CHARTA LEARNING · LESSON NOTES

Revising, tilting and sticking to the plan

Asset Allocation

1 A story: the shoes that no longer fit

- An allocation is fitted to one investor's facts
- Facts change: the plan must be revisited
- Weather changes: that is not a reason
- Nadia Brandt: retired surgeon, portfolio $2m

IN THE LESSON

- Think of a pair of walking shoes, fitted carefully to your foot.
- If your foot changes, the shoes need changing.
- If it simply starts to rain, you do not rush out and buy new shoes.
- An asset allocation works the same way.
- It was built for one investor in one set of circumstances.
- Meet Nadia Brandt, a surgeon who has just retired, with a portfolio of two million dollars.
- Her adviser is Owen Pryce at Calder Wealth.
- Her salary has stopped, and a pension now pays her part of what she spends.
- The question is simple.
- Which parts of her plan were built around the salary, and so must change?

2 What triggers a revision?

- Triggers: goals, constraints, market beliefs
- Inheritance, retirement, a new goal
- Plan closes or freezes; spending rule changes
- A market move alone is not a trigger

IN THE LESSON

- So what counts as a real reason to revise?
- There are three kinds.
- A change in the investor's goals, a change in the investor's constraints, or a change in beliefs about the capital markets.
- Think of a large inheritance, retirement, or a new goal such as paying for a grandchild's education.
- For institutions, think of a pension plan that closes to new members or freezes benefits, or a foundation that changes its spending rule.
- Notice what is missing from the list.
- A rise or fall in the market is not a trigger.
- The market moved, not the investor.
- We come back to that trap at the end of this part.

3 The checklist: what changed?

Nadia's checklist after retiring

Checklist item	Nadia now
Required return	4.5%
Risk capacity	Lower
Horizon	Still long
Liquidity	Cash needed

IN THE LESSON

- When something changes, work down a checklist.
- Required return: what must the portfolio earn?
- Risk capacity: how much loss can the investor absorb without real harm?
- Horizon: how long until the money is needed?
- Liquidity: what cash is needed, and when?
- For institutions, add tax and liabilities.
- Here is Nadia's checklist.
- Her required return is four and a half per cent, and we work that out in a moment.
- Her risk capacity is lower, because her salary, which behaved like a large steady bond outside the portfolio, has gone.
- Her horizon is still long.
- And liquidity is new, because she must now draw money out every year.

4 Example 1: what must the portfolio earn?

Portfolio $2m. Spends $110,000; pension pays $60,000

Draw from portfolio	110,000 − 60,000	**$50,000**
Spending rate	50,000 ÷ 2,000,000	**2.5%**
Expected inflation	prices rise each year	**2.0%**
Required return	2.5% + 2.0%	**4.5%**

IN THE LESSON

- Example one.
- Nadia spends one hundred and ten thousand dollars a year.
- Her pension pays sixty thousand, so the portfolio must supply the difference, fifty thousand dollars.
- On a portfolio of two million dollars, that is a spending rate of two and a half per cent.
- But spending is not the whole story.
- Prices are expected to rise by two per cent a year, and her spending must rise with them, or her lifestyle shrinks.
- So she needs two and a half plus two, which is four and a half per cent a year, just to stand still in real terms.
- That is her required return, and the target for everything that follows.

5 The required return

Required return ≈ Draw ÷ Portfolio + Inflation

Yearly draw	Spending less other income
Portfolio value	What the investor holds today
Expected inflation	Keeps buying power
Required return	Return needed each year

IN THE LESSON

- Here is that arithmetic as one line.
- The required return is roughly the yearly draw divided by the portfolio, plus expected inflation.
- The draw is what she spends, less any other income.
- Divide by the portfolio value and you have the spending rate.
- Add inflation so that the payments keep their buying power.
- It is an approximation, because it ignores fees and the effect of compounding, but it is the right size for a first check.
- Always compare it with what the portfolio is expected to earn.
- If the expected return is below the required return, the plan fails slowly.
- If it is above, there is room to take less risk.

6 Example 2: old mix against new mix

Expected returns: equities 7%, bonds 4%, cash 3%

Old mix 70/25/5	0.7×7 + 0.25×4 + 0.05×3	**6.05%**
New mix 50/40/10	0.5×7 + 0.4×4 + 0.1×3	**5.4%**
Required return	from example 1	**4.5%**
Cushion	5.4 − 4.5	**0.9%**

IN THE LESSON

- Example two.
- Before retiring, Nadia held seventy per cent equities, twenty five per cent bonds and five per cent cash.
- Calder Wealth expects seven per cent from equities, four from bonds and three from cash.
- Weight each return by its share.
- The old mix earns point seven times seven, plus point two five times four, plus point oh five times three, which is six point oh five per cent.
- The mix Owen proposes is fifty, forty and ten.
- That earns five point four per cent.
- It is lower, but compare it with the four and a half per cent she needs.
- The new mix still clears the hurdle by nine tenths of a point, with far less equity risk.

7 Before and after, in pairs

Weight in portfolio (%)

Equity was	**70**
Equity now	**50**
Bonds was	**25**
Bonds now	**40**
Cash was	**5**
Cash now	**10**

Grey is while working, green is retired

IN THE LESSON

- Here are the two mixes as bars, read in pairs.
- Equity falls from seventy per cent to fifty.
- The reason is that her salary was like a large bond held outside the portfolio, steady and dependable, and it has gone, so her capacity to absorb equity losses has fallen with it.
- Bonds rise from twenty five to forty, to take the place of that steady income.
- Cash doubles from five to ten per cent, because she now withdraws every year, and a cash reserve means she is never forced to sell shares in a falling market.
- Notice that each change has a reason in Nadia herself.
- None of them comes from a view about markets.

8 Example 3: a bad year, old mix and new

Equities fall 30%; other assets unchanged; portfolio $2m

Old mix loss	0.7 × 30% × $2m	**−$420,000**
New mix loss	0.5 × 30% × $2m	**−$300,000**
Cash reserve	10% × $2m	**$200,000**
Years of draw covered	200,000 ÷ 50,000	**4 years**

IN THE LESSON

- Example three tests the new mix against a bad year.
- Suppose equities fall thirty per cent and everything else stays put.
- Under the old mix, seventy per cent of two million dollars sits in equities, so the loss is point seven times thirty per cent times two million: four hundred and twenty thousand dollars.
- Under the new mix the loss is three hundred thousand dollars.
- That is a much smaller hit in a year when she is also drawing income.
- And the cash reserve of two hundred thousand dollars covers four years of her fifty thousand dollar draw, so she can wait for a recovery rather than sell at the bottom.

9 Example 4: a windfall

Side case: an inheritance of $500,000 arrives

New portfolio	$2.0m + $0.5m	**$2.5m**
Spending rate	50,000 ÷ 2.5m	**2.0%**
Required return	2.0% + 2.0%	**4.0%**
Spare return	5.4% − 4.0%	**1.4%**

IN THE LESSON

- Now a side case, to show that not every change means less risk.
- Imagine that Nadia's aunt leaves her five hundred thousand dollars, so the portfolio becomes two and a half million.
- Her draw is still fifty thousand, which is now a spending rate of two per cent, so her required return falls to four per cent.
- The new mix earns five point four, leaving a spare one point four.
- So her capacity for risk has risen.
- But capacity is not willingness.
- If Nadia says she hates losses, the windfall does not make her more willing to take them.
- Owen keeps the mix, and uses the spare return as a buffer, or to fund a new goal, rather than adding equities.

10 A pension plan freezes its benefits

From a changed fact to a changed weight

Benefits frozen → Liability shorter → Cash flows more certain → Bigger hedging portfolio

IN THE LESSON

- Institutions go through the same checklist and sometimes reach a different answer.
- Take a pension plan that freezes benefits.
- Follow the boxes from left to right.
- Members stop earning new benefits, so the liabilities now consist only of benefits already earned.
- They become shorter, and their cash flows are more certain to arrive.
- A shorter, more certain liability is easier to match with bonds, and the sponsor has less reason to gamble on growth.
- So the case grows for a larger hedging portfolio, the part of the assets that matches the liabilities, and a smaller return seeking portfolio.
- Different investor, different fact, different weight, but the same method.

11 If this changes, revisit this

From the changed fact to the item to revisit

If this changes	Revisit
Retirement	Capacity, cash
Inheritance	Capacity, goals
Plan freeze	Hedging share
Higher spending	Required return

IN THE LESSON

- Here is a quick map from the change to the item you revisit.
- Retirement hits risk capacity and the need for cash.
- An inheritance lifts capacity and may create new goals, but willingness must be asked about separately.
- A plan freeze changes the liability, so the hedging share is revisited.
- A higher spending rule at a foundation raises the required return, so either growth assets rise or the spending itself is reconsidered.
- Notice the pattern.
- You start from the changed fact, then you move to the weight.
- You never start from a chart of the market.

12 The trap: revising for the market

- Test: name the changed fact behind each weight
- Salary gone: less equity, more bonds
- Drawing money: more cash
- A market move alone is not a changed fact

IN THE LESSON

- Here is the trap, and the exam sets it often.
- Equities have soared, and the client says the plan is too cautious.
- Or markets have fallen, and she wants out.
- Neither is a change in her circumstances.
- Her required return, capacity, horizon and liquidity are exactly what they were.
- A good defence ties each revised weight to a specific changed fact.
- Salary gone, so less equity and more bonds.
- Drawing begins, so more cash.
- If you cannot name the fact, you have no defence.
- A change in your market forecast may justify a short term tilt, which is our next topic, but not a rewrite of the policy.

13 A story: the sailor and the course

- Strategic: the harbour, set for the long run
- Tactical: trimming the sails for a few months
- Deliberate, temporary, and within limits
- Nadia's policy: 50% equities

IN THE LESSON

- A sailor sets a course for a distant harbour.
- That course is the strategic allocation, chosen for the whole journey.
- Along the way the wind shifts, and a good sailor trims the sails, leaning one way for a few hours, without changing the harbour.
- Tactical asset allocation is that trimming.
- It is a deliberate, temporary departure from the policy weights, to exploit a view about the next few months, such as shares looking cheap against bonds.
- Back at Calder Wealth, Owen and Nadia have agreed that her policy is fifty per cent equities.
- Owen would like permission to lean a little.
- That permission needs limits, and the limits come first.

14 Strategic, tactical, rebalancing

Four ideas that are easy to confuse

Idea	What it is
Strategic	Long-run policy
Tactical	Short-run tilt
Rebalancing	Back to policy
Policy review	Lasting new view

IN THE LESSON

- Four ideas get muddled, so separate them.
- The strategic allocation is the long run policy, built from the investor's objectives and constraints, and it changes only when they change.
- A tactical position is a short run tilt based on a view of expected returns, and it has a limit and an end.
- Rebalancing is not a view at all.
- It simply brings drifting weights back to policy.
- And if a view turns out to be a lasting change of belief, it belongs in a policy review, with the client, not in a tilt.
- Keep the four labelled in your head: policy, tilt, rebalance, review.

15 Where do tilts come from?

- Discretionary: judgement on value, cycle, mood
- Systematic: rules and signals
- Signals: valuation, momentum, carry
- Either way: small, brief, inside the limits

IN THE LESSON

- Where do the tilts come from?
- There are two broad ways.
- A discretionary approach relies on the manager's judgement, about valuations, the business cycle and market sentiment.
- It can use anything it likes, and it is only as good as the person.
- A systematic approach follows rules.
- Common signals are valuation, which asks how cheap an asset is against its own history, momentum, which follows the recent trend, and carry, which is the income earned for holding the asset.
- Rules are consistent and testable, though they can fail when conditions change.
- Either way, the tilt must be small and brief enough that it does not alter the investor's risk profile.

16 The range in the policy statement

- Floor 45%
- Policy 50%
- Tilt 53%
- Cap 55%

IN THE LESSON

- Tilts live inside a range written into the investment policy statement, or I P S for short.
- Look at the line, which shows the share of the portfolio in equities.
- Nadia's policy is fifty per cent.
- The range runs from forty five, the floor, to fifty five, the cap.
- Owen's signal says shares look cheap, so he leans above policy, to fifty three.
- That is inside the cap, so it is allowed.
- A signal asking for more would simply be stopped at the cap.
- The range does two jobs.
- It limits the tracking risk against the strategic portfolio, and it stops a tilt from quietly becoming a new policy.

17 Example 5: putting on the tilt

Policy 50% equities; portfolio $2m; signal +3 points

Policy equities	50% × $2m	**$1,000,000**
Size of tilt	3% × $2m	**$60,000**
Equity exposure	1,000,000 + 60,000	**$1,060,000**
Weight now	1,060,000 ÷ 2m	**53%**
Inside 45% to 55%?		**Yes**

IN THE LESSON

- Example five shows how a tilt is carried out.
- Nadia's portfolio is two million dollars, with a policy of fifty per cent equities, which is one million dollars.
- The signal says three points over.
- Three per cent of two million is sixty thousand dollars.
- Rather than selling bonds and asking the equity managers to buy, Owen buys sixty thousand dollars worth of equity index futures, and cuts bond exposure by the same amount with bond futures.
- Futures are cheap to trade, quick to reverse, and leave the underlying managers untouched.
- Equity exposure is now fifty three per cent, inside the range.
- When the view fades, he closes the futures and the portfolio is back at policy.

18 Judging a tilt: two ratios

Sharpe = (Net − Rf) ÷ Volatility
Info ratio = Active ÷ Tracking error

Net return	After trading costs
Risk-free rate	Return with no risk
Volatility	Risk of the portfolio
Active return	Net return less strategic
Tracking error	Volatility of that gap

IN THE LESSON

- How do we know the tilts help?
- By return per unit of risk, after costs.
- The Sharpe ratio is the portfolio's return, less the risk free rate, divided by its volatility.
- You know it from earlier levels.
- Compare the Sharpe ratio of the portfolio with tilts against that of the strategic portfolio alone, using returns net of trading costs.
- The information ratio looks at the tilts directly.
- It is the active return, the net return above the strategic portfolio, divided by tracking error, the volatility of that gap.
- Tilts add tracking risk, so a good information ratio says the extra risk was paid for.

19 Example 6: did the tilts pay?

Strategic 5.4%, volatility 8.5%. Risk-free rate 2%

Strategic Sharpe	(5.4 − 2) ÷ 8.5	**0.40**
Net return with tilts	5.9% gross − 0.2% costs	**5.7%**
Sharpe with tilts	(5.7 − 2) ÷ 9.0	**0.41**
Active return	5.7% − 5.4%	**0.3%**
Information ratio	0.3 ÷ 1.5 tracking error	**0.20**

IN THE LESSON

- Example six.
- The strategic portfolio expects five point four per cent, with eight and a half per cent volatility, and the risk free rate is two.
- Its Sharpe ratio is three point four divided by eight and a half, which is zero point four.
- Now the year with tilts.
- Gross return is five point nine, but costs take point two, leaving five point seven net.
- Volatility rises to nine per cent.
- The Sharpe ratio is three point seven divided by nine, about zero point four one.
- The active return is point three, with tracking error of one and a half, so the information ratio is zero point two.
- A small improvement, delivered net of costs.

20 A good year and a poor year

Sharpe ratio

Strategic	**0.40**
Tilts, good year	**0.41**
Tilts, poor year	**0.39**

Poor year: 5.7% gross, 5.5% net, volatility 9.0%

IN THE LESSON

- One good year proves little, so compare it with a poor one.
- The first bar is the strategic Sharpe ratio, zero point four.
- The second is the programme in the year we just worked, zero point four one.
- The third is a poorer year, where the gross return was only five point seven per cent, costs were again point two, and volatility was nine per cent.
- The net return is smaller, and the Sharpe ratio falls to zero point three nine, below the strategic portfolio.
- The costs and the extra volatility were real, and the gain was not enough to pay for them.
- So judge the programme over many periods, net of costs, never by its best calls.

21 The traps: wrong label, no end date

- A lasting new belief belongs in a policy review
- A tilt kept for years is an unapproved policy change
- Record the view, size, range and exit
- Judge by Sharpe and information ratio, net of costs

IN THE LESSON

- Two traps and two habits close this part.
- First, mixing up a tactical call with a revised strategic view.
- If Owen believes that shares will beat bonds for a decade, that is a change in long run expectations.
- It belongs in the policy review, with the client, not hidden inside a tilt.
- Second, letting tilts persist.
- A position meant to last a few months, and still there years later, has turned into an unapproved change of policy, carrying tracking risk and cost that nobody agreed to.
- Good practice is to write down the view, the size, the range and an exit rule, then review the result against the two ratios.

22 Mistakes to avoid so far

- Revising for the market, not the client
- Capacity is not the same as willingness
- Leaving inflation out of the required return
- A tilt that is called policy, or never ends
- Judging tilts gross of costs and risk

IN THE LESSON

- Let us stop and collect the common mistakes.
- One: revising the policy because the market moved, instead of because the client changed.
- Two: assuming a windfall makes the client willing to take more risk.
- It raises capacity, but willingness must be asked about.
- Three: forgetting inflation when working out the required return, so the plan quietly shrinks the client's lifestyle.
- Four: treating a tilt as a revised strategic view, or letting it run on with no end.
- Five: judging tilts by their gross returns, rather than by Sharpe and information ratios after costs.
- A slow check of each step prevents all five.

23 A story: the mind's shortcuts

- Biases: habits of thinking that pull us off plan
- Nadia, a year on: equities up 30%
- She asks to buy far more shares
- The best counters are structural, not lectures

IN THE LESSON

- Driving home, you do not think about every turn.
- Your mind uses shortcuts, and most of the time they work.
- With money, the same shortcuts often mislead.
- Behavioural biases are habits of thinking that pull investors away from their own plan.
- They are not stupidity.
- They are human.
- A year has passed, and Nadia has sat through a strong market.
- Her equities have risen thirty per cent, and she calls Owen, excited, asking to put far more into shares.
- Owen cannot lecture the feeling away.
- The best counters are structural: rules, baselines, and ways of showing the numbers that make the biased choice harder.
- Let us meet six biases and their counters.

24 Loss aversion, control, mental accounts

Bias and its structural counter

Bias	Counter
Loss aversion	Needs first
Illusion of control	Market baseline
Mental accounting	Check the total

IN THE LESSON

- Three biases first.
- Loss aversion means that a loss hurts more than an equal gain pleases.
- Investors then hold too little risk, or refuse to sell a loser to avoid admitting the loss.
- The counter is goals based framing, which secures the essential needs first, so the rest can bear risk.
- Illusion of control is the belief that picking and watching shares gives you control over them, which leads to concentrated bets.
- The counter is the global market portfolio as a baseline, so every departure from it is explicit.
- Mental accounting treats each pot of money separately and ignores how the pots move together.
- Goals based methods can use pots constructively, as long as the total is checked.

25 Recency, framing, availability

Bias and its structural counter

Bias	Counter
Recency	Rebalancing rule
Framing	Several views
Availability	Broad set

IN THE LESSON

- Now the other three.
- Recency bias extrapolates recent returns, so investors buy after a rise and sell after a fall.
- This drives changes that go with the cycle rather than against it.
- The counter is a formal rebalancing policy, agreed in advance.
- Framing bias means that choices depend on how the options are presented.
- The same plan described as a chance of success feels different from the same plan described as a chance of failure.
- The counter is to show outcomes in several forms, such as returns and the probability of a loss.
- Availability bias favours what is familiar or memorable, and produces home bias.
- The counter is a broad, rules based opportunity set.

26 Example 7: the rule against recency

Policy 50/40/10, range 45% to 55%; equities +30%

Equities now	$1.0m × 1.3	**$1,300,000**
Portfolio now	1.3m + 0.8m + 0.2m	**$2,300,000**
Equity weight	1.3m ÷ 2.3m	**56.5%**
Target at 50%	50% × 2.3m	**$1,150,000**
Sell equities	1,300,000 − 1,150,000	**$150,000**

IN THE LESSON

- Example seven.
- Nadia's policy is fifty per cent equities, with the policy statement range of forty five to fifty five.
- Equities have risen thirty per cent.
- Her one million dollars of equities is now one million three hundred thousand.
- The bonds and cash, eight hundred thousand and two hundred thousand dollars, are unchanged, so the portfolio is two million three hundred thousand.
- The equity weight is one point three over two point three, fifty six and a half per cent, above the cap.
- The rule says sell back to fifty per cent, which is one million one hundred and fifty thousand.
- So Owen sells one hundred and fifty thousand dollars of equities, the opposite of what her excitement asks for.
- We ignore withdrawals to keep it simple.

27 Policy, drift and request

Equity weight (%)

Policy	**50**
After rally	**56.5**
She asks for	**70**

Corridor in the policy: 45% to 55%

IN THE LESSON

- Here is the same story as three bars of equity weight.
- The first is the policy, fifty per cent.
- The second is where the rally has taken her, fifty six and a half.
- The third is what she is asking for, seventy per cent, which would take her back to her old working mix.
- This is recency bias at work.
- She extrapolates the last year and wants to buy after the rise.
- A rebalancing policy agreed in advance does the opposite, and automatically.
- It sells some of what has risen and buys what has lagged.
- That is why it is the right counter.
- The decision was made calmly, before the excitement, and the corridor simply holds her to her own earlier choice.

28 Example 8: show the request two ways

Request: 70% equities of $2.3m. Equities then fall 30%

Equities at 70%	0.70 × 2.3m	**$1,610,000**
Loss at 70%	30% × 1,610,000	**−$483,000**
Loss at policy 50%	30% × 1,150,000	**−$345,000**
Extra loss	483,000 − 345,000	**$138,000**

IN THE LESSON

- Example eight shows how to counter the request without a lecture, by framing it more than one way.
- Her request is seventy per cent equities, of two million three hundred thousand dollars, which is one million six hundred and ten thousand.
- A return alone makes that sound exciting, so show it as a risk too.
- In a bad year, when equities fall thirty per cent, that loses four hundred and eighty three thousand dollars.
- At the policy of fifty per cent, the same year costs three hundred and forty five thousand.
- The extra loss is one hundred and thirty eight thousand dollars, a real sum when she is drawing an income.
- Now she can decide with her eyes open.

29 Example 9: spotting home bias

Equities $1.3m; 70% at home; home market, say 25% of world

Home equities	70% × $1.3m	**$910,000**
Home at market weight	25% × $1.3m	**$325,000**
Overweight	910,000 − 325,000	**$585,000**

IN THE LESSON

- Example nine, availability.
- Seventy per cent of Nadia's equities are in her home market, the companies she has heard of and read about all her working life.
- Of her one million three hundred thousand dollars of equities, that is nine hundred and ten thousand at home.
- Suppose, as an example, that her home market is a quarter of world equities.
- A market weight would then be three hundred and twenty five thousand dollars.
- She is overweight by five hundred and eighty five thousand dollars, a bet on one country that she never decided to make.
- Owen shows her the figures, and proposes a broad, rules based global set, so that each region sits at a sensible weight unless there is a stated reason.

30 How to answer: name, show, apply

A defensible answer, in order

Name the bias → Show it in numbers → Apply the remedy → Write it into policy

IN THE LESSON

- In a written answer, follow the four boxes.
- First, name the bias.
- Second, show it in the client's own numbers.
- Third, apply the structural remedy, which might be a rule, a baseline or a goals layer.
- Fourth, write it into the policy, so that it holds the next time the feelings return.
- For Nadia that means recency bias, shown by an equity weight above the cap, countered by the rebalancing rule, and recorded in the policy statement.
- A good answer never says that the client is irrational.
- It says that the process is designed to protect her in the moments when anyone would feel the same way.

31 The traps with biases

- A remedy is structural, never just advice
- Mental accounting is fine if the total is checked
- Recency is lately; availability is familiar
- Tie the bias and the remedy to the case numbers

IN THE LESSON

- Some traps to watch for in the exam.
- Do not offer advice alone as the remedy.
- Telling a client to be less emotional is not a counter.
- A rule, a baseline, a goals layer or a different presentation is.
- Do not call mental accounting always bad.
- Goals based methods use separate pots on purpose, as long as you check the total portfolio.
- Do not confuse recency with availability.
- Recency is about what happened lately, and availability is about what is familiar or easy to recall.
- And always tie the bias to the numbers in the case, so that the answer reads as advice for this client, not a definition from a book.

32 Recap: the lesson in four lines

- Revise for a changed fact, never for the market
- Tilts: temporary, in range, judged net of costs
- Biases: counter with rules and baselines
- Name the fact, show the numbers, defend the weight

IN THE LESSON

- Let us pull the lesson together.
- When circumstances change, work down the checklist: required return, risk capacity, horizon, liquidity, tax and liabilities.
- Tie every revised weight to a changed fact, and never revise for a market move alone.
- Capacity and willingness are separate.
- Tilts are temporary, deliberate departures inside a range, usually made with futures.
- Judge them by Sharpe and information ratios net of costs, and never confuse them with a new strategic view or let them run on.
- And behavioural biases are countered by structure: goals layers, a market baseline, rebalancing rules, several views of the outcome, and a broad opportunity set.

33 Try three quick questions

1. Portfolio $1m, draw $30,000, inflation 2%. Required return?
   Answer: 3.0% + 2.0% = 5.0%.
2. Portfolio $4m, tilt of 2 points by futures. Position size?
   Answer: 2% × $4m = $80,000.
3. Equities rallied; client wants more; rules say sell. Bias and remedy?
   Answer: Recency bias; use the rebalancing rule.

IN THE LESSON

- Now try three quick questions yourself.
- Pause after each one.
- Question one.
- A retired client has a portfolio of one million dollars, draws thirty thousand a year, and expects inflation of two per cent.
- What is the required return?
- Three per cent plus two per cent is five per cent.
- Question two.
- A portfolio of four million dollars is tilted by two points using futures.
- How big is the position?
- Two per cent of four million is eighty thousand dollars.
- Question three.
- Equities have rallied, the client asks for more, and the rules say sell.
- Which bias is at work, and what is the remedy?
- Recency bias, and the rebalancing rule.
- Well done, and keep practising.