CHARTA LEARNING · INTERVIEW PREPARATION

Asset Management: Portfolios, Performance and Manager Selection

Interview preparation summary · HF track

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INT.HQ.1.a · Building a portfolio

Compute active weights, active share and a tracking error budget for a benchmark-relative portfolio, and size positions from conviction and liquidity.

A long-only manager is judged against a benchmark, so every position is a decision relative to it. The active weight is the portfolio weight minus the benchmark weight, and a share that is not owned is an underweight equal to its whole benchmark weight. Active share is half the sum of the absolute active weights: 0% is the index and 100% shares nothing with it, and a low figure with a high fee points to closet indexing. Tracking error is the annualised standard deviation of active returns, and ex-ante it comes from active weights times the stock-specific risk, combined with correlations. A risk budget caps tracking error, say 4%, and shows which bets use it: because risk adds as variance, one large position can use a third of the budget. Size from conviction scaled by liquidity: days to trade out, and the share of daily volume the fund can hold. The common mistake is sizing by absolute weight and ignoring what the benchmark already holds.

WORKED EXAMPLE: ACTIVE WEIGHTS, ACTIVE SHARE AND RISK BUDGET

A fund is run against a benchmark that, for this exercise, has eight shares. Benchmark weights and fund weights in percent are: Ashdown 20 and 30, Birch 18 and 6, Carrow 15 and 15, Dunmere 12 and 24, Elmgate 10 and 0, Fenwick 10 and 10, Garrow 8 and 12, Holm 7 and 3. Annual stock-specific volatility for the shares with an active weight is: Ashdown 20%, Birch 24%, Dunmere 18%, Elmgate 22%, Garrow 15%, Holm 30%. Treat the active bets as uncorrelated. Find the active share, the tracking error and the share of the risk budget used by the Birch underweight.

Answer: The active share is 26%, the ex-ante tracking error is about 4.86% a year if the bets are uncorrelated, and the Birch underweight uses about 35% of the risk variance.

> **Interview tip:** Say active share first, then tracking error, then which bet uses most of the budget and what you would do about it. State that you assumed uncorrelated active bets and that real correlations between similar shares would raise the figure.

INT.HQ.1.b · Building a portfolio

Explain strategic and tactical asset allocation, rebalance a portfolio against bands, and describe factor tilts, diversification, drawdown, turnover and cost.

Strategic asset allocation is the long-run mix set from the client's objective and risk tolerance, for example 60% equities and 40% bonds, and it drives most of the variation in a balanced portfolio's return. Tactical allocation takes bounded short-run deviations from it, usually a few percentage points, when the manager has a view on valuation or the cycle. Markets move the weights, so portfolios are rebalanced: on a calendar, when a band is breached, or by a mix of both. Bands reduce trading but allow drift, and rebalancing mechanically sells what has risen, which helps in mean-reverting markets and hurts in a long trend. Diversification helps only where assets do not fall together, and correlations often rise in a crisis. Factor tilts such as value, quality, momentum, size and low volatility are persistent exposures, not guarantees, and they can lag for years. Judge a change by its turnover, trading cost and the drawdown it risks, since costs reduce return with certainty.

WORKED EXAMPLE: DRIFT, BANDS AND THE COST OF REBALANCING

A balanced portfolio of £500m has a strategic allocation of 60% equities and 40% bonds, with a rebalancing band of plus or minus 5 percentage points. Over a year equities return 20% and bonds return 2%, with no flows. Trading costs 0.15% of the value traded on each leg. Work out the new weights, whether a band rule would trade, what a calendar rebalance would trade and cost, and the size of a tactical overweight of 3 percentage points.

Answer: Equities have drifted to 63.8%, inside the band so no trade is required; a calendar rebalance would sell 21.6m of equities for a cost of about £64,800, and a 3 point tactical tilt is about 16.9m.

Interview tip: Compare the two rules out loud: bands trade less and let winners run, a calendar rule controls risk more tightly. Quote the cost in £ and in percent of assets, and say that cost is certain while the benefit of rebalancing is not.

INT.HQ.1.c · Building a portfolio

Present a long-only idea pitch covering thesis, valuation against the benchmark, catalyst and horizon, what would make you wrong, sizing, exit, and quality and ESG factors.

A long-only pitch argues for owning a share relative to the benchmark, over a horizon of years. Open with the thesis in one sentence, then show what the market already expects through the multiple, and compare valuation with the benchmark and the share's own history. Give a catalyst or a reason the gap closes, and a horizon, because a cheap share with no path to re-rating can stay cheap. Build three scenarios with probabilities, include dividends, and compare the expected annual return with the benchmark's, not with zero. Cover quality: returns on capital, balance sheet, cash conversion and management incentives. Mention material ESG factors at overview level, such as governance, emissions exposure or labour practices, only where they bear on cash flows or risk. Say what would make you wrong, in measurable terms. Sizing is the active weight, scaled to conviction, downside and liquidity, and exit rules say when you trim or sell. The common mistake is a pitch that ends with a price target but no sizing or exit.

WORKED EXAMPLE: EXPECTED RETURN OF A PITCH AGAINST THE BENCHMARK

You pitch Tarn Packaging, an invented company, at 400p. Forward earnings per share are 40p and the benchmark trades on 14 times forward earnings. It pays 16p of dividends a year, held flat, and your horizon is three years. Scenarios for the price at the end of year three: bull 560p with probability 25%, base 480p with probability 50%, bear 300p with probability 25%. You assume the benchmark returns 6% a year. The benchmark weight is 1.5% and you propose 3.5%. Work out the valuation gap, the expected return, the excess return and the contribution from the position.

Answer: The share is at a 29% discount to the benchmark multiple, the expected return is about 7.9% a year against 6.0% for the benchmark, and a 2.0% overweight adds only about 4 basis points a year, so the weight needs conviction and a stated exit.

Interview tip: Always finish with sizing and what would make you sell. Compare the expected return with the benchmark, say the horizon, and keep ESG to the factors that bear on the cash flows.

INT.HQ.2.a · Measuring and selecting

Calculate and interpret excess return, Sharpe ratio, information ratio, tracking error, up and down capture, and drawdown.

Excess return is the fund return minus the benchmark return. The Sharpe ratio divides return above the risk-free rate by the volatility of the fund, so it measures reward per unit of total risk and suits an absolute return objective. The information ratio divides average excess return by the tracking error, the standard deviation of the excess returns, so it measures reward per unit of active risk and is the usual test of a benchmark-relative manager. Up capture and down capture compare the fund's average return with the benchmark's in rising and falling periods: above 100% up and below 100% down is the desirable pattern. Maximum drawdown is the largest peak-to-trough fall in value, quoted as a percentage of the peak. All of these need enough observations: a handful of years proves little, and annualising a short or smoothed series can mislead. Name the period, the frequency and whether returns are net of fees before quoting any ratio.

WORKED EXAMPLE: SIX YEARS OF A MANAGER AGAINST ITS BENCHMARK

A manager and its benchmark have annual returns of: manager 12%, minus 8%, 15%, 6%, 20%, minus 4%; benchmark 10%, minus 12%, 11%, 8%, 14%, minus 6%. The risk-free rate is 2% a year. Use sample standard deviations and arithmetic averages. Find the mean excess return, tracking error, information ratio, the two capture ratios and the maximum drawdown of each.

Answer: Mean excess return is 2.67 points, tracking error 2.73, information ratio 0.98, up capture 123%, down capture 67%, maximum drawdown 8% against 12%, and Sharpe 0.44 against 0.21.

> **Interview tip:** Quote the information ratio for a benchmark-relative mandate and the Sharpe ratio for an absolute one, state the period and whether the returns are net of fees, and warn that six years is a small sample.

INT.HQ.2.b · Measuring and selecting

Compute Brinson-style performance attribution into allocation, selection and interaction effects, and interpret the result.

Attribution explains why a portfolio beat or lagged its benchmark by splitting the excess return across segments such as sectors. In the usual Brinson-style form, the allocation effect for a segment is the active weight times the benchmark segment return minus the total benchmark return, so overweighting a segment that beat the benchmark adds value. The selection effect is the benchmark weight times the difference between the portfolio and benchmark segment returns, so it rewards better stock choice inside a segment. The interaction effect is the active weight times that return difference, the joint effect of both decisions, and it is reported separately or folded into selection. The three effects sum to the total excess return, which is a useful check. Results depend on the segmentation chosen, the period and whether returns are linked over time. The interview point is interpretation: a manager can pick good stocks and still lag because of the weights they held.

WORKED EXAMPLE: SPLITTING A SMALL SHORTFALL INTO THREE EFFECTS

A fund and its benchmark are split into three sectors for one year, with weights and returns in percent. Consumer: fund weight 50 and return 6, benchmark weight 40 and return 5. Financials: fund weight 20 and return 9, benchmark weight 35 and return 8. Industrials: fund weight 30 and return 3, benchmark weight 25 and return 4. Compute the fund and benchmark returns and the allocation, selection and interaction effects, and say what the result means.

Answer: Allocation was minus 0.50 points, selection plus 0.50 and interaction minus 0.10, which sum to the excess return of minus 0.10 points; stock selection was good but sector weights cost the same amount.

> **Interview tip:** Always check that the effects add to the excess return, then tell the story in one sentence: what the manager got right, what cost them, and what you would ask them about the weights.

INT.HQ.2.c · Measuring and selecting

Run a manager or fund selection and monitoring process using people, process, philosophy, portfolio, performance and price, and spot style drift, red flags and survivorship bias.

Selecting a manager starts with the six Ps: people (experience, stability, incentives), process (how ideas become positions), philosophy (why the edge should exist and persist), portfolio (holdings, concentration, active share), performance (net of fees, over a full cycle, against benchmark and peers) and price (fees and the net return after them). Performance is the least reliable guide, because past outperformance often owes much to luck or to a style that was favoured. Check that returns come from the stated process. Monitoring watches for style drift: falling active share or tracking error, a rising number of holdings, or exposures that differ from the mandate. Red flags include key-person departures, rapid asset growth, unexplained turnover, valuation of illiquid holdings and changes to the process after a poor spell. Peer groups need care: survivorship bias removes closed funds and lifts the average. The common mistake is hiring on a good three years.

WORKED EXAMPLE: NET RETURNS, FEES AND SURVIVORSHIP IN A MANAGER REVIEW

A trustee reviews an invented manager, Penrith Equity. Over five years its gross return was 6.4% a year, its annual fee was 0.80%, the benchmark index returned 5.4% a year, and a passive fund tracking it charges 0.10%. In a peer group of 10 funds that existed at the start, 7 survived and returned an average of 6.0% a year; the 3 that closed averaged 2.0% a year to closure. Penrith's active share has fallen from 85% to 58%. Work out the net outcome, the peer comparison and the fee per unit of active share.

Answer: Penrith returned 5.6% net against 5.3% for a passive fund, beats the full peer average of 4.8% but not the survivors' 6.0%, and its fee per unit of active share has risen from 0.94% to 1.38%.

> **Interview tip:** Lead with net returns and the passive alternative, then show you know peer data is biased by survivorship, and finish with what you would ask the manager and what would make you act.

Summary of the Charta interview-preparation topic. Companies and figures in the examples are invented. Draft content, not yet expert reviewed.