. That gap of nearly half the original capital is the reason fee negotiation and passive alternatives dominate allocator conversations.

Manager selection and due diligence

A real job that almost no candidate prepares for, and a common interview case at asset owners, OCIOs and fund-of-funds.

8.1 What are you looking for when you select a manager?

What to say

Four things. A clear, repeatable source of edge and an explanation of why it should persist. A process consistent with that edge, evidenced in the actual holdings rather than the pitchbook. A team and a firm stable enough to keep doing it, with aligned economics. And terms, fees and liquidity that leave enough of the return with me. Past performance is evidence about process, not a reason on its own.

8.2 How do you read a track record?

- Decompose it: how much came from market exposure, from factor tilts, and from selection.
- Check consistency across periods and regimes rather than a headline annualised number.
- Look at the dispersion of outcomes within the portfolio: was the record made by one position?
- Check whether the record was earned on today's asset base; strategies decay with size.
- Verify that the record belongs to the current team, and whether it is the firm's or a previous employer's.
- Watch for survivorship and selection bias in composites, and for changes in the stated benchmark.

8.3 What is the difference between investment and operational due diligence?

What to say

Investment diligence asks whether the strategy can make money: edge, process, portfolio, risk management. Operational diligence asks whether the money is safe: who values the assets, who holds them, the auditor and administrator, cash controls and authorisation, compliance and personal trading, business continuity, and the firm's financial viability. Most large losses in allocator portfolios have come from operational failures, not from bad stock picking.

8.4 What are the warning signs in a manager meeting?

- An edge that cannot be described in one sentence, or one that is really a factor exposure.
- Performance attribution the manager cannot explain, or attributes entirely to skill.
- Style drift: the portfolio no longer matches the stated process.
- Assets growing much faster than the team or the capacity of the strategy.
- Key-person dependence with no succession, or recent senior departures.
- Reluctance to discuss losses, or blaming the market for them.
- Valuation of illiquid positions done in-house without independent review.
- Fee or liquidity terms that changed shortly before the fundraise.

8.5 How do you size and monitor an allocation to a manager?

What to say

Size to the role it plays in the portfolio and to conviction, with limits on the share of any one manager's fund that I represent, so that neither of us is over-dependent on the other. Then monitor against what I underwrote: is the process being followed, is the portfolio consistent with the stated strategy, is the team intact, and has capacity changed? I would replace a manager for a broken process before a period of poor returns, and would not replace one whose underperformance is exactly what their style should produce in this environment.

8.6 When would you redeem?

What to say

Departure of the people whose skill I underwrote, a change in process or asset base that undermines the edge, an operational or governance failure, style drift, or a better use of the capital. Performance alone is a reason to investigate, not to redeem. The discipline that matters is having written down in advance what would make me sell.

8.7 What is specific to selecting managers in African markets?

What to say

Track records are often short and the universe of managers is small, so diligence leans more on process and people than on statistics. Team stability matters more because teams are small. Operational questions carry more weight: independent valuation, custody arrangements, and the quality of the administrator. And capacity is a real constraint, since a strategy in a thinly traded market can be closed to new money at a size that looks small by global standards.

Fund structures, fees and operations

9.1 What are the main fund structures, and how do they differ?

Structure	Liquidity	Typical fees
Open-ended mutual fund or unit trust	Daily subscription and redemption at net asset value	Management fee only, commonly well under 1% for institutional share classes
Exchange-traded fund	Traded intraday on an exchange	Lowest; basis points for broad index exposure
Hedge fund	Monthly or quarterly with notice, often with lock-ups and gates	Management fee plus performance fee with a high-water mark
Closed-end private fund	None; capital committed for the fund's life	Management fee on commitments then on invested capital, plus carry over a hurdle
Segregated mandate	The owner holds the assets directly; terms negotiated	Negotiated, usually lower than pooled funds at scale
Fund of funds	Depends on underlying funds	A fee layer on top of the underlying managers' fees

9.2 How does a performance fee work?

What to say

The manager takes a share of gains, commonly 20%, usually above a high-water mark so that it is paid only on new profits after recovering past losses, and sometimes only above a hurdle rate. Crystallisation matters: a fee taken annually is paid on gains that may later reverse, whereas one paid on realisation is not. Ask whether the high-water mark is per investor, and whether it resets.

The asymmetry. The manager shares the upside but not the downside, which creates an incentive to take risk after a poor period, when the fee is out of the money. Hurdles, clawbacks and manager co-investment are the standard mitigations.

9.3 What liquidity terms should you look at?

- **Lock-up:** a period during which you cannot redeem at all, or only with a fee.
- **Notice period and redemption frequency:** how long between deciding to leave and receiving cash.
- **Gates:** a cap on total redemptions in a period, which can trap you when others are also leaving.
- **Side pockets:** illiquid positions carved out and realised over time.
- **Suspension rights:** the manager's power to halt redemptions entirely.

The principle: the liquidity of a fund is the liquidity of its underlying assets, whatever the documents say. Fund terms that promise more than the assets can deliver are a warning, not a feature.

9.4 What is net asset value, and why is valuation policy important?

What to say

Net asset value is the fund's assets less liabilities, per unit, and it is the price at which investors enter and exit. For listed assets it is mechanical; for illiquid or hard-to-price assets it is an estimate, so who makes it and how it is reviewed determines whether investors are transacting at a fair price. Best practice is independent valuation, a documented policy, and an administrator who strikes the NAV rather than the manager.

9.5 Who does what in fund operations?

Party	Role
Investment manager	Makes investment decisions
Custodian	Holds the assets, separate from the manager. The single most important protection against fraud
Administrator	Strikes the NAV, keeps the books, processes subscriptions and redemptions
Auditor	Audits the financial statements annually
Prime broker	Financing, securities lending and execution for leveraged strategies; a counterparty risk
Trustee or depositary	Oversight on behalf of investors in some jurisdictions

9.6 What is the total cost of ownership, beyond the management fee?

What to say

Performance fees, administration and custody, audit and legal, transaction costs and market impact, taxes and withholding, currency hedging costs, and for fund-of-funds the extra layer of fees. Comparing headline management fees misses most of this, which is why allocators compare total expense and, where possible, look at net returns actually received.

9.7 What structural issues arise for African mandates?

What to say

Where the fund is domiciled and what that means for tax and investor access; exchange control and repatriation, which determine whether a local investor can fund an offshore allocation at all; withholding taxes on dividends and interest; the availability of local custodians meeting institutional standards; and currency of reporting, since a fund may report in dollars while its assets and its investors are local.

9.8 What ethical and conduct issues should you expect to be asked about?

What to say

Material non-public information and what to do if you receive it; conflicts of interest between clients, or between the firm and a client; allocation of investment opportunities and trade errors; personal account dealing; gifts and entertainment; and best execution. The safe instinct is simple and it is also the correct one: act in the client's interest, never trade or pass on information you should not have, document the decision, and when a situation is ambiguous escalate to compliance rather than improvise. Saying you would check with compliance is a strength, not a dodge.

Expect at least one conduct question in any buy-side interview. A candidate who tries to find the clever way around a conflict fails it.

The allocator's interview

Cases and judgement questions specific to this seat. Structure first, numbers second, a view always.

10.1 How would you invest \$1bn for a pension fund?

What to say

Ask first: what are the liabilities, how well funded is the scheme, what is the membership profile, what regulatory limits apply, and what currency are benefits paid in. Then structure the answer: define risk as funded-ratio risk, build a matching portfolio for the liabilities you can match, use growth assets sized to the deficit and the sponsor's tolerance, set ranges and rebalancing bands, plan the liquidity for benefit payments, and specify the benchmark and reporting. Close with the one thing you would want the board to agree in advance: the funded-ratio loss they could live with.

10.2 How would you invest \$1bn for a sovereign wealth fund in a commodity exporter?

What to say

The key question is what the fund is for. A stabilisation fund must be liquid and negatively correlated with the commodity, so it holds short-dated hard-currency government bonds and cash, because it will be drawn on exactly when the commodity price falls. A savings fund for future generations can hold global equities and private assets, and should deliberately diversify away from the domestic economy and currency. A domestic development fund is doing something different again, and should be assessed on project returns, not benchmarked to global markets.

10.3 Equities have fallen 25%. What do you do?

What to say

Follow the policy. Rebalancing bands will have been breached, so the portfolio buys equities mechanically, which is the discipline the policy exists to enforce. Then check liquidity: can we meet outflows and capital calls without selling growth assets at the bottom. Then check whether anything in the strategic case has actually changed, as distinct from the price. I would resist making a new tactical decision in the middle of a drawdown, because that is when governance is weakest.

10.4 Defend a tactical tilt.

What to say

State the view, the evidence, the size, the time frame and the exit. "Local long bonds yield 16% against 12% inflation and the central bank has begun cutting, so I would move 5 percentage points from cash to long duration, funded from cash, reviewed in two quarters, and reversed if inflation surprises above 14%." A tilt with no exit condition is not a tilt, it is a new strategic allocation adopted by accident.

10.5 How much home bias is appropriate?

What to say

It depends on the liability currency, the regulatory limits and the depth of the local market. A fund paying local-currency benefits has a genuine reason to hold local assets, and a hedging cost that makes offshore allocations expensive. But concentration in one small economy, often dominated by a few listed names and one commodity, is a real risk, so I would use the full offshore allowance for diversification unless there is a specific reason not to.

10.6 How would you integrate ESG into an allocation?

What to say

Distinguish three things: integration, using environmental, social and governance information as part of risk analysis; exclusion, refusing to hold certain assets on policy grounds; and impact, seeking a specific outcome alongside return. Integration is straightforward analysis. Exclusion is a policy choice with a cost that should be measured and disclosed, including a narrower opportunity set and tracking error against a standard benchmark. For African portfolios, governance is usually the factor with the clearest financial consequence.

10.7 A manager-selection case: two managers, same benchmark, same five-year return. How do you choose?

What to say

Decompose both records. Which took more risk, measured by volatility, beta and drawdown. Which return is explained by factor exposure rather than selection, since a value tilt is cheaper to buy in an index. Which has consistency across years rather than one decisive period. Which team is intact and which is at capacity. Which has cleaner operations and better terms. If both survive all that, I would take the one whose edge I can explain in a sentence and whose process I can verify in the holdings.

10.8 What would you change about how most portfolios are run?

What to say

A genuine view, defended briefly, is what they are testing. Defensible answers include: too much attention to manager selection and too little to the allocation that drives most of the outcome; too much confidence in historical correlations; fee structures that do not reward long-term outcomes; and governance processes that force decisions at the worst moments. Pick one you believe and be able to argue the other side.

10.9 Why investment management rather than banking or private equity?

What to say

Because the work is forming views about markets and companies, being measured on whether those views were right, and compounding capital over years. Banking advises on transactions; private equity owns a small number of companies outright. This seat suits someone who wants breadth, a long horizon and continuous feedback on their judgement. Then give one concrete piece of evidence that you actually like doing it.

Guide 06 covers the story, behavioural and fit questions in full; Guide 10 covers the stock pitch and the "what are you watching now" question.

SECTION 11

Test yourself

Work the numbers on paper before checking.

#	Question
1	A fund returns 11%, the risk-free rate is 3% and volatility is 16%. What is the Sharpe ratio?
2	Two assets each have 20% volatility and a correlation of 0.5. What is the volatility of an equal-weighted portfolio?
3	A portfolio gains 30% then loses 30%. What is the two-year and the annualised return?
4	Active return is 4% and tracking error is 8%. What is the information ratio?
5	Beta 0.8, market return 10%, risk-free 2%. What does CAPM predict, and what is alpha if the fund returned 10%?
6	Expected returns are 9% for equities and 5% for bonds. What is the expected return of a 70/30 portfolio?
7	A bond has modified duration 6 and convexity 80. Yields rise 1%. Estimate the price change.
8	Nominal ten-year bonds yield 6.0% and linkers yield 2.2%. What is breakeven inflation?
9	Assets \$800m with duration 4; liabilities \$1,000m with duration 12. Rates fall 1%. What happens to the funded ratio?
10	A 60/40 portfolio with 5-point bands. Equities rise 20%, bonds are flat. Has a band been breached?
11	Local rates are 15% and dollar rates 4%. Roughly what does it cost a local investor to hedge a dollar asset?
12	A fund targets 20% in private equity on a \$1bn portfolio and funds call capital over four years, with 60% invested at any time. Roughly what annual commitment is needed?
13	Why can a manager's time-weighted return be positive while the client's money-weighted return is negative?
14	Name two weaknesses of VaR and the measure that partly addresses them.
15	What is the difference between active share and tracking error?

16 Benchmark: 60% equities up 8%, 40% bonds up 2%. You held 80/20 and matched each asset's return. What was the allocation effect?

ANSWERS

Answers

#	Answer
1	$(11 - 3) \div 16 = 0.5$.
2	$\sqrt{(0.25 \times 0.04 + 0.25 \times 0.04 + 2 \times 0.5 \times 0.5 \times 0.2 \times 0.2 \times 0.5)} = \sqrt{0.03} \approx 17.3\%$.
3	$1.3 \times 0.7 = 0.91$, so -9% over two years, or about -4.6% a year.
4	$4 \div 8 = 0.5$.
5	CAPM predicts $2\% + 0.8 \times 8\% = 8.4\%$. Alpha is $10\% - 8.4\% = +1.6\%$.
6	$0.7 \times 9\% + 0.3 \times 5\% = 7.8\%$.
7	-6% from duration, plus $0.5 \times 80 \times 0.01^2 = +0.4\%$, so about -5.6%.
8	$6.0\% - 2.2\% = 3.8\%$.
9	Assets rise 4% to \$832m; liabilities rise 12% to \$1,120m. The funded ratio falls from 80.0% to 74.3%. Falling rates hurt an underhedged scheme.
10	Equities become 72 and bonds 40, a total of 112, so equities are 64.3%. That is a 4.3 point deviation, inside the 5 point band, so no rebalancing is triggered yet.
11	Roughly the interest rate differential, about 11% a year, which is why local investors in high-rate markets usually leave dollar exposure unhedged.
12	Target NAV is \$200m. At 60% invested, commitments of about \$333m are needed in total, called over four years, so roughly \$83m a year.
13	Because a large contribution arrived just before a loss, so most of the capital was exposed only to the bad period. Time-weighted measures the manager; money-weighted measures the investor's experience.
14	It says nothing about the size of losses beyond the threshold and relies on historical relationships that break in a crisis. Expected shortfall, the average loss in the tail, partly addresses both.
15	Active share measures how different the holdings are; tracking error measures how differently the portfolio behaves. High active share with low tracking error means different names with similar exposures.
16	Benchmark return 5.6%, portfolio 6.8%, so +1.2%, all allocation: equities $(0.8 - 0.6)(8 - 5.6) = +0.48$ and bonds $(0.2 - 0.4)(2 - 5.6) = +0.72$.

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