CHARTA LEARNING · LESSON NOTES

Currency exposure: risk, strategy and design

Derivatives and Risk Management

1 A story: two bets in one suitcase

- Alder: a euro fund with 300m in dollar assets
- A foreign asset earns two returns at once
- One from its own market, one from its currency
- They compound, and their risks interact

IN THE LESSON

- Imagine you buy a house in another country.
- You pay in your own money, but the house is priced in theirs.
- When you sell, you earn two things at once.
- One is what the house did in its own market: did its price rise?
- The other is what the local money did against yours.
- Alder Pension Fund is in exactly that position.
- It is a euro fund, and it holds three hundred million euros of dollar assets.
- A dollar share earns whatever the share earns, and then the dollar itself moves against the euro.
- The fund's real return is a blend of the two, and so is its risk.

2 Return in your own currency

RDC = (1 + RFC) × (1 + RFX) − 1

Return in base currency	What the investor really earns
Local return	Return in the asset's own market
Currency change	Plus when foreign money gains

IN THE LESSON

- Here is the first formula.
- The return in your own currency equals one plus the local return, times one plus the currency change, all minus one.
- The local return is what the asset earned in its own market.
- The currency change is how much the foreign currency gained or lost against your base currency, which for Alder is the euro.
- Why multiply?
- Because the money you earn in dollars is then converted at the new rate, so both pieces grow together.
- Adding the two returns misses the small extra piece where they overlap.
- That piece is the product of the two returns, and it grows when the moves are large.
- Whenever you meet a foreign return in an exam, reach for this formula first.

3 Example 1: Alder's two holdings

Equities 60%: +8%, currency −5%. Bonds 40%: +1%, currency +4%

Equities, base-currency return	1.08 × 0.95 − 1	**2.60%**
Same, by simple adding	8% − 5%	**3.00%**
Bonds, base-currency return	1.01 × 1.04 − 1	**5.04%**
Portfolio return	0.6 × 2.60 + 0.4 × 5.04	**3.58%**
Euro gain on 300m	3.58% × 300m	**10.73m**

IN THE LESSON

- Let us work it out for Alder.
- The three hundred million splits sixty forty.
- Shares are sixty per cent and bonds are forty per cent.
- The shares earned eight per cent locally, but the dollar fell five per cent against the euro.
- One point zero eight times point nine five, minus one, is two point six zero per cent.
- Simply adding would have said three.
- The bonds earned only one per cent, but the dollar rose four per cent, so one point zero one times one point zero four, minus one, gives five point zero four per cent.
- Weighting the two, the portfolio earned three point five eight per cent, about ten point seven three million euros.
- The weaker bonds beat the shares, purely because of currency.

4 Trap: reading the quote the right way round

Quoted as dollars per euro; Alder's base currency is the euro

Quote at the start	dollars per euro	**1.10**
Quote at the end	dollars per euro	**1.15**
Quote rose by	1.15 ÷ 1.10 − 1	**+4.55%**
Dollar's change in euro terms	1.10 ÷ 1.15 − 1	**−4.35%**

The quote rose, but the dollar lost value

IN THE LESSON

- Now the most common trap.
- The formula needs the change in the foreign currency's value, measured in your base currency.
- But exchange rates are quoted both ways round.
- Suppose the rate is quoted as dollars per euro.
- It starts at one point one zero and ends at one point one five.
- The quote went up by four point five five per cent, so it is tempting to say the dollar rose.
- It did the opposite.
- More dollars per euro means each dollar buys fewer euros.
- So invert before you measure.
- The change in the dollar's value in euros is one point one zero divided by one point one five, minus one, which is minus four point three five per cent.
- Always ask what the price of the foreign currency is in your own currency.

5 Risk of the translated return

$\sigma^2(RDC) \approx \sigma^2(RFC) + \sigma^2(RFX) + 2 \times \rho \times \sigma(RFC) \times \sigma(RFX)$

Risk in base currency	What the investor bears
Local risk	Risk in the asset's own market
Currency risk	Risk of the currency alone
Correlation	Negative can offset currency risk

IN THE LESSON

- Now risk.
- The variance of the return in your own currency is roughly the variance of the local return, plus the variance of the currency, plus twice the correlation times the two volatilities.
- This is the rule you already know for combining any two sources of risk, here applied to the asset and its currency.
- Everything depends on the correlation.
- If it is zero or positive, currency always adds risk.
- Only if it is negative enough can currency pull the total down, because it must outweigh the currency's own variance.
- The practical lesson is that currency risk dominates when local risk is small, as with bonds, and is lost in the noise when local risk is large, as with shares.
- Take the square root to get volatility.

6 Example 2: Alder's risk in euros

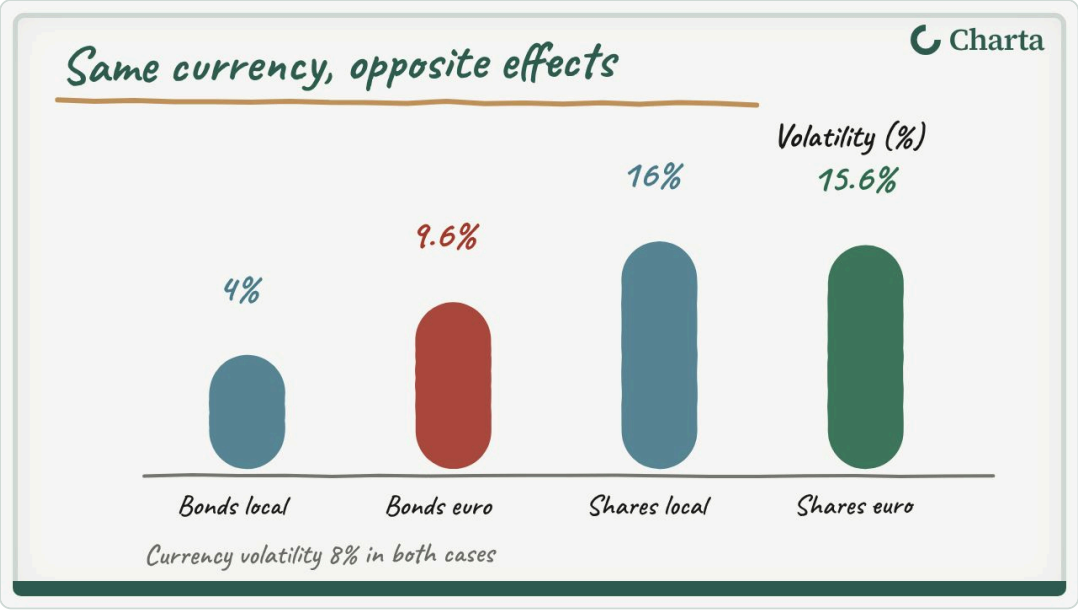
Currency vol 8%; bonds 4% (corr +0.2); equities 16% (corr −0.3)

Bond risk in euros	√(16 + 64 + 12.8)	**9.6%**
Equity risk in euros	√(256 + 64 − 76.8)	**15.6%**
Equity risk, correlation zero	√(256 + 64)	**17.9%**
Break-even correlation, equities	−8 ÷ (2 × 16)	**−0.25**
Break-even correlation, bonds	−8 ÷ (2 × 4)	**−1.00**

IN THE LESSON

- Here are Alder's numbers.
- The dollar has a volatility of eight per cent against the euro.
- The bonds have a local volatility of four per cent and a correlation of plus point two with the currency.
- For the bonds the variance is sixteen, plus sixty four, plus twelve point eight.
- The square root is nine point six per cent.
- The currency has more than doubled the bond risk.
- For the shares, local volatility is sixteen per cent and the correlation is minus point three.
- Two hundred and fifty six, plus sixty four, minus seventy six point eight, gives a volatility of fifteen point six per cent.
- It fell slightly.
- With zero correlation it would have been seventeen point nine.
- The break even correlation for shares is minus eight over two times sixteen, minus point two five.
- For bonds it would be minus one, which essentially never happens.

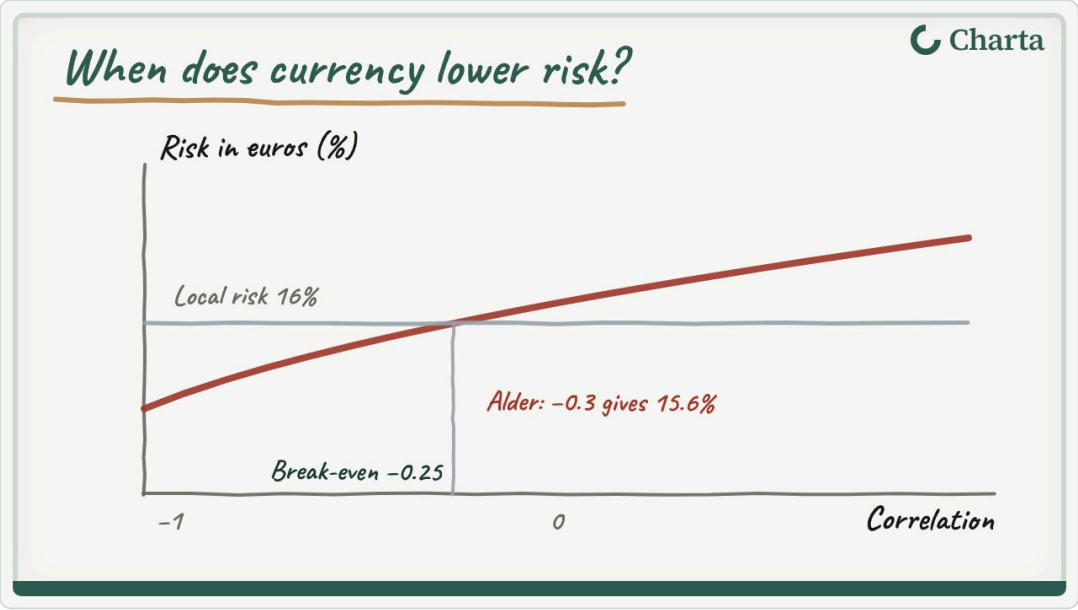
7 Same currency, opposite effects



IN THE LESSON

- Here are those results as bars.
- The vertical axis is volatility in per cent.
- The first pair is the bonds.
- The short bar is the bonds in their own market, four per cent.
- The tall bar next to it is the same bonds seen from the euro, nine point six per cent.
- Currency swamped them.
- The second pair is the shares.
- In their own market they are sixteen per cent, and from the euro they are fifteen point six.
- Currency barely mattered, and it helped a little, because dollar weakness tended to arrive with share market strength.
- This is why managers hedge foreign bonds so readily, while they often leave part of the share exposure alone.
- The currency risk is the same size in both cases.
- What changes is how much other risk sits beside it.

8 When does currency lower risk?



IN THE LESSON

- One last picture for this outcome.
- It shows how the risk of Alder's shares, seen from the euro, depends on the correlation.
- The horizontal axis is the correlation between the share return and the currency, running from minus one on the left, through zero in the middle, towards the right.
- The vertical axis is the risk in euros, in per cent.
- The flat grey line is the local risk of the shares, sixteen per cent.
- Now the curve.
- It starts low on the left, where currency and share returns offset each other, and it rises as the correlation rises.
- It crosses the grey line at minus point two five.
- Left of that, currency lowers the risk.
- Right of that, it adds.
- Alder's correlation of minus point three sits just left of the crossing.

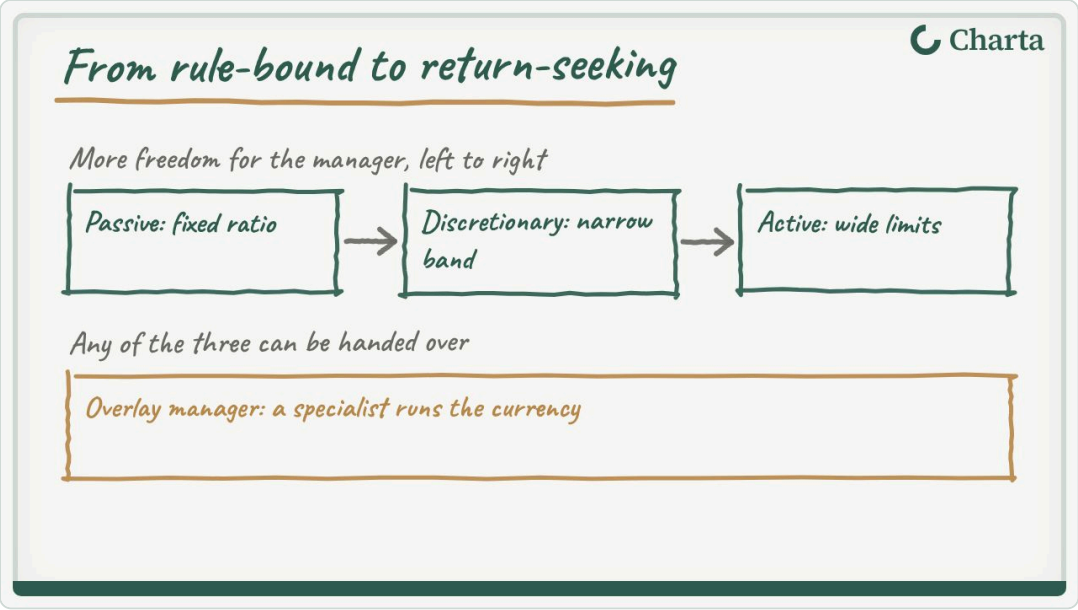
9 A story: the thermostat

- Doing nothing is still a currency policy
- A fixed setting never needs a decision
- A narrow dial lets the manager nudge it
- A specialist can run the dial for you

IN THE LESSON

- Every house has a heating policy, even if nobody chose it.
- Leaving the heating off is a policy too: it means taking whatever the weather brings.
- A pension fund with foreign assets is the same.
- Doing nothing about currency is not neutral.
- It means being fully exposed, and that is a choice.
- Once you accept that, the real question is how much freedom to give the person at the dial.
- You can fix the setting and never touch it.
- You can allow small nudges either way.
- Or you can hire a specialist to run the whole thing.
- The right answer comes from the client's circumstances, not from a forecast of where the dollar is going.

10 From rule-bound to return-seeking



IN THE LESSON

- Here are the choices as a line.
- Read the top row from left to right as more freedom for the manager.
- A passive programme holds a fixed hedge ratio, the share of the foreign assets that is hedged, and rebalances back to it whenever it drifts.
- The manager adds no views.
- A discretionary programme keeps that ratio as an anchor but lets the manager lean a little either side, inside a narrow band.
- An active programme widens the limits so far that currency becomes a source of return in its own right, judged against a benchmark like any other mandate.
- The bottom box is a separate question: who does the work.
- An overlay manager is a specialist who runs the currency exposure, for hedging, for alpha, meaning extra return from skill, or both, while the asset managers keep their portfolios.

11 What pushes the choice

Four client facts and where they push

Client fact	Pushes toward
Bond-heavy mix	More hedging
Short horizon	More hedging
Believes in currency skill	More active
Fear of regret	Partial hedge

IN THE LESSON

- How does Alder choose a spot on that line?
- Four facts about the client push the answer one way or the other.
- First, the asset mix.
- A bond heavy portfolio has currency risk that dwarfs the bond risk, so it pushes toward more hedging.
- Second, the horizon.
- A short horizon leaves no time for currency swings to even out, which also pushes toward hedging.
- Third, belief.
- If the board believes currency management adds value, that pushes toward active management, and if not, toward a passive rule.
- Fourth, regret.
- A board that would equally regret an unhedged loss and a missed currency gain often settles on a partial hedge, so neither outcome looks foolish.
- The cost of hedging matters too, and we return to it shortly.

12 Example 3: placing Alder

Foreign 300m = equities 180m + bonds 120m; long horizon

Bonds: passive, 100%	100% × 120m	**120m**
Equities: discretionary, 50%	50% × 180m	**90m**
Total hedged	120m + 90m	**210m**
Overall hedge ratio	210m ÷ 300m	**70%**

IN THE LESSON

- Now place Alder.
- Elena Voss reviews the fund.
- Its liabilities run for decades, so the horizon is long.
- The board is split on whether currency skill exists.
- The bonds are quiet, so currency would dominate their risk, as we saw.
- The shares are noisy, and currency partly diversifies them.
- Her recommendation has two parts.
- For the bonds, a passive hedge at one hundred per cent, one hundred and twenty million sold forward and rebalanced to target.
- For the shares, a discretionary programme with a benchmark of fifty per cent, which is ninety million.
- Altogether the hedge is one hundred and twenty plus ninety, two hundred and ten million, which is seventy per cent of the three hundred million foreign portfolio.
- She ties each choice to a fact about the client.

13 Example 4: a full hedge is not free

Hedge 120m of dollar bonds; local +1%; dollar rises 4%

Bonds in euros, unhedged	120m × 5.04%	**+6.05m**
Hedge settles at maturity	4% × 120m	**−4.80m**
Net gain, hedged	6.05m − 4.80m	**+1.25m**
Hedged return	1.25m ÷ 120m	**1.04%**
Cash to find at settlement		**4.80m**

Forward points ignored to keep it simple

IN THE LESSON

- A full hedge sounds like a free lunch.
- It is not, and the exam likes to test this.
- Take Alder's bonds.
- The hedge sells one hundred and twenty million of dollars forward.
- Suppose the bonds earn one per cent locally and the dollar rises four per cent.
- Unhedged, the bonds gain five point zero four per cent, six point zero five million euros.
- But the hedge sold dollars at the old rate, so when it settles it loses four point eight million.
- The net gain is one point two five million, a hedged return of one point zero four per cent.
- Most of the currency gain was given up.
- And the four point eight million loss is paid in cash within days, while the matching gain sits in the bonds on paper.
- Alder needs liquid assets to fund that settlement.
- We have ignored forward points to keep the arithmetic clean.

14 Mistakes to avoid so far

- Adding returns instead of compounding them
- Reading the quote the wrong way round
- Dropping correlation: it can reduce risk too
- Treating a full hedge as free and riskless
- Choosing the hedge from a forecast, not the client

IN THE LESSON

- Let us collect the common mistakes so far.
- One: adding the local and currency returns instead of compounding them.
- Two: reading the quote the wrong way round, so a rising quote is taken as a stronger foreign currency.
- Three: dropping the correlation from the risk formula.
- Correlation can reduce risk, so currency does not always add to it.
- Four: treating a full hedge as free and riskless.
- It gives up currency gains, it costs trading, and it creates cash settlements that must be funded.
- Five: choosing the hedging policy from a forecast of the currency, instead of from the client's horizon, asset mix and attitude to regret.

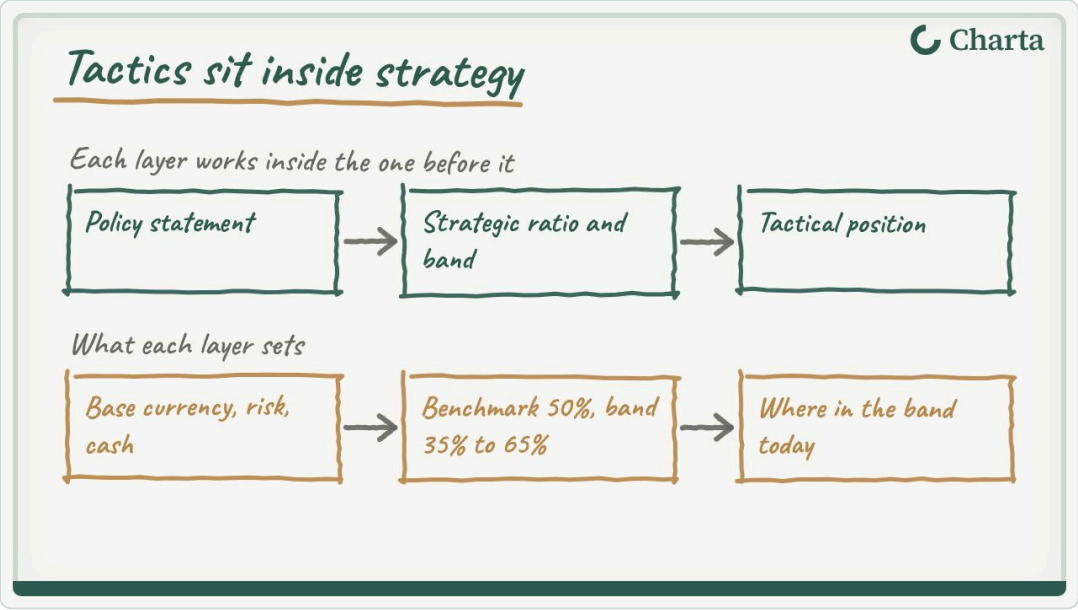
15 A story: planning a voyage

- The policy statement is the destination
- The strategic ratio and band are the shipping lane
- Tactics are small steering moves inside the lane
- Never leave the lane because the weather looks good

IN THE LESSON

- Think of planning a voyage.
- First you choose the destination.
- Then you mark out a shipping lane that gets you there safely.
- Only then does the captain steer, making small moves inside the lane as the weather changes.
- Designing a currency programme works the same way, from the top down.
- The investment policy statement is the destination.
- It sets the base currency, the return target, the risk tolerance, the cash available for settling hedges, and the instruments allowed.
- From it you set a strategic hedge ratio and a band.
- Market conditions come last, and they only decide where inside the band the hedge sits today.
- A captain who leaves the lane because the sky looks promising has broken the mandate.

16 Tactics sit inside strategy



IN THE LESSON

- Here is that structure as a picture, read left to right.
- The first box is the policy statement.
- It sets the base currency, the risk, and the cash.
- The second is the strategic layer.
- For Alder's shares, this is a hedge ratio of fifty per cent as the benchmark, with a band from thirty five to sixty five per cent.
- The band is the room the manager has.
- The third box is the tactical layer, which is today's position inside the band, chosen from market conditions.
- Each box works inside the limits of the one before.
- A tactical idea can move the hedge anywhere within the band.
- It can never move the band, and only the committee, not the manager, can change the policy.

17 Example 5: from policy to numbers

Policy: pay pensions in euros, moderate risk, forwards only

Foreign equities to hedge		**180m**
Strategic hedge ratio	50% × 180m	**90m**
Band	35% to 65%	**63m to 117m**
Cash for a 10% dollar rise	10% × 90m	**9m**
Instruments allowed	forwards, rated banks	**Forwards**

IN THE LESSON

- Let us design Alder's programme for the shares, step by step.
- The policy statement says Alder must pay pensions in euros, tolerates moderate risk, and allows only forwards with highly rated banks.
- The foreign shares are worth one hundred and eighty million.
- The risk tolerance and the board's mixed view on currency skill justify a strategic hedge ratio of fifty per cent, which is ninety million.
- The committee allows a band of thirty five to sixty five per cent, so the hedge may range from sixty three to one hundred and seventeen million.
- Liquidity is a constraint, so Voss asks what a bad quarter costs.
- If the dollar rose ten per cent, the forwards on ninety million would lose nine million, and that cash must be on hand.
- Every line ties back to the policy.

18 The cost or reward of hedging

F = S × (1 + ih) ÷ (1 + if)
Roll yield ≈ (F − S) ÷ S

Spot rate	Euros per dollar today
Forward rate	Price agreed today for later
Home rate	Euro interest rate
Foreign rate	Dollar interest rate
Roll yield	Earned by selling at a premium

IN THE LESSON

- Before tactics, we need one more formula, for the cost of hedging.
- Under covered interest parity, the forward rate equals the spot rate times one plus the home interest rate, over one plus the foreign interest rate.
- For Alder, the spot rate is the number of euros per dollar.
- If euro rates are higher than dollar rates, the forward rate is above spot, and the dollar trades at a forward premium.
- A hedger selling dollars forward then sells at a better price than spot.
- That gain is called the roll yield, the forward minus spot, divided by spot, and it is earned if the spot rate stays put.
- If the dollar traded at a forward discount, the sign flips, and hedging costs money each time the contract is rolled.

19 Example 6: a tactical view

Spot 0.9000 euros per dollar; euro rate 3%, dollar rate 2%

View: dollar weakens	65% × 180m	**117m**
Move from benchmark	117m − 90m	**27m**
Forward premium	1.03 ÷ 1.02 − 1	**0.98%**
Roll yield a year	0.98% × 117m	**1.15m**
A 90% hedge	162m, outside the band	**Committee**

IN THE LESSON

- Now a tactical view.
- Voss expects the dollar to weaken against the euro.
- That says hedge more, so she moves to the top of the band, sixty five per cent of one hundred and eighty million, which is one hundred and seventeen million.
- That is twenty seven million more than the benchmark.
- Market conditions help.
- Spot is zero point nine zero zero zero euros per dollar, the euro interest rate is three per cent and the dollar rate is two per cent.
- The forward premium is one point zero three over one point zero two, minus one, which is point nine eight per cent.
- On one hundred and seventeen million, the roll yield is about one point one five million euros a year.
- A ninety per cent hedge, one hundred and sixty two million, would be outside the band.
- Even if her view feels strong, that is a decision for the committee, not for her.

20 Market conditions steer tactics

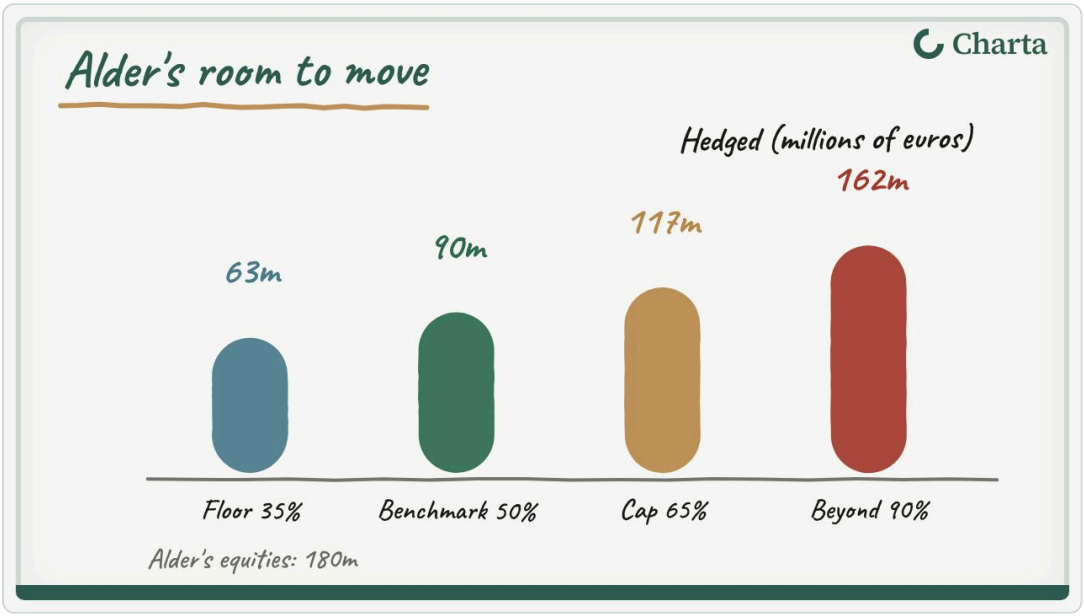
Tactics within the band, not beyond it

Market condition	Tactic
Foreign currency to weaken	Hedge more
Foreign currency to strengthen	Hedge less
Forward premium	Cheaper
High option volatility	Use forwards

IN THE LESSON

- Market conditions then steer the tactics inside the band.
- If the manager expects the foreign currency to weaken, hedge more, up to the top of the band.
- If it is expected to strengthen, hedge less, down toward the bottom.
- Forward points matter.
- When the foreign currency trades at a forward premium, selling it forward earns roll yield, so hedging is cheaper.
- At a forward discount, it is the reverse.
- Volatility matters for the choice of instrument.
- When implied volatility is high, options are expensive, so plain forwards become more attractive than buying protection.
- A strong justification always ties the choice to an objective or a constraint.
- The trap is a tactical view that overrides the limits of the mandate.

21 Alder's room to move



IN THE LESSON

- Here are Alder's choices as bars, in millions of euros hedged on the shares.
- The vertical axis is the amount sold forward.
- The first bar is the floor of the band, thirty five per cent, sixty three million.
- The second is the benchmark, fifty per cent, ninety million.
- The third is the cap, sixty five per cent, one hundred and seventeen million.
- That is where the view takes the hedge.
- The red bar is a ninety per cent hedge, one hundred and sixty two million, and it sits beyond the cap.
- The manager may choose anywhere across the first three bars.
- The fourth needs the committee.
- When you propose and defend a programme in the exam, name the benchmark, the band and the reason for each, and say what the tactical view adds.

22 A story: four fishing crews

- Fundamentals: where should the currency be?
- Technical: where is the crowd heading?
- Carry: collect the interest rate gap
- Volatility: back a view on option prices

IN THE LESSON

- Picture four crews of fishermen, each using a different clue to find fish.
- One crew studies the sea's depth and temperature, and goes where the water ought to be rich.
- Another watches where the other boats are heading and follows the trend.
- The third simply collects a steady catch from a calm bay, and the fourth sells insurance to boats against storms.
- In currency markets these are the four active approaches.
- Fundamental and technical managers bet on direction.
- The carry trader and the volatility trader earn a premium.
- And those last two have a hidden problem, because the calm bay and the insurance both go wrong in the same storm.

23 Four approaches at a glance

What each school trades on

Approach	Trades on
Fundamentals	Fair value
Technical	Price trends
Carry	Yield gap
Volatility	Vol forecast

IN THE LESSON

- Let us compare the four.
- A fundamental manager estimates a long run fair value, from purchasing power parity, real interest rate gaps, current account balances and risk premia.
- She buys currencies that look cheap and waits, often for years, for the price to converge.
- A technical manager ignores all that and reads the price history: trends, moving averages, and whether a move looks overbought or oversold, on the idea that crowd behaviour repeats.
- A carry manager borrows low yield currencies and invests in high yield ones.
- A volatility manager uses options, often delta hedged, which means balanced so that small moves in direction do not matter, to back a forecast of volatility against what the market implies.

24 Example 7: a fundamental view

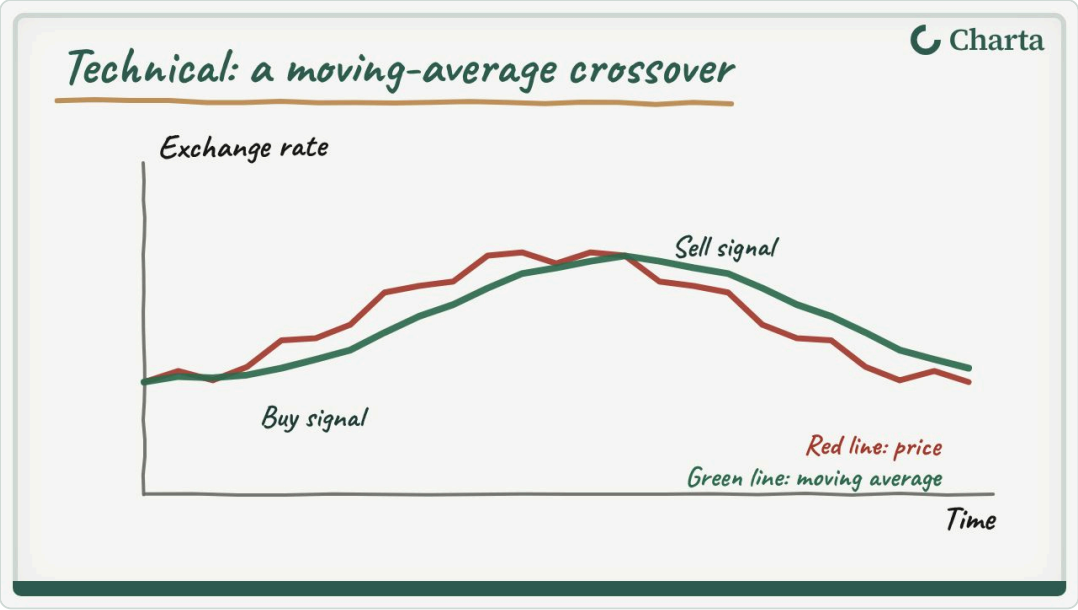
Same basket: 99 euros in the euro area, 100 dollars in the US

Fair value by purchasing power	99 ÷ 100	**0.9900**
Spot rate today		**0.9000**
Dollar undervalued by	1 − 0.9000 ÷ 0.9900	**9.1%**
Rise needed to reach fair value	0.9900 ÷ 0.9000 − 1	**10.0%**
If it takes five years	1.10^0.2 − 1	**1.9% a year**

IN THE LESSON

- Start with fundamentals.
- Purchasing power parity says the same basket of goods should cost the same everywhere once converted.
- Suppose a basket costs ninety nine euros in the euro area and one hundred dollars in the United States.
- Parity then says one dollar is worth point nine nine zero zero euros.
- But the spot rate is point nine zero zero zero.
- The dollar is undervalued by nine point one per cent, and it needs to rise ten per cent to reach fair value.
- A fundamental manager buys dollars.
- But convergence is slow.
- If it took five years, the gain is only about one point nine per cent a year, and the dollar might drift further from fair value first.
- Patience and a long horizon are the price of this approach.

25 Technical: a moving-average crossover



IN THE LESSON

- Technical managers read the price itself.
- The horizontal axis is time, and the vertical axis is the exchange rate.
- The red jagged line is the price.
- The smoother green line is a moving average, the average price over the last few periods.
- It lags the price, because it carries the past.
- The classic signal is a crossover.
- When the price crosses above its moving average, the manager reads the start of an uptrend and buys.
- When it crosses below, the manager sells.
- This works in trending markets and over short horizons, when moves persist.
- In choppy markets the price keeps crossing the average back and forth, and the manager pays costs on false signals.
- The picture is an invented illustration.

26 Example 8: a carry trade

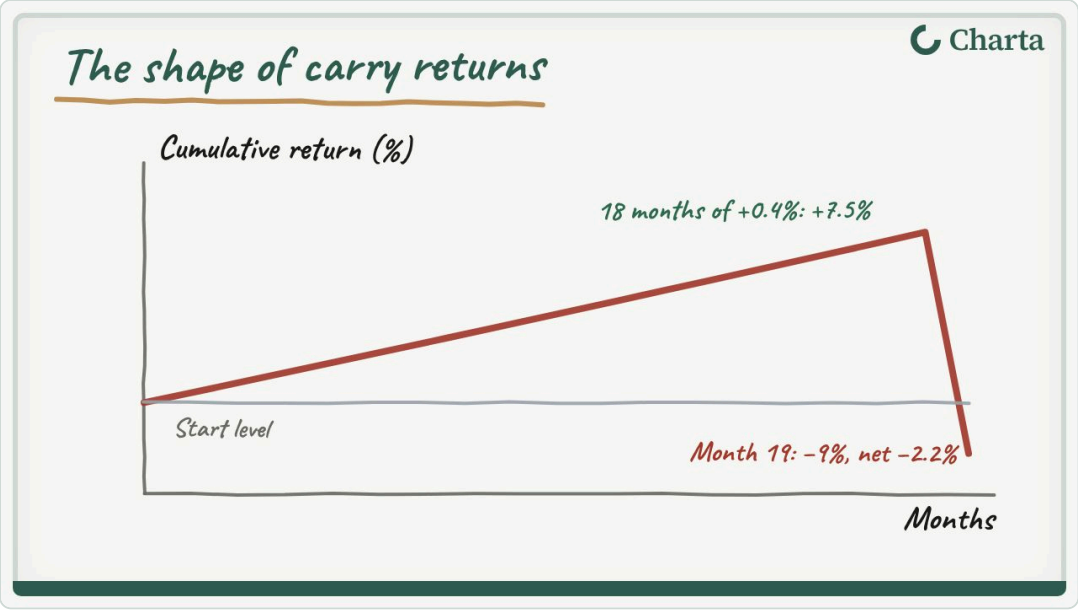
Borrow 10m at 1%, invest 10m at 6%, hold one year

Yield gap	6% − 1%	**5%**
Currency unchanged	10m × 1.06 − 10.1m	**+0.50m**
Currency falls 8%	10m × 1.06 × 0.92 − 10.1m	**−0.35m**
Break-even fall	1 − 1.01 ÷ 1.06	**4.7%**

IN THE LESSON

- The carry trade is the first of the premium earners.
- A manager borrows ten million in a funding currency at one per cent, and invests in a high yield currency at six per cent for a year.
- The yield gap is five per cent.
- If the currency is unchanged, she repays ten point one million and holds ten times one point zero six, so she earns half a million.
- Now suppose the high yield currency falls eight per cent against the funding currency.
- Ten million times one point zero six times point nine two is nine point seven five two, less ten point one, a loss of about point three five million.
- Uncovered interest parity says the high yield currency should fall about four point seven per cent, enough to wipe out the gain.
- Carry bets that it will not, at least not soon, and that bet often pays.

27 The shape of carry returns



IN THE LESSON

- Here is the danger in a picture.
- The horizontal axis is months, and the vertical axis is the cumulative return of a carry strategy.
- This is an invented illustration.
- For eighteen months the line climbs smoothly, earning four tenths of a per cent each month.
- That is the steady income, and it adds up to about seven and a half per cent.
- Then, in month nineteen, risk appetite collapses.
- Investors rush back to safe haven funding currencies, the high yield currency falls, and the line drops nine per cent in one month.
- The whole run of gains is gone and then some.
- This is negative skew: many small wins and one huge loss.
- Selling options has the same shape, so a fund running carry and short volatility is doubling up on a single bet, not diversifying.

28 Example 9: trading volatility

Vega 100,000 euros per vol point; implied 10%, forecast 7%

Volatility gap	10% − 7%	**3 points**
Gain if forecast is right	3 × 100,000	**300,000**
If volatility hits 14%	(10 − 14) × 100,000	**−400,000**
Verdict	paid in calm, hurt in storms	**Size it small**

IN THE LESSON

- Volatility trading is the second premium earner.
- Options are priced from implied volatility, the market's expected size of future swings.
- The manager compares it with her own forecast of realised volatility, the swings that actually happen.
- If implied is higher than her forecast, options look expensive, so she sells them.
- If implied is lower, she buys.
- She usually delta hedges, so direction drops out and only volatility is left.
- Suppose her position earns about a hundred thousand euros per volatility point, called vega.
- Implied is ten per cent and her forecast is seven.
- The gap is three points, so if she is right she earns about three hundred thousand.
- But if volatility hits fourteen per cent, she loses four points, roughly four hundred thousand, and the loss can run larger.
- Like carry, it pays in calm and hurts in storms.

29 Matching the approach to the market

Four approaches, four kinds of weather

Market	Suits
Market that trends	Technical
Currency far from fair value	Fundamental
Calm, stable market	Carry
Calm, options look rich	Sell volatility

IN THE LESSON

- Which approach suits which market?
- Technical trading suits markets that trend, because moves persist long enough to follow.
- Fundamental investing suits a currency far from fair value, held by a patient investor who can wait for slow convergence.
- Carry suits a calm, stable market, where the yield gap is collected quietly.
- Selling volatility suits a calm market in which options look rich against the forecast.
- Notice that the last two like the same weather.
- In a crisis, volatility rises, the yield gap no longer pays for the risk, and both positions lose together.
- That shared crash risk is the key contrast to remember.
- A manager who runs both has far less diversification than the labels suggest.

30 Recap: the lesson in five lines

- Returns compound; risk depends on correlation
- Policy runs from passive to active: fit the client
- Design: policy, then ratio and band, then tactics
- Fundamentals and technicals bet on direction
- Carry and short volatility share a crash risk

IN THE LESSON

- Let us pull the lesson together.
- First, a foreign asset earns two returns that compound, and the risk of the combination depends on the correlation: currency dominates bonds and can slightly reduce the risk of shares.
- Second, the strategic choice runs from passive through discretionary to active, with an overlay manager as one way to run it, and it should follow the client's horizon, asset mix and regret.
- Third, design runs top down, from the policy statement to a hedge ratio and band to a tactical position, and a forward premium makes hedging cheaper.
- Fourth, fundamentals and technicals bet on direction.
- Fifth, carry and short volatility earn steady income and share a crash risk.

31 Try three quick questions

1. Local +6%, currency −3%. Return in base currency?
   Answer: 1.06 × 0.97 − 1 = 2.82%.
2. Shares 200m; ratio 40%, band 30% to 50%; currency to strengthen. Hedge?
   Answer: Hedge less: floor of the band, 30% × 200m = 60m.
3. Borrow at 1%, invest at 4%. Break-even fall in the currency?
   Answer: 1 − 1.01 ÷ 1.04 = 2.9%.

IN THE LESSON

- Now try three quick questions yourself.
- Question one.
- A foreign share earns six per cent in its own market, while the foreign currency falls three per cent against the base currency.
- What is the return in the base currency?
- One point zero six times point nine seven, minus one, is two point eight two per cent.
- Question two.
- Alder holds two hundred million of foreign shares, with a strategic hedge ratio of forty per cent and a band of thirty to fifty per cent.
- The manager expects the foreign currency to strengthen.
- How much should be hedged?
- Expecting strength means hedge less, down to the floor of the band.
- Thirty per cent of two hundred million is sixty million.
- Question three.
- A manager borrows at one per cent and invests at four per cent for a year.
- How far can the high yield currency fall before the trade loses money?
- One minus one point zero one over one point zero four is about two point nine per cent.
- Past that point, the trade loses money.