Multi-Asset Investing and Asset Allocation

Interview preparation summary · HF track

IN THIS SUMMARY

- Multi-asset funds and strategic allocation
- Risk, implementation and results

INT.HW.1.a · Multi-asset funds and strategic allocation

Describe the main types of multi-asset fund (balanced, target-date and lifestyle, diversified growth, risk-targeted, income and outcome-oriented funds, and model portfolios), what each promises and who buys it.

A multi-asset fund holds several asset classes in one portfolio and a manager, or a model, decides the mix. The products differ in what they promise. A balanced fund keeps a broad policy mix, often around 60% equities and 40% bonds, and is measured against a blended benchmark. A target-date or lifestyle fund moves along a glide path, cutting equities and adding safer assets as a retirement year approaches, and suits savers who do not want to choose. A diversified growth fund aims for a cash-plus return with less volatility than equities and is free to move between asset classes. A risk-targeted fund promises a level of volatility (cautious, balanced, adventurous) rather than a return, and advisers and platforms use ranges of them to match clients to risk profiles. An income solution pays a target yield from dividends, coupons and other sources, and an outcome-oriented fund aims at an objective such as inflation plus a margin. A model portfolio is a list of weights, often built from funds or ETFs, that an adviser or platform applies to many accounts. Buyers are retail savers, workplace pension schemes, advisers, platforms and charities. The common point is that a target is an aim, not a guarantee, and the interviewer will test whether you can say what the client is actually buying: a risk level, an age path, an income, or an objective.

WORKED EXAMPLE: READING A TARGET-DATE GLIDE PATH

Arden Target 2036 is an invented target-date fund. It holds 90% in equities until 25 years before the target year, then cuts the equity weight by 2 percentage points a year to 40% at the target year, with the rest in bonds. Use illustrative assumptions: equities return 6% with volatility 16%, bonds return 3% with volatility 6%, correlation 0.2. A saver 10 years from retirement asks what the fund holds, what return and risk to expect, and how it differs from a balanced fund that keeps 60% in equities.

Answer: At 10 years to go the fund holds 60% in equities and 40% in bonds, with an expected return of about 4.8% and volatility of about 10.4%. Over the next 10 years it cuts equities to 40%, which lowers expected return to 4.2% but cuts volatility to 7.9% and the loss in a bad year from about 27% to about 11%. A balanced fund keeps 60% whatever the age. The aim is a date, not a guarantee.

> **Interview tip:** Always say what the buyer is really getting (a risk level, an age path or an income) and that a target is an aim, not a promise.

INT.HW.1.b · Multi-asset funds and strategic allocation

Build a strategic asset allocation from return, risk and correlation assumptions, and explain the efficient frontier, the role of equities, bonds, real assets and alternatives, and how liabilities and glide paths change the answer.

Strategic asset allocation is the long-run mix of asset classes, set from assumptions about each asset class's expected return, volatility and correlation with the others, and from the investor's goals, constraints and liabilities. An optimiser or a simple grid then traces an efficient frontier, the set of mixes with the highest expected return for each level of risk, and the investor picks a point that fits their risk tolerance. At a general level each asset has a role: equities for long-run growth, government bonds for stability and protection when growth falls, inflation-linked bonds and real assets such as property and infrastructure for income and inflation protection, and alternatives for diversification when they truly behave differently. Three warnings matter in an interview. The output is very sensitive to the inputs, so test ranges and apply limits rather than trust one set of weights. Real assets are valued by appraisal, which smooths reported volatility, so true risk is higher than the history shows. Liabilities change the question: a pension scheme or an investor with a fixed spending need cares about risk relative to those payments, so assets that move with the liabilities, such as long bonds, can reduce risk even if their expected return is lower. A glide path is a strategic allocation that changes with time to a goal. Say that the strategic mix is the largest driver of long-run fund results, then check it against the client's horizon.

WORKED EXAMPLE: DOES A REAL ASSETS SLEEVE IMPROVE A 60/40 MIX

A charity holds 60% equities and 40% bonds. A consultant proposes a mix of 50% equities, 30% bonds and 20% real assets, and a third mix of 40%, 40% and 20%. Use illustrative assumptions: expected returns 6.5%, 3.5% and 5.5%; volatilities 16%, 6% and 12%; correlations equities-bonds 0.1, equities-real assets 0.6, bonds-real assets 0.2; cash 2.0%. Compare the three mixes and test the result.

Answer: On the stated assumptions the 50/30/20 mix beats the 60/40 mix: 5.4% against 5.3% expected return and 10.03% against 10.13% volatility. The 40/40/20 mix has the best ratio but a lower return, so the choice depends on the charity's risk budget. The case rests on real asset assumptions, which appraisal smoothing makes look too good, so I would use ranges and a cap on the sleeve.

> **Interview tip:** Give the answer, then show you distrust it: say which assumption it depends on and what happens when you change it.

INT.HW.1.c · Multi-asset funds and strategic allocation

Turn a market view into a tactical tilt, size it within a risk budget set against the strategic benchmark, and judge whether tactical allocation adds value after costs.

Tactical asset allocation moves weights away from the strategic mix for months or quarters to express a view, for example valuation, the economic cycle, momentum or central bank policy. A view becomes a tilt in four steps: write the view as an expected excess return of one asset class over another, choose the funding leg so the tilt is a pair (overweight equities, underweight bonds), size it from the expected return per unit of risk it adds, and check the total against a risk budget, usually tracking error against the strategic benchmark. Tracking error of a tilt is the tilt size times the volatility of the difference between the two legs, and several tilts add in squares, not in a straight line, unless they are correlated, when the total is higher. The information ratio, active return divided by tracking error, tells you how much return each unit of active risk is earning, and it needs enough years of data to mean anything. Costs reduce the gain: every tilt means trading in and out. To judge skill, separate timing from simple exposure: a fund that was overweight equities in a long bull market may only have collected equity beta. Strong answers also say tilts should be cut when the evidence behind them weakens and that tactical allocation is usually a small part of total risk next to the strategic mix.

WORKED EXAMPLE: SIZING AN EQUITY OVERWEIGHT WITHIN A RISK BUDGET

A multi-asset fund has a strategic mix of 60% equities and 40% bonds and a tracking error budget of 1.0% a year. The team expects equities to beat bonds by 2.0% over the next year and proposes to overweight equities by 5 points, funded from bonds. Use illustrative volatilities of 16% (equities) and 6% (bonds) and a correlation of 0.1. Trading costs 0.10% of the amount traded, and the tilt is put on and taken off within the year.

Answer: The tilt adds an expected 0.10% a year, or 0.08% after costs, for a tracking error of 0.83%, so the information ratio is about 0.12 before costs and 0.10 after. It uses about 83% of a 1.0% risk budget. It is a small position suited to a moderate view, and I would only enlarge it if I could show why the market is wrong.

> **Interview tip:** Quote tracking error and the information ratio, not just the direction of the view, and say what the tilt costs to put on.

INT.HW.2.a · Risk, implementation and results

Calculate volatility contributions for a portfolio, explain risk budgeting and risk parity including its use of leverage, and explain why diversification weakens when correlations rise in a crisis.

Risk budgeting asks how much of a portfolio's risk each asset class or decision uses, rather than how much money it holds. An asset's volatility contribution is its weight times its covariance with the portfolio, divided by the portfolio's variance, and the contributions of all assets add to 100%. A 60/40 mix of equities and bonds looks balanced by capital but takes roughly nine tenths of its risk from equities, because equities are far more volatile. Risk parity sets weights so that each asset class supplies about the same share of risk, which means holding much more in low-volatility assets such as bonds. The unlevered result has low volatility and a low return, so risk parity funds usually use leverage, borrowing or futures to scale the portfolio to a target volatility. Leverage has a cost (financing), a hidden dependence on the assumption that bonds earn enough per unit of risk, and a funding and margin risk when markets fall together. Diversification works through low correlation, but correlations tend to rise in a crisis, and the stock and bond correlation can turn positive when inflation or rates drive both, so the risk in a downturn is higher than the average history suggests. Say that diversification is real but conditional, and that stress tests with higher correlations belong in any answer.

WORKED EXAMPLE: WHERE THE RISK IS IN A 60/40 MIX AND WHAT RISK PARITY CHANGES

A fund holds 60% equities and 40% bonds. Use illustrative volatilities of 16% and 6% and a correlation of 0.2. Find the volatility contribution of equities, the equal risk weights, the leverage needed to reach 10% volatility, and what happens in a stress where volatilities are 25% and 8% and the correlation is 0.6. Equities return 6%, bonds 3% and borrowing costs 2.0%.

Answer: Equities give about 90% of the 60/40 mix's risk. Risk parity holds 27% equities and 73% bonds, needs 1.48 times leverage for 10% volatility, and on these inputs earns about the same return per unit of risk as the 60/40 mix. In a stress with correlation at 0.6 both mixes show volatility above 16%, so diversification weakens exactly when it is needed.

Interview tip: Show that you know leverage is a cost and a risk, not a free gain, and mention a stress with higher correlations.

INT.HW.2.b · Risk, implementation and results

Set a rebalancing rule and explain its effect on returns and risk, and choose instruments (ETFs, futures, derivatives overlays, currency hedges) and underlying funds with their costs in mind.

Rebalancing restores the target weights after markets move, because the assets that did best grow into a larger share of risk. Rules include a calendar (for example quarterly), a threshold (trade when a weight is more than a set number of points from target) or a mix of the two. Frequent rebalancing keeps risk close to the target but costs more in trading and tax, and in a strong trend it sells winners early, while in a market that moves back and forth it adds return. Threshold rules trade only when needed and are common in practice. For implementation, ETFs give broad exposure in one trade and are common in model portfolios, futures give cheap and quick exposure to equity indices, bonds and currencies with little cash and are used for tactical changes and overlays, and swaps and options are used for specific needs. A currency hedge removes foreign exchange moves from foreign assets at a cost related to the interest rate gap between the currencies, and it is often partial, because currency can diversify equities. Costs include fund fees, dealing spreads, market impact, tax, and the funding and margin needs of derivatives, and a small annual difference compounds over a decade. For choosing underlying funds or managers in outline, check process, people, consistency of results against risk taken, capacity and fees, and an active fund must earn its fee over the cheaper index option. Always link the instrument to the purpose.

WORKED EXAMPLE: REBALANCING A 60/40 FUND AFTER A STRONG EQUITY YEAR

Ferndale Balanced is an invented fund that started the year at 500m with a 60/40 target between equities and bonds. Over the year equities rise 20% and bonds are flat. The investment committee has a quarterly calendar rule and a rule to trade when a weight is more than 5 points from target. Trading costs are 0.10% of the amount traded in cash markets. Equity index futures are available at a notional of 200,000 per contract. Illustrative volatilities are 16% and 6% with a correlation of 0.2.

Answer: Equities have drifted to 64.3% and the fund would sell 24.0m of equities to return to 60%, about 120 futures contracts, at a cash dealing cost of about 48k. Volatility has moved only from 10.4% to 10.9%, so a 5 point threshold would not trade and a quarterly rule would. I would use a threshold with a quarterly review, because it controls risk without paying to trade small drifts.

Interview tip: Name the rule, the trade and the cost, and say that rebalancing is mainly a risk control, not a source of return.

INT.HW.2.c · Risk, implementation and results

Attribute a multi-asset fund's return against its benchmark into allocation and selection effects, judge the result against the risk target, and explain a view and a result to a client in plain language.

Attribution explains why a fund beat or missed its benchmark. For a multi-asset fund the benchmark is a blend of indices at the strategic weights, or a cash-plus target for diversified growth funds, and the risk target is the volatility or drawdown the client was told to expect. In the Brinson method the allocation effect for an asset class is the difference between fund and benchmark weight times the benchmark class return relative to the total benchmark return, so an overweight only adds value if that class beat the benchmark as a whole. The selection effect is the benchmark weight times the difference between fund and benchmark return in the class, and the interaction effect is the weight difference times the return difference. The three add to the total difference in return, which you should always check. Judge the result against the risk taken: a fund that beat its benchmark but ran well above its volatility target has not delivered what was promised, and the information ratio and the

length of the record matter. When explaining to a client, use plain words, start with what happened to their money, separate market moves from the manager's decisions, say whether the risk was as agreed, and say what you will and will not change. Avoid prediction, jargon and comparisons that flatter.

WORKED EXAMPLE: ATTRIBUTING A YEAR FOR A BALANCED MULTI-ASSET FUND

Halden Balanced is an invented fund. Its benchmark is 50% equities, 40% bonds and 10% cash. The fund held 55%, 35% and 10%. Returns for the year: fund 10.0% in equities, 2.0% in bonds and 4.0% in cash; benchmark indices 8.0%, 3.0% and 4.0%. The fund's risk target is volatility of about 8%. Split the result into allocation, selection and interaction, and say what to tell the client.

Answer: The fund returned 6.6% against 5.6% for the benchmark, an excess of 1.0 point: allocation 0.25, selection 0.60 and interaction 0.15. Selection in equities did most of the work and bond selection detracted. The result counts as good only if realised volatility stayed near the 8% target, and the client should hear all of this in plain words.

> **Interview tip:** Always check that the effects add to the total, and say whether the extra return came with extra risk.

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