CHARTA LEARNING · LESSON NOTES

Risk, Regulation and Organisational Structure

FRM Part II

1 A story: the fund that looked too smooth

- Kestrel Ridge: a $500m hedge fund
- Steady gains, low reported volatility, high Sharpe ratio
- Alder Foundation thinks of investing $20m
- What risks hide behind the smooth record?

IN THE LESSON

- Meet Kestrel Ridge, a made up hedge fund managing five hundred million dollars.
- A hedge fund is a private pooled fund that can borrow, sell short and use derivatives, and that pays its manager a share of the gains.
- Kestrel's record looks beautiful: steady monthly gains, low reported volatility, and a high Sharpe ratio, which is the return above cash per unit of volatility.
- The Alder Foundation is thinking of investing twenty million dollars.
- Its investment committee asks one question.
- What risks hide behind such a smooth record?
- The answer is: many more than the market risk in the fund's positions.

2 The risks a hedge fund investor faces

More than the market risk in the positions

Risk	Where it comes from
Market	Direction, fat tails, crisis correlation
Leverage	Borrowing magnifies gains and losses
Liquidity	Illiquid holdings; redemption limits
Counterparty	Assets held at prime brokers
Operational and other	Fraud, models, key people, style drift

IN THE LESSON

- A hedge fund investor faces more than the market risk in the positions.
- Here is the map.
- Market risk comes from the fund's direction, from fat tails, and from correlations that rise in a crisis.
- Leverage, meaning borrowing to hold more assets than the investors' money alone would buy, magnifies both gains and losses.
- Liquidity risk has two sides: holdings that are hard to sell, and limits on when the investor may take money out.
- Counterparty risk arises because the assets sit with prime brokers, the banks that lend to the fund and hold its securities.
- Operational and other risks cover fraud, faulty models, the loss of key people and style drift.

3 Market risk: tails and crisis correlation

- Directional exposure: the fund's net bet on markets
- Returns often have negative skew and fat tails
- Correlations rise in a crisis: diversification fades
- So volatility alone understates the downside

IN THE LESSON

- Start with market risk.
- Directional exposure is the fund's net bet that markets will rise or fall, and most funds keep some.
- Next, the shape of the returns.
- Many strategies earn small steady gains and suffer occasional large losses, like selling insurance against a crash and collecting the premium every month until the crash comes.
- That gives negative skew, meaning the long tail points to the losses, and fat tails, meaning extreme results happen more often than a normal distribution predicts.
- Third, correlations between assets, and between funds, tend to rise in a crisis, so diversification fades just when it is needed.
- Put together, volatility alone understates the downside.

4 Example 1: leverage magnifies the result

Kestrel: $500m of equity, $2,000m of positions, ignoring borrowing cost

Leverage	2,000 ÷ 500	**4 times**
Positions fall 5%	5% × 2,000	**−$100m**
Loss on equity	100 ÷ 500	**−20%**
Positions rise 5%	5% × 2,000	**+$100m**
Gain on equity	100 ÷ 500	**+20%**

IN THE LESSON

- Kestrel has five hundred million dollars of investors' equity and holds two thousand million dollars of positions.
- The rest is borrowed.
- Leverage, measured as positions divided by equity, is two thousand over five hundred, four times.
- Now suppose the positions fall by five per cent.
- Five per cent of two thousand million is a loss of one hundred million dollars, and all of it falls on the equity.
- The investors lose one hundred over five hundred, twenty per cent.
- If instead the positions rise five per cent, the gain is one hundred million, and the investors make twenty per cent.
- Leverage of four turns a five per cent move into a twenty per cent move, both ways.
- We ignore the cost of borrowing to keep the arithmetic clear.

5 Liquidity risk has two sides

- Holdings: illiquid assets are hard to value and sell
- Lock-up: no redemptions for an initial period
- Notice period: warn the fund before redeeming
- Gate: caps total redemptions in one period
- Side pocket: illiquid assets split off until sold

IN THE LESSON

- Liquidity risk has two sides.
- The first is the fund's holdings.
- Illiquid assets, such as distressed loans, are hard to value, because there is no recent market price, and hard to sell without a big discount.
- The second side is the investor's own restrictions on redemption, meaning taking money out.
- A lock-up bars redemptions for an initial period after the investor comes in.
- A notice period requires the investor to warn the fund some time before a redemption date.
- A gate caps the total that all investors may redeem in one period.
- A side pocket splits illiquid assets off into a separate account, paid out only when they are sold.
- Each protects the fund from a fire sale, at the investor's expense.

6 Example 2: a gate in action

Kestrel NAV $500m. Gate: 10% of NAV a quarter. Alder asks for its $20m

Gate for the quarter	10% × 500	**$50m**
Requests from all investors	including Alder's 20	**$80m**
Share paid on each request	50 ÷ 80	**62.5%**
Alder receives now	62.5% × 20	**$12.5m**
Alder still waiting	20 − 12.5	**$7.5m**

IN THE LESSON

- Kestrel's net asset value, its assets less what it owes, is five hundred million dollars.
- Its gate allows ten per cent of net asset value to leave each quarter.
- Suppose Alder has invested, served its lock-up, given notice, and now asks for its whole twenty million.
- The gate for the quarter is ten per cent of five hundred, fifty million.
- But a bad quarter has frightened others too, and requests from all investors, including Alder's twenty, total eighty million.
- In our fund the gate is applied pro rata.
- So each request is paid fifty over eighty, sixty two point five per cent.
- Alder receives sixty two point five per cent of twenty million, twelve point five million, now.
- The other seven point five million waits for later quarters.
- The investor's liquidity is worst exactly when it wants its money most.

7 Counterparty risk: the prime broker

- Prime broker: lends, holds securities, settles trades
- Broker may rehypothecate pledged assets: reuse them
- If the broker fails, reused assets are not simply returned
- They can become an unsecured claim in the bankruptcy
- Check: several brokers, limits on rehypothecation

IN THE LESSON

- Next, counterparty risk, the risk that the other side of an arrangement fails.
- Kestrel's prime broker is the bank that lends to it, holds its securities and settles its trades.
- To borrow, the fund pledges securities as collateral, and the agreement may let the broker rehypothecate them, which means reuse them for its own purposes, such as pledging them again to raise its own funding.
- If the broker fails, the reused assets are not simply handed back, because the broker no longer holds them.
- They can become an unsecured claim in the broker's bankruptcy, recovering only part of their value.
- So investors ask whether a fund spreads its assets over several brokers, and whether its contracts limit rehypothecation.

8 Example 3: when the prime broker fails

Varden reused $400m of Kestrel's assets; Kestrel owed Varden $250m

Assets reused by the broker	rehypothecated	**$400m**
Kestrel's debt to the broker	set off against them	**$250m**
Unsecured claim	400 − 250	**$150m**
Loss at 40% recovery	60% × 150	**$90m**
Loss as a share of NAV	90 ÷ 500	**18%**

IN THE LESSON

- Kestrel's prime broker, a made up bank called Varden Securities, has reused four hundred million dollars of Kestrel's assets, and Kestrel owes Varden two hundred and fifty million.
- Then Varden fails.
- In our simplified version, Kestrel's debt of two hundred and fifty million is set off against the reused assets.
- The unsecured claim is four hundred minus two hundred and fifty, one hundred and fifty million.
- Suppose the bankruptcy recovers forty per cent, so sixty per cent is lost.
- Kestrel loses sixty per cent of one hundred and fifty, ninety million.
- As a share of net asset value that is ninety over five hundred, eighteen per cent.
- Nothing in Kestrel's trading went wrong.
- The loss came only from where its assets were held.

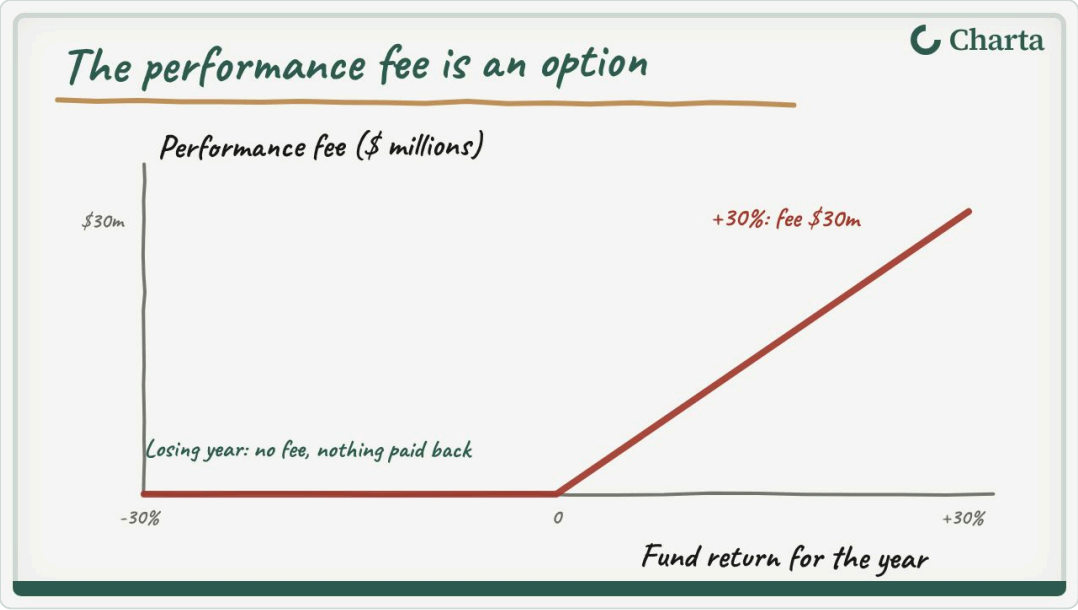
9 Operational, model, key-person and style-drift risk

- Operational: fraud, mispriced positions, weak controls
- Model risk: a pricing or trading model is wrong
- Key-person risk: the fund depends on a star manager
- Style drift: the fund strays from its stated strategy
- Check controls, people and strategy, not only returns

IN THE LESSON

- The rest of the list is about the fund and its people, not only its positions.
- Operational risk covers fraud, mispriced positions and weak controls.
- A manager who values his own illiquid positions, with no independent check, can report almost any number he likes.
- Model risk is the risk that a pricing or trading model is wrong, for example because it assumes relationships that break in a crisis.
- Key person risk arises because many funds depend on one star manager.
- If she leaves, the skill the investor paid for leaves with her.
- Style drift happens when a fund strays from the strategy it described, say a credit fund that starts buying equities to chase returns.
- So an investor must check controls, people and strategy, not only past returns.

10 The performance fee is an option



IN THE LESSON

- Now the incentive problem.
- Kestrel charges a performance fee of twenty per cent of the fund's gains each year.
- Along the bottom is the fund's return for the year, from minus thirty per cent, through zero, to plus thirty per cent.
- Up the side is the fee, in millions of dollars, on the five hundred million dollar fund.
- In a losing year, the line lies flat: there is no fee, but the manager pays nothing back either.
- In a winning year it climbs, and at plus thirty per cent the fee is twenty per cent of one hundred and fifty million, thirty million dollars.
- This hockey stick is the payoff of a call option.
- An option is worth more when volatility is higher, so the fee rewards the manager for taking more risk.

11 Example 4: why the fee rewards risk

Fund $500m, fee 20% of gains. Safe: +10%. Risky: +40% or −20%, even odds

Safe: fee	20% × 10% × 500	**$10m**
Risky: expected return	½ × 40% + ½ × (−20%)	**10%**
Risky: expected fee	½ × 20% × 40% × 500	**$20m**
Investors' net gain, safe	50 − 10	**$40m**
Investors' net gain, risky	½ × (200 − 40) + ½ × (−100)	**$30m**

IN THE LESSON

- The fund has five hundred million dollars and the fee is twenty per cent of gains.
- The manager can choose a safe strategy that earns ten per cent for sure, or a risky one that earns plus forty or minus twenty per cent, each with an even chance.
- The safe fee is twenty per cent of ten per cent of five hundred million, ten million dollars.
- The risky strategy has the same expected return: half of forty plus half of minus twenty is ten per cent.
- But its expected fee is half of twenty per cent of forty per cent of five hundred million, twenty million.
- Risk doubled the expected fee.
- The investors' expected net gain falls: fifty minus ten is forty million when safe, but half of two hundred minus forty, plus half of minus one hundred, is thirty million when risky.

12 Example 5: smoothing flatters the Sharpe ratio

Reported volatility 6%, return above cash 6%, autocorrelation 0.6

Reported Sharpe ratio	6% ÷ 6%	**1.0**
Variance adjustment, first order	(1 + 0.6) ÷ (1 − 0.6)	**4**
True volatility	6% × √4	**12%**
True Sharpe ratio	6% ÷ 12%	**0.5**

IN THE LESSON

- Kestrel reports volatility of six per cent a year, a return above cash of six per cent, and autocorrelation of point six.
- Some of Kestrel's assets rarely trade, so they are valued from models or stale prices, and reported values catch up with the truth only slowly.
- That smoothing shows up as autocorrelation: each month's return is correlated with the last.
- The reported Sharpe ratio is six over six, one point zero.
- A common adjustment multiplies the reported variance by one plus the autocorrelation, over one minus it: one point six over point four, which is four.
- This assumes first-order autocorrelation.
- Volatility is the square root of variance, so true volatility is six per cent times the square root of four, which is twelve per cent.
- The true Sharpe ratio is six over twelve, point five.
- Smoothing halved the risk on paper and doubled the Sharpe ratio.

13 Mistakes to avoid: match the risk to its source

Reported volatility is not the whole picture

What happened at a fund	Risk
Redemptions paid at 62.5%	Liquidity
Prime broker fails	Counterparty
Manager marks own positions	Operational
Star trader leaves	Key person
Credit fund buys equities	Style drift

IN THE LESSON

- Reported volatility is not the whole picture.
- The exam asks you to match each risk to its source, so try it on events like those in our story.
- Redemptions paid at only sixty two point five per cent of the request are liquidity risk on the investor's side.
- A prime broker that fails is counterparty risk.
- A manager who marks his own positions is operational risk.
- A star trader who leaves is key person risk.
- A credit fund that starts buying equities is style drift.
- None of these is captured by the fund's reported volatility.
- So a fund with a very smooth record deserves more questions, not fewer.

14 Small funds, systemic risk

- Systemic risk: trouble that spreads to the whole system
- Hedge funds are small next to banks
- What they do: leverage, fire sales, crowded trades
- Who is exposed: banks and prime brokers lend to them
- Opacity makes the links hard to see

IN THE LESSON

- Now step back from Alder's twenty million to the financial system.
- Systemic risk is the risk that trouble in one place spreads until it disrupts the whole system of lending, payments and markets.
- Hedge funds are small next to banks, so why worry?
- The answer has two parts.
- The first is what hedge funds do: they use leverage, which can force fire sales, and they often crowd into the same trades.
- The second is who is exposed to them: banks and prime brokers lend to them, so a fund's failure becomes a lender's loss.
- On top of both sits opacity.
- Hedge funds disclose little, so nobody can easily see how large and how connected their positions are.

15 Example 6: a small loss forces a big sale

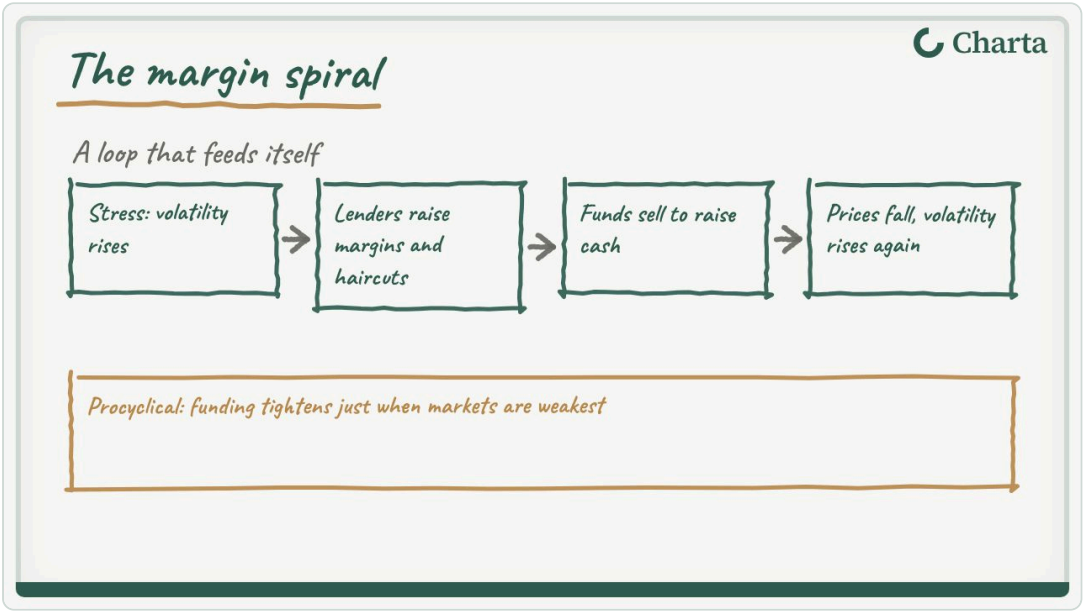
Kestrel: positions $2,000m, equity $500m, leverage target 4. Prices fall 5%

Positions after the fall	2,000 × 95%	**$1,900m**
Equity after the loss	500 − 100	**$400m**
Leverage now	1,900 ÷ 400	**4.75 times**
Positions allowed at 4	4 × 400	**$1,600m**
Forced sale	1,900 − 1,600	**$300m**

IN THE LESSON

- Kestrel has two thousand million dollars of positions, five hundred million of equity, and a leverage target of four times.
- Prices fall five per cent.
- Positions are now worth two thousand times ninety five per cent, one thousand nine hundred million.
- The loss of one hundred million comes off the equity, leaving four hundred.
- Leverage has jumped to one thousand nine hundred over four hundred, four point seven five times.
- At four times, Kestrel may hold only four times four hundred, one thousand six hundred million.
- So it must sell one thousand nine hundred minus one thousand six hundred, three hundred million dollars, three times the loss itself, into a falling market.
- Those fire sales push prices down further and hit every other holder of the same assets.

16 The margin spiral



IN THE LESSON

- Funding makes this worse.
- A margin is the collateral a lender demands against a position.
- A haircut is the discount a lender applies to securities pledged as collateral.
- Follow the boxes.
- Stress begins, and volatility rises.
- Lenders, seeing more risk, raise margins and haircuts.
- Funds must find more collateral, so they sell assets to raise cash.
- Their selling pushes prices down and volatility up again, and the loop returns to the start.
- This is the margin spiral.
- The bottom box names its key property.
- Margins and haircuts are procyclical: funding tightens just when markets are weakest.

17 Example 7: a haircut rises

Bond book $1,000m, backed by $100m of Kestrel's equity. Haircut 10%

Most it can hold at 10%	100 ÷ 10%	**$1,000m**
Haircut rises to 12.5%	100 ÷ 12.5%	**$800m**
Forced sale, no loss yet	1,000 − 800	**$200m**
Prices fall 2%	2% × 800 = 16 lost	**equity $84m**
Most it can hold now	84 ÷ 12.5%	**$672m**

Bonds now worth 800 − 16 = 784: a second forced sale of $112m

IN THE LESSON

- Part of Kestrel's portfolio is a bond book of one thousand million dollars, backed by one hundred million of its equity, with a ten per cent haircut.
- At that haircut, the most it can hold is one hundred over ten per cent, one thousand million.
- Now the lender raises the haircut to twelve and a half per cent.
- The most it can hold falls to one hundred over twelve and a half per cent, eight hundred million.
- Kestrel must sell two hundred million, although it has lost nothing yet.
- Others sell too, and prices fall two per cent.
- Two per cent of eight hundred is sixteen million lost, leaving equity of eighty four.
- The most it can hold is now eighty four over twelve and a half per cent, six hundred and seventy two million.
- After the loss the bonds are worth eight hundred minus sixteen, seven hundred and eighty four.
- So a second forced sale of one hundred and twelve million follows.

18 Crowded trades and vanishing liquidity

- Crowded trade: many funds hold similar positions
- One fund's forced sale hits all the others
- Losses spread with no direct link between funds
- Funds also supply liquidity to markets
- When they retreat, markets dry up

IN THE LESSON

- Fire sales hurt most when trades are crowded.
- A crowded trade is one where many funds hold similar positions, often because they use similar models.
- Then one fund's forced sale pushes down the price of assets that all the others hold, and their losses trigger more selling.
- The funds never lent to each other, so losses spread with no direct link between funds, only through common positions.
- There is a second effect.
- In normal times hedge funds supply liquidity: they buy when others want to sell.
- In stress they retreat, and markets dry up just when liquidity is most needed.

19 Who is exposed: banks and prime brokers

- Banks and prime brokers lend to and trade with funds
- A large fund default passes losses to its counterparties
- Example: LTCM in 1998
- Opacity: each lender sees only its own exposure
- Kestrel: Varden lends $250m

IN THE LESSON

- The second channel is exposure.
- Banks and prime brokers lend to hedge funds, finance their positions and trade derivatives with them.
- If a large fund defaults, its losses pass to those counterparties, and a hit to a big bank can then spread across the system.
- The classic case is Long Term Capital Management, known as L T C M, in nineteen ninety eight, whose troubles put large losses in prospect for the banks that dealt with it.
- Opacity makes this channel dangerous.
- Each lender sees only its own exposure, so nobody sees the whole, and supervisors may not know where the losses would land.
- At Kestrel, Varden lends two hundred and fifty million dollars.
- If Kestrel failed, that is where the damage would go first.

20 Exam point: the channels, not the size

Systemic risk comes from channels, not from fund size alone

Channel	How it spreads
Leverage	Small loss, big forced sale
Forced liquidation	Fire sales hit other holders
Common positions	Crowded trades fall together
Procyclical funding	The margin spiral
Counterparty links	Fund default hits lenders

IN THE LESSON

- Systemic risk comes from channels, not from fund size alone.
- Here are the five to name in an answer.
- Leverage turns a small loss into a big forced sale: at Kestrel, a five per cent fall forced a sale of three hundred million.
- Forced liquidation creates fire sales that hit other holders of the same assets.
- Common positions mean crowded trades fall together.
- Procyclical funding gives the margin spiral, where a higher haircut forced a sale before any loss.
- Counterparty links mean a fund's default hits the banks that lend to it.
- The trap is to argue that hedge funds cannot matter because their assets are small next to banks.
- A small, leveraged, crowded sector can still shake the system.

21 Regulation: two aims, two routes

- Aim 1: protect investors
- Aim 2: contain systemic risk
- Direct route: rules on the manager and the fund
- Indirect route: rules on counterparties, mainly banks
- Most rules reach funds via managers and banks

IN THE LESSON

- How do regulators try to limit these risks?
- Keep two questions apart.
- First, what is the aim?
- Some rules protect investors, such as the Alder Foundation, from losses and misconduct.
- Others contain systemic risk.
- Second, what is the route?
- Direct regulation targets the manager and the fund.
- Indirect regulation works through the fund's counterparties, mainly the banks that lend to it and trade with it.
- The fund itself is a private vehicle and often lightly regulated.
- So most regulation reaches hedge funds through their managers, which can be registered and supervised, and through the banks that serve them, which are already heavily regulated.

22 Direct regulation of the manager and the fund

- Registration of the manager
- Disclosure to investors
- Confidential reports: positions, leverage, counterparties
- Rules on valuation, custody and risk management
- EU AIFMD: regulates the manager; depositary; leverage

IN THE LESSON

- Direct regulation starts with registration of the manager, so the supervisor knows who it is and can inspect it.
- Then disclosure to investors, about strategy, fees and risks.
- For systemic risk, the key tool is confidential reporting to supervisors of positions, leverage and counterparty exposures.
- These reports are not public, but they let supervisors see where risk is building up, which tackles opacity.
- Direct rules also cover valuation, custody and risk management: how positions are priced, who holds the assets, and how risk is controlled.
- A leading example is the E U Alternative Investment Fund Managers Directive.
- It regulates the manager rather than the fund, it requires a depositary, an independent firm that safeguards the assets, and it requires leverage reporting.

23 Indirect regulation through counterparties

- Capital charges on banks' exposures to funds
- Exposure limits on lending to a single fund
- Margin and clearing rules for derivatives
- Volcker rule: limits banks sponsoring or investing in funds

IN THE LESSON

- Indirect regulation works through the firms that deal with hedge funds.
- Banks must hold capital charges against their exposures to funds, so lending to a risky fund uses up the bank's capital.
- Exposure limits cap how much a bank may lend to a single counterparty, so one fund's failure cannot sink one lender.
- Margin and clearing requirements for derivatives make funds post collateral up front and route many trades through central clearing houses, so losses are covered before they spread.
- And the Volcker rule, a U S rule, restricts banks from sponsoring or investing in hedge funds.
- None of these rules names Kestrel, yet each changes how much Kestrel can borrow and on what terms.

24 Example 8: a bank rule reaches the fund

Varden lends Kestrel $250m. Capital charge 8%, then 12%. Cost of capital 15%

Capital held at 8%	8% × 250	**$20m**
Yearly cost at 15%	15% × 20	**$3.0m**
As a spread on the loan	3.0 ÷ 250	**1.2%**
Capital held at 12%	12% × 250	**$30m**
Cost and spread at 12%	15% × 30 = 4.5; ÷ 250	**1.8%**

Kestrel's borrowing cost rises 0.6% a year: it borrows less

IN THE LESSON

- Varden lends Kestrel two hundred and fifty million dollars.
- Suppose the capital charge is eight per cent, later raised to twelve, and Varden's shareholders want fifteen per cent a year on their capital.
- At eight per cent, Varden holds twenty million of capital against the loan.
- Fifteen per cent of twenty is three million a year.
- Spread over the loan, three over two hundred and fifty, that is one point two per cent a year, which Varden charges Kestrel.
- Now the charge rises to twelve per cent.
- Capital is thirty million, which costs four point five million, a spread of one point eight per cent.
- If Varden passes the whole cost on, Kestrel's borrowing cost rises by point six per cent a year, so it borrows less.
- The regulator never touched the fund, yet its leverage falls.

25 Protecting investors, and market-wide rules

- Only accredited or qualified investors may invest
- They are presumed able to judge and bear the risk
- Market-wide rules: e.g. short-selling restrictions
- These apply to every trader, not just hedge funds

IN THE LESSON

- Investor protection rules work mainly by limiting who may invest.
- Hedge funds are usually open only to accredited or qualified investors, meaning wealthy individuals and institutions that meet tests of wealth, income or professional standing.
- Such investors are presumed able to judge the risks and bear the losses, so they need less protection than the public.
- That is why a charity like Alder can invest in Kestrel while an ordinary saver cannot.
- Finally, some measures are market wide.
- Short selling restrictions limit selling borrowed shares.
- They apply to every trader, not just hedge funds, but they bite hard on hedge funds, because many of them sell short.

26 Exam point: sort each measure by aim and route

Separate investor protection from containing systemic risk

Measure	Main aim	Route
Accredited investors only	Investors	Direct
Confidential leverage reports	Systemic	Direct
Depositary, valuation rules	Investors	Direct
Bank capital charges	Systemic	Indirect
Derivatives margin, clearing	Systemic	Indirect

IN THE LESSON

- Separate investor protection from containing systemic risk.
- Take each measure in turn.
- Allowing only accredited investors protects investors, by the direct route, controlling who may enter the fund.
- Confidential leverage reports serve systemic risk, by the direct route, because supervisors use them to spot build-ups.
- Depositary and valuation rules mainly protect investors, directly, by keeping assets safe and prices honest.
- Bank capital charges serve systemic risk, indirectly, through the lender.
- Margin and clearing for derivatives also serve systemic risk, indirectly.
- Some rules help both aims, so ask which aim is the main one.
- And remember the pattern: most rules reach the fund through its manager or the banks that serve it.

27 A story: three investors, one strategy

- US family office: taxable, wants tax pass-through
- Alder Foundation: US tax-exempt, avoids UBTI
- Non-US pension fund: prefers an offshore vehicle
- One portfolio must suit all three

IN THE LESSON

- Kestrel's manager wants money from three kinds of investor.
- A U S family office pays tax and wants tax pass through, meaning the fund's income flows straight onto its own tax return and is taxed once, not taxed in the fund and again when paid out.
- The Alder Foundation is a U S charity exempt from tax.
- But income earned with borrowed money can count as unrelated business taxable income, on which even a tax exempt investor pays tax, and Kestrel uses leverage.
- A pension fund outside the U S prefers a vehicle based offshore.
- Kestrel wants to run one portfolio, with one team and one set of trades, that suits all three.

28 The management company

- Management company: often a limited liability company
- Employs the investment staff
- Earns the management and performance fees
- Acts as general partner of the fund
- Keeps the fund's liabilities away from the firm

IN THE LESSON

- A hedge fund is usually not a single entity.
- At the centre is the management company, often a limited liability company, whose owners can lose only what they put in.
- Kestrel Ridge Management employs the investment staff: the portfolio managers, analysts and traders.
- It earns the fees: a management fee, a yearly charge on assets, and the performance fee on gains.
- It also acts as general partner of the fund.
- In a limited partnership, the general partner runs the business, while the limited partners, the investors, are liable only up to what they put in.
- A general partner is normally liable for the partnership's debts, so using a limited liability company in that role keeps the fund's liabilities away from the firm and its owners.

29 Onshore and offshore feeders

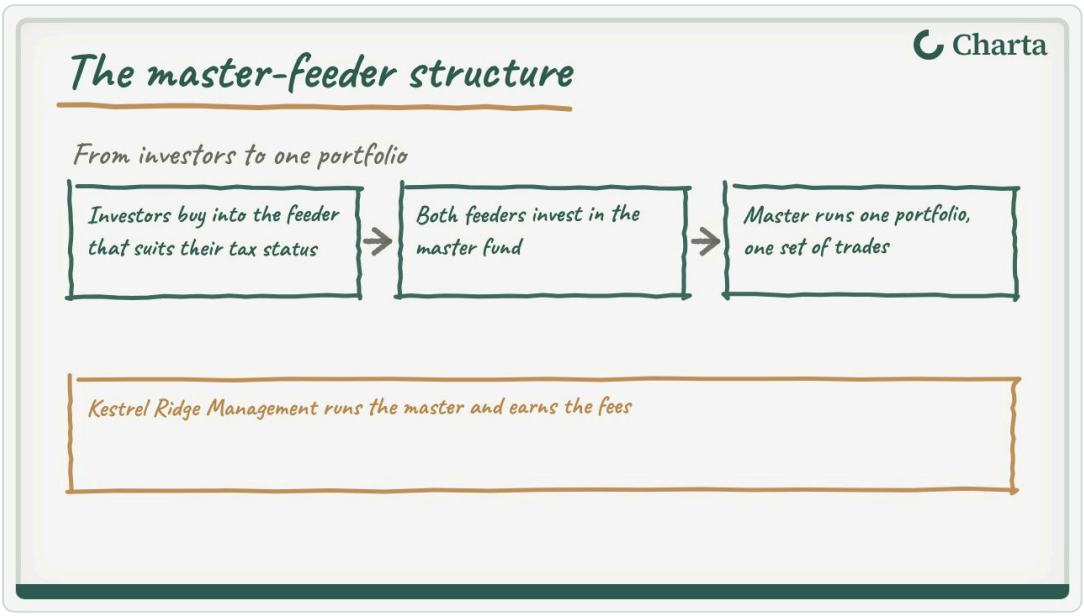
Two feeder funds, one for each kind of tax status

Feature	Onshore feeder	Offshore feeder
Legal form	Limited partnership	Corporation
Where	United States	Often Cayman Islands
Who invests	US taxable	Non-US; US tax-exempt
Why	Tax pass-through	Avoids UBTI from leverage

IN THE LESSON

- The fund itself is commonly split in two, one feeder fund for each kind of tax status.
- Go through the table row by row.
- Legal form: the onshore feeder is a limited partnership, and the offshore feeder is a corporation.
- Where: the onshore feeder is set up in the United States, and the offshore feeder often in the Cayman Islands.
- Who invests: U S taxable investors, like the family office, go onshore.
- Non U S investors, like the pension fund, and U S tax exempt investors, like Alder, go offshore.
- Why: the partnership gives tax pass through.
- The corporation stands between the leverage and the tax exempt investor, who receives a corporation's returns rather than income earned with borrowed money, and so avoids unrelated business taxable income.

30 The master-feeder structure



IN THE LESSON

- Now the key structural idea.
- In a master feeder structure, both feeders invest in one master fund, which runs a single portfolio.
- Follow the boxes from left to right.
- Investors buy into the feeder that suits their tax status.
- The two feeders then invest their money in the master fund.
- The master holds the positions and runs one portfolio, with one set of trades.
- The bottom box completes the picture: Kestrel Ridge Management runs the master and earns the fees.
- Why bother with a master?
- Without it, Kestrel would run two parallel portfolios.
- Every trade would be done twice, the two portfolios would drift apart, and costs would rise.
- With it, trades are not duplicated, and every investor gets the same portfolio whatever its tax status.

31 Example 9: master-feeder arithmetic

Onshore feeder $200m, offshore $300m. Master gains 8%; buys $50m of a bond

Master fund	200 + 300	**$500m**
Onshore share	200 ÷ 500	**40%**
Master gain	8% × 500	**$40m**
Gain to each feeder	40% and 60% of 40	**$16m and $24m**
Bond trades	one at the master	**1, not 2**

Without a master: two orders, $20m and $30m

IN THE LESSON

- The onshore feeder has two hundred million dollars and the offshore feeder, where Alder's money would sit, three hundred million.
- The master gains eight per cent in a year, and today it buys fifty million dollars of a bond.
- The master fund holds two hundred plus three hundred, five hundred million, the same net asset value we used throughout.
- The onshore share is two hundred over five hundred, forty per cent, so the offshore share is the remaining sixty.
- The master's gain is eight per cent of five hundred, forty million.
- Forty per cent of forty is sixteen million onshore, and sixty per cent is twenty four million offshore.
- The bond needs only one trade, at the master.
- With two parallel funds, Kestrel would place two orders, of twenty and thirty million.

32 Service providers and the regulatory exemption

- Administrator: independent NAV, investor records
- Custodian holds assets; auditor checks the accounts
- Prime broker: financing and trade clearing
- Limit investor numbers, or admit qualified purchasers
- Keeps the fund outside registered fund rules

IN THE LESSON

- Around the fund sit independent service providers, which give control and credibility.
- The administrator calculates the net asset value independently and keeps the investor records, so the manager does not price its own book.
- The custodian holds the assets, and the auditor checks the accounts each year.
- The prime broker provides financing and clears trades.
- Alder will check that each is a real, independent firm.
- Last, the regulatory point.
- A fund that limits the number of its investors, or admits only qualified purchasers, meaning investors who pass a high wealth test, stays outside the rules for registered investment companies, the regime for funds sold to the public.

33 Exam point: why the structure looks like this

Structure follows tax, liability, regulation and efficiency

Feature	Reason
Onshore LP, offshore corporation	Investors' tax status
LLC manager as general partner	Limits liability
Few or qualified investors only	Regulatory exemption
Master fund, one portfolio	Operational efficiency
Independent administrator, auditor	Control and credibility

IN THE LESSON

- Structure follows tax status, liability limits, regulatory exemption and operational efficiency, with credibility on top.
- Match each feature to its reason.
- The onshore partnership and the offshore corporation exist because investors differ in tax status.
- A limited liability management company acting as general partner limits liability.
- Admitting only a few or qualified investors earns the regulatory exemption.
- A master fund running one portfolio gives operational efficiency.
- And independent administrators and auditors give control and credibility.
- When asked why a fund is set up a certain way, name the reason behind each piece.
- If a question mentions a U S tax exempt investor and leverage, think of the offshore feeder.

34 Try three quick questions

1. Positions $1,000m, equity $200m, leverage target 5. Prices fall 4%. Sale?
   Answer: 960 and 160. Allowed 5 × 160 = 800. Sell $160m.
2. NAV $800m, gate 5% a quarter. Requests $100m; you asked $10m. Paid now?
   Answer: Gate $40m. 40 ÷ 100 = 40%. You get $4m.
3. US tax-exempt endowment, leveraged fund. Which feeder, and why?
   Answer: Offshore corporation: avoids UBTI from leverage.

IN THE LESSON

- Pause the video, think, then listen to the answers.
- Question one.
- A fund holds one thousand million dollars of positions with two hundred million of equity, and targets leverage of five times.
- Prices fall four per cent.
- How much must it sell?
- Positions fall to nine hundred and sixty million and equity to one hundred and sixty.
- Five times one hundred and sixty is eight hundred, so it must sell one hundred and sixty million dollars.
- Question two.
- A fund's net asset value is eight hundred million, with a gate of five per cent a quarter.
- Requests total one hundred million, and you asked for ten.
- How much are you paid now?
- The gate is forty million, so each request is paid forty per cent, and you get four million.
- Question three.
- A U S tax exempt endowment invests in a leveraged hedge fund.
- Which feeder suits it, and why?
- The offshore corporation, because it avoids unrelated business taxable income from leverage.