CHARTA LEARNING · LESSON NOTES

Private equity through the company life cycle

Private Markets

1 A story: one size does not fit all

- Start-up: an idea and a team, little revenue
- Expansion: proven product, growing revenue
- Maturity: steady cash flow
- Decline: shrinking, balance sheet in trouble

IN THE LESSON

- Think of a family car.
- A teenager learning to drive needs a cheap car.
- A parent with a steady job can take out a car loan and repay it each month.
- Companies are the same.
- A start-up has an idea, a team and almost no revenue, so only investors who accept losing everything will fund it.
- An expanding company has a proven product and growing sales, but still needs cash to grow.
- A mature company earns steady cash and can carry borrowing.
- A company in decline is shrinking, and its debts are too heavy.
- Each stage calls for a different kind of private equity, and Ines Orsini always starts by asking which stage she is looking at.

2 A company's life, and who funds it

Chart: Cash flow vs Age of the company

- Seed venture
- Growth equity
- Buyout
- Turnaround
- Break-even

IN THE LESSON

- Here is the life of a company drawn as a picture.
- Age runs along the bottom, and cash flow goes up the side.
- The grey line is break-even, where the company earns as much as it spends.
- Now follow the curve from the left.
- A young company burns cash, so the line starts below break-even.
- This is where seed venture capital works.
- As sales grow, the line crosses break-even and climbs.
- That is expansion, the home of growth equity.
- At the top, cash flow is high and steady.
- That is maturity, and buyouts fit here.
- Then the line falls back as the business declines, and turnaround investors step in.
- Notice that the strategy follows the height of the line, because height is what debt can safely rely on.

3 Stage and strategy side by side

Which strategy fits which company

Stage of the company	Strategy
Idea, no revenue	Seed venture
Revenue growing, cash needed	Growth equity
Steady cash flow	Buyout
Shrinking, debts too heavy	Turnaround

IN THE LESSON

- Let us put the stages and the strategies in a table.
- A company with an idea and no revenue suits seed venture capital, which funds it with equity and accepts that many will fail.
- A company whose revenue is growing but which still needs cash suits growth equity, usually a minority stake with little debt.
- A company with steady cash flow suits a buyout, where the sponsor takes control and borrows heavily.
- A company that is shrinking, with debts that are too heavy, suits a turnaround investor, who can restructure the balance sheet.
- The rule underneath is simple.
- Debt needs stable cash flow, and early stage returns rest on a few large winners.
- Match the tool to the certainty of the cash.

4 Example 1: who can carry debt?

Debt of 5 × EBITDA at 8%. Interest cover = EBITDA ÷ interest

Fernbank Foods, EBITDA 40	40 ÷ (0.08 × 200)	**2.5×**
Brightwave Software, EBITDA 6	6 ÷ (0.08 × 30)	**2.5×**
Brightwave if EBITDA falls 40%	3.6 ÷ 2.4	**1.5×**
Lumora Robotics, EBITDA −8	no cash to pay interest	**None**

IN THE LESSON

- Now test that rule with numbers.
- An analyst at Harbourlight proposes debt of five times E B I T D A at eight per cent for three companies.
- E B I T D A is a rough measure of operating cash flow, and interest cover is E B I T D A divided by interest.
- Fernbank Foods, a mature maker of chilled foods, has E B I T D A of forty and debt of two hundred, so cover is two point five times.
- Brightwave Software has E B I T D A of six and debt of thirty, the same cover on paper.
- But its earnings have swung forty per cent, and a repeat cuts cover to one point five.
- Lumora Robotics loses eight a year, with nothing to pay interest.
- Leverage belongs on Fernbank, and only Fernbank.

5 A story: money in stages

- Minority stake in a young company
- Money released in stages, tied to milestones
- Convertible preferred shares, not ordinary shares
- Most deals fail, a few carry the fund

IN THE LESSON

- Imagine you back a street food stall.
- You do not hand over the whole budget on day one.
- You give enough to buy a cart, then more once customers queue, then more to open a second pitch.
- Venture capital works like that.
- A venture fund takes a minority stake in a young company and releases money in stages, each stage tied to a milestone.
- The shares it buys are usually convertible preferred shares.
- They rank ahead of ordinary shares if things go badly, and can turn into ordinary shares if things go well.
- The fund also asks for a seat on the board and a say over big decisions.

6 How staged money works

When a milestone is met

Seed money for the prototype →
Prototype works: milestone met →
Next round, higher price

When a milestone is missed

Milestone missed →
Terms tighten or money stops →
Fund writes the stake down

IN THE LESSON

- Here is how staged money flows.
- Look at the top row first.
- The fund provides seed money, enough to build a prototype.
- When the prototype works, that is a milestone met, and the next round of money arrives at a higher price, because the risk is now smaller.
- Now the bottom row.
- If a milestone is missed, the terms tighten or the money stops, and the fund writes the stake down.
- Staging is the investor's main protection, because the fund never has all its money at risk in a company that is not delivering.
- The founders accept it, because every milestone met means they give up less of the company in the next round.

7 Power law: one deal carries the fund

Money back (m)

Top deal	**18**
Second deal	**4**
Three at cost	**3**
Five failed	**0**

Ten deals, 1m each: 25 back on 10 in. Without the top deal: 7

IN THE LESSON

- Now the shape of venture returns.
- Harbourlight's venture fund puts one million into each of ten start-ups, ten million in all.
- The vertical axis is money returned, in millions.
- The tallest bar is the top deal, which returns eighteen.
- The next returns four.
- Three more companies return only their cost, one each, three together.
- And five fail and return nothing, which is the bar of zero.
- Add them up and twenty five comes back on ten put in.
- Take away the top deal and only seven comes back, a loss.
- This is a power law.
- Most deals return little or nothing, and one or two outliers carry the whole fund.

8 Venture and growth equity compared

Which trait belongs to which strategy

Trait	Strategy
Product and market unproven	Venture
Proven model, cash to expand	Growth
Returns rest on a few giant winners	Venture
Minority stake, preferred shares	Both

IN THE LESSON

- Venture and growth equity both buy minority stakes with preferred shares, so they are easy to confuse.
- The table sorts the traits.
- When the product and the market are still unproven, that is venture.
- When the model is proven and the company needs cash to expand, that is growth equity.
- Returns that rest on a few giant winners are venture, because most of its deals return little.
- And the minority stake in preferred shares belongs to both.
- The big difference is risk.
- By the growth stage the product risk and the market risk are largely resolved, so growth equity sits between venture and the buyout in risk, with fewer total losses and a narrower spread of results.

9 Example 2: the liquidation preference

Invest 20 for 25%; 1× non-participating preference

Sale at 40: as ordinary shares	0.25 × 40 = 10	**Take 20**
Sale at 80	0.25 × 80 = 20	**Equal**
Sale at 200	0.25 × 200 = 50	**Convert: 50**
Participating, sale at 60	20 + 0.25 × (60 − 20)	**30**

IN THE LESSON

- Now growth equity at work.
- Brightwave Software has a proven business and wants cash to expand.
- Harbourlight's growth fund puts in twenty for a quarter of the company.
- The shares are convertible preferred with a one times, non participating liquidation preference.
- On a sale, the fund takes the greater of its twenty back or a quarter of the price.
- Sold for forty, a quarter is ten, so it takes its twenty back.
- Sold for eighty, a quarter is twenty, so both routes are equal.
- Sold for two hundred, a quarter is fifty, so it converts.
- A participating version takes twenty first and then a quarter of the rest, so at sixty it collects thirty.
- The contract does the work that control would do.

10 Growth equity: read the contract

- Product and market proven, so risk is lower than venture
- Minority stake, little debt, often profitable
- No control: protection lives in the share terms
- Liquidation preference, anti-dilution, board seat, vetoes

IN THE LESSON

- So what separates growth equity from venture is the risk.
- In growth equity the product works and the market is proven, so the question is no longer whether the business exists but how fast it can grow, whether through new markets, acquisitions, or letting founders sell some shares.
- Revenue is meaningful and often profitable, debt is little, and the stake is usually a minority.
- That is where the trap lies.
- A buyout investor protects itself by owning the company.
- A growth investor with a minority stake cannot replace the chief executive, so protection must be written into the shares.
- Read the contract as closely as the price.

11 A story: the house with a mortgage

- Controlling stake in a mature, cash-generative business
- Much of the price paid with debt
- Company cash flow repays the debt
- Management owns equity, so interests line up

IN THE LESSON

- Think of buying a house with a mortgage.
- You put down a deposit and the bank lends the rest.
- Rent from tenants pays the loan down, and if the house rises in price, your small deposit earns a big return.
- A buyout works the same way.
- A sponsor, here Harbourlight's buyout fund, buys a controlling stake in a mature business and pays for much of the price with debt, using the company's own cash flow to repay it.
- Control lets the sponsor change the strategy, the leadership and the way the company is financed.
- Managers are given equity too, so their interests line up with the sponsor's.
- Control and debt are the two decisions that define a buyout.

12 Fernbank: where the money comes from

Price 320 = 8.0 × EBITDA of 40

Sources of the 320 price	Amount
Senior loan, repaid first	120
High-yield bonds	55
Mezzanine, repaid last	25
Equity: fund and managers	120

IN THE LESSON

- Harbourlight's buyout fund agrees to buy Fernbank Foods at eight times its E B I T D A of forty, a price of three hundred and twenty.
- Where does the money come from?
- The table shows the sources.
- A senior loan of one hundred and twenty is repaid first, so it costs least.
- High yield bonds of fifty five rank below it and pay more.
- Mezzanine of twenty five ranks last among the debt, pays the most, and often comes with a share of the upside.
- Together that is the debt, well over half the price.
- The rest, one hundred and twenty, is equity from the fund and the managers.
- The sponsor equity is the smaller part, and that is the point.

13 Five kinds of buyout

- Management buyout: existing managers lead
- Management buy-in: outside managers take over
- Take-private: buy a listed company, delist it
- Secondary buyout: sold from one sponsor to another
- Buy-and-build: a platform plus add-on acquisitions

IN THE LESSON

- Buyouts come in several variants.
- In a management buyout, the existing managers lead the purchase, because they know the business best.
- In a management buy in, outside managers come in and take over.
- A take private buys a company listed on a stock market and removes it from the exchange.
- A secondary buyout is a sale from one sponsor to another, which means the previous owner has already taken its easy gains.
- And buy and build starts with a platform company and adds smaller businesses to it, hoping the combined firm is worth more than the parts.
- In every variant the sponsor uses control and debt.

14 Example 3: sources of buyout return

Fernbank: buy at 8.0× EBITDA 40, exit year 5 at 8.0×

Entry equity	320 − 200 debt	**120**
Gain from EBITDA growth	(52 − 40) × 8.0	**96**
Gain from debt repaid	200 − 130	**70**
Gain from a higher multiple	(8.0 − 8.0) × 52	**0**
Total gain	96 + 70 + 0	**166**

IN THE LESSON

- So where does the return come from?
- Three places.
- The plan for Fernbank is to lift E B I T D A from forty to fifty two in five years, through better pricing and add on acquisitions.
- At a multiple of eight, that adds ninety six of value.
- The second source is debt repaid from the company's own cash flow.
- Net debt falls from two hundred to one hundred and thirty, which adds seventy.
- The third source is a higher exit multiple, and the plan assumes none, because hoping for it is hoping for the market.
- The total gain is one hundred and sixty six on equity of one hundred and twenty.
- None of it needs luck.

15 How leverage changes the equity return

Equity return = Asset return + (Asset return − Cost of debt) × D/E

Equity return	What the owner earns
Asset return	Operating return on all assets
Cost of debt	Interest rate on the borrowing
Debt to equity	Debt divided by equity

IN THE LESSON

- Now the catch.
- Debt multiplies the equity return, in both directions.
- The return on equity equals the return on the assets, plus the spread between what the assets earn and what the debt costs, times the ratio of debt to equity.
- Picture a see saw.
- The debt is a long plank, and the spread decides which way it tips.
- While the assets earn more than the debt costs, the spread is positive and leverage adds to the owner's return.
- When the assets earn less than the debt costs, the spread is negative, and the very same plank pushes the return down, by more than the assets alone would lose.
- Leverage helps only above the cost of debt.

16 Example 4: the same debt, two outcomes

Assets 320, debt 200 at 8%, equity 120

Debt to equity	200 ÷ 120	**1.67**
Assets earn 12%	12 + (12 − 8) × 1.67	**18.7%**
Assets earn 2%	2 + (2 − 8) × 1.67	**−8.0%**
Check at 2%, in money	6.4 − 16.0 = −9.6, ÷ 120	**−8.0%**

IN THE LESSON

- Let us run it for Fernbank, with assets of three hundred and twenty, debt of two hundred at eight per cent, and equity of one hundred and twenty.
- Debt to equity is one point six seven.
- If the assets earn twelve per cent, the equity return is twelve plus the spread of four times one point six seven, which is eighteen point seven per cent.
- Now suppose a bad year, and the assets earn only two per cent.
- The spread is minus six, times one point six seven, so the equity return is minus eight per cent.
- Check it in money.
- Two per cent of three hundred and twenty is six point four, interest is sixteen, and minus nine point six over one hundred and twenty confirms it.
- Debt cuts both ways.

17 Equity return against asset return

Chart: Return on equity (%) vs Return on assets (%), 0 to 16

- With debt
- No debt
- Zero return
- Debt costs 8%

IN THE LESSON

- Here is the same idea as a picture.
- The horizontal axis is the return on the assets, from nought to sixteen per cent.
- The vertical axis is the return on equity.
- The grey line is a company with no debt, where the equity return simply equals the asset return.
- The green line is Fernbank with its debt, and it is steeper.
- The red line marks the cost of debt, eight per cent.
- To the right of it, the levered owner earns more than the unlevered owner, and the gap widens.
- To the left, the levered owner earns less, and drops below zero while the unlevered owner is still making money.
- The crossing is where the trap sits.

18 Common mistakes so far

- Buyout debt on a company still burning cash
- Judging a venture fund by its failures, not its winners
- Treating growth equity like a buyout, without control
- Assuming debt always lifts the equity return

IN THE LESSON

- Time to check four mistakes before we move on to valuation.
- First, putting buyout style debt on a company that is still burning cash.
- Debt needs steady cash flow, and Lumora Robotics has none.
- Second, judging a venture fund by how many deals failed.
- Eight of ten deals earning no profit can still make a good fund, if the winners are big enough, so look at the winners.
- Third, treating growth equity like a buyout.
- Without control, the value depends on influence and on the contract, so a minority investor must read the terms.
- Fourth, believing that debt always lifts the equity return.
- We saw it lifts the return only while the assets earn more than the debt costs.

19 The venture capital method

Post = Exit ÷ (1 + r)^n
Stake = Invest ÷ Post
Pre = Post − Invest

Post-money	Company value after the money
Stake needed	Share of the company to buy
Pre-money	Value before the money
Retention ratio	Share kept after later rounds

IN THE LESSON

- Valuing a start-up is like pricing a seedling.
- It earns nothing today, so you work backwards.
- Ask what the company might be sold for in a few years, then shrink that by the return you demand.
- That gives the post money value, the worth of the company today once the new money has gone in.
- It is the exit value divided by one plus the target return, raised to the number of years.
- The stake the fund needs is its investment divided by the post money value.
- Pre money value is the post money value less the investment.
- If later rounds will dilute the fund, divide the stake by the retention ratio, the share of its holding the fund expects to keep.

20 Example 5: valuing Lumora Robotics

Invest 6; exit 150 in 5 yrs; target 40%; keeps 80%; founders ask 20

Post-money	150 ÷ 1.4^5	**27.89**
Stake needed at exit	6 ÷ 27.89	**21.5%**
Stake needed now	21.5% ÷ 0.8	**26.9%**
Highest pre-money to offer	0.8 × 27.89 − 6	**16.31**

IN THE LESSON

- Now the numbers.
- Harbourlight's venture fund will invest six in Lumora Robotics, and expects to sell it for one hundred and fifty in five years.
- The fund's target return is forty per cent a year.
- Post money is one hundred and fifty divided by one point four to the power of five, which is twenty seven point eight nine.
- The stake needed at exit is six over twenty seven point eight nine, twenty one point five per cent.
- Later rounds will leave the fund with eighty per cent of what it buys now, so divide by point eight, giving twenty six point nine per cent today.
- The highest pre money value it can offer is point eight times twenty seven point eight nine, less six, sixteen point three one.
- The founders want twenty, which is a gap to negotiate.

21 What the fund can pay

Value today (m)

Post-money	**27.9**
Pre, no dilution	**21.9**
Pre, with dilution	**16.3**
Founders' ask	**20.0**

At the ask: keeps 18.5% × 150 = 27.7, 4.6×, IRR 35.8%

IN THE LESSON

- Here are the figures as bars, next to the founders' ask.
- The vertical axis is value today, in millions.
- The first bar is post money value.
- The second is pre money value without dilution, twenty one point nine.
- The third, sixteen point three, is pre money value allowing for dilution, the most the fund can pay and still earn forty per cent.
- The last bar is the founders' ask of twenty, above that.
- At twenty, the fund keeps eighteen point five per cent of a company sold for one hundred and fifty, worth twenty seven point seven.
- That is four point six times the six invested, an I R R of thirty five point eight per cent.
- Short of forty, so the fund must negotiate or accept less.

22 Example 6: valuing growth equity

Brightwave: EBITDA 6, peer multiple 11.0×, net debt 6

Enterprise value today	6 × 11.0	**66**
Pre-money equity	66 − net debt 6	**60**
Stake for 20 in	20 ÷ (60 + 20)	**25%**
Exit equity, year 4	15 × 11.0 − 5	**160**
Stake worth 40, 2.0×	25% × 160 = 40	**IRR 18.9%**

IN THE LESSON

- Growth equity values a business with firmer forecasts, so it can use discounted cash flow or multiples of comparable companies.
- Back to Brightwave Software, with E B I T D A of six.
- Comparable software companies trade at eleven times, so the enterprise value is sixty six.
- Subtract net debt of six, and the pre money equity value is sixty.
- The fund adds twenty, so post money is eighty, and its stake is twenty over eighty, a quarter.
- Now the forecast.
- In four years, fifteen of E B I T D A at the same multiple, less net debt of five, leaves one hundred and sixty of equity.
- A quarter of that is forty, twice the twenty invested, an I R R of eighteen point nine per cent.
- Whether that is enough depends on the fund's target.

23 The buyout valuation

Exit equity = Exit EBITDA × Exit multiple − Net debt
IRR = (Exit equity ÷ Entry equity)^(1/n) − 1

Exit EBITDA	Earnings the sponsor builds
Exit multiple	Price the next buyer pays
Net debt	Debt less cash at exit
IRR	Yearly return on equity

IN THE LESSON

- A buyout is valued by asking what the equity will be worth when the sponsor sells.
- Exit equity is the exit E B I T D A times the exit multiple, less net debt, which is debt less cash.
- Compare it with the equity put in at the start.
- The multiple of money is exit equity over entry equity.
- With no cash paid out along the way, the I R R is that multiple raised to one over the number of years, less one.
- Notice that three inputs drive everything: the E B I T D A the sponsor builds, the multiple the next buyer pays, and how much debt has been repaid.
- Only the first and the third are in the sponsor's hands.

24 Example 7: valuing the Fernbank buyout

Fernbank: entry equity 120, exit in year 5 at 8.0×

Exit enterprise value	52 × 8.0	**416**
Net debt at exit	200 − 70 repaid	**130**
Exit equity	416 − 130	**286**
Multiple of money	286 ÷ 120	**2.38×**
IRR over 5 years	2.38^(1/5) − 1	**19.0%**

IN THE LESSON

- Back to Fernbank Foods.
- Assume the sponsor exits at the entry multiple of eight, with E B I T D A of fifty two and net debt of one hundred and thirty.
- The exit enterprise value is fifty two times eight, four hundred and sixteen.
- Less net debt, exit equity is two hundred and eighty six.
- The fund and the managers put in one hundred and twenty, so the multiple of money is two point three eight times.
- The I R R is two point three eight to the power of one fifth, less one, which is nineteen per cent.
- That is the return the plan promises.

25 What changes the buyout return

Fernbank's five-year IRR under four exits

Exit case	IRR
Plan: EBITDA 52, 8.0×, debt 130	19.0%
Multiple 7.0×, EBITDA 52, debt 130	14.3%
EBITDA 40, 8.0×, debt 160	5.9%
EBITDA 40, 7.0×, debt 160	0.0%

IN THE LESSON

- Now read what the figures imply.
- The table tests Fernbank against four exits.
- The plan gives nineteen per cent a year.
- If the exit multiple falls to seven, the return drops to fourteen point three.
- If the plan stalls, with E B I T D A flat at forty, an exit at eight, and debt only down to one hundred and sixty, the return is five point nine.
- And if E B I T D A is flat and the multiple falls to seven, the equity comes back exactly as it went in, a return of nought.
- A buyout return leans on improvement and on the market, and leverage makes both matter more.

26 The trap: a target rate is not a forecast

- A 40% target is a cushion, not a forecast
- It covers failure risk and rosy founder forecasts
- Divide the stake by retention when rounds dilute
- Growth and buyouts: multiples and cash flows

IN THE LESSON

- Here is the trap in valuation.
- Look back at the forty per cent target.
- Does the fund expect to earn forty per cent a year?
- No.
- A target rate is much higher than the return the fund hopes for on average, because it has to cover two things.
- One is the chance that the company fails altogether, which the single exit forecast ignores.
- The other is the founders' forecasts, which are usually optimistic.
- So a high target rate is a way of being careful with a forecast, and it is not a prediction.
- Two more habits matter.
- If later rounds will dilute the fund, divide the stake by the retention ratio.
- And growth equity and buyouts, with firmer forecasts, use multiples and cash flows instead.

27 How wide is the spread of outcomes?

- Listed shares
- Buyouts
- Growth equity
- Venture capital

IN THE LESSON

- Last, we weigh risk and return.
- Picture the spread of results that investors actually get from different strategies, from a narrow spread on the left to a wide one on the right.
- Listed shares sit at the left.
- Results vary, but there is a market price every day.
- Buyouts come next.
- They are equity risk made bigger by debt, so they depend on credit conditions.
- Growth equity sits in the middle of private equity.
- Venture capital is furthest right, with the widest dispersion, the highest loss rates and the most lopsided payoffs.
- Across all private equity the gap between managers is wide, so manager selection matters.

28 Example 8: buyouts as levered equity

Listed beta 1.1 at D/E 0.5; Rf 3%, ERP 5.5%, illiquidity 2%

Asset beta	1.1 ÷ (1 + 0.5)	**0.73**
Buyout equity beta, D/E 1.5	0.73 × (1 + 1.5)	**1.83**
Expected return	3 + 1.83 × 5.5 + 2	**15.1%**
Volatility to model	16% × 1.83	**29.3%**

IN THE LESSON

- Reported figures flatter private equity, because valuations are smoothed.
- So the consultant advising Kestrel models buyouts as levered public equity plus an illiquidity premium.
- Comparable listed companies have an equity beta of one point one at a debt to equity ratio of half.
- Unlever by dividing by one plus a half, which gives an asset beta of point seven three.
- Relever at the buyout fund's ratio of one point five, point seven three times two point five, and the equity beta is one point eight three.
- Expected return is three plus one point eight three times five and a half, plus two for illiquidity, fifteen point one per cent.
- Volatility is sixteen times one point eight three, twenty nine point three, which is far above the reported figure.

29 Reported against modelled

Excess return ÷ volatility

Buyouts, reported	**1.10**
Buyouts, modelled	**0.41**
Listed shares	**0.34**

Risk-free 3%. Reported vol 11%; listed: 8.5% return, 16% vol

IN THE LESSON

- Here is what that does to return per unit of risk.
- The vertical axis is the excess return divided by volatility.
- The first bar is buyouts as reported: expected return of fifteen point one against reported volatility of eleven, a ratio of one point one.
- The second bar is the same buyouts at the modelled volatility of twenty nine point three, and the ratio falls to point four one.
- The third bar is listed equity, expected eight and a half with volatility of sixteen, point three four.
- Investors do expect an illiquidity and skill premium, and the modelled bar is still above listed shares, but only a little.
- An optimiser fed the first bar would overbuy.
- Treat buyouts as part of the equity risk budget.

30 Example 9: how much room has Kestrel?

Kestrel: total assets 1,600; limit 20% of assets

Policy limit, 20% of 1,600	0.20 × 1,600	**320**
Fund NAV	8.8% of assets	**140**
Unfunded commitments	promised, not yet paid	**100**
Exposure	NAV + unfunded = 15.0%	**240**
Room for new commitments	320 − 240 = 5.0%	**80**

IN THE LESSON

- Now size.
- Kestrel has one thousand six hundred in total assets.
- Its policy limits private markets exposure to twenty per cent, which is three hundred and twenty.
- Exposure is not measured by what the funds are worth today.
- It is net asset value plus unfunded commitments, the money Kestrel has promised but not yet paid.
- It holds fund net asset value of one hundred and forty, and unfunded commitments of one hundred.
- So exposure is two hundred and forty, which is fifteen per cent.
- The room for new commitments is eighty, five per cent of assets.
- A consultant who looks only at the net asset value, eight point eight per cent, would believe there is far more room.
- That would be the mistake.

31 Ines Orsini's proposal

New commitments of 80, fitting the 5% of room

Proposed new commitments	Amount
Buyout funds	40
Growth equity funds	25
Venture capital funds	15
Each of three yearly slices	26.7

IN THE LESSON

- Here is the proposal Ines Orsini takes to the trustees.
- Commit eighty to Harbourlight over three years, in three yearly slices of about twenty six point seven, so that no single year's entry prices dominate.
- Forty goes to buyouts, the biggest share, because their payoffs are the most predictable, though they count as levered equity.
- Twenty five goes to growth equity.
- Fifteen, the smallest, goes to venture capital, because it has the widest dispersion and many commitments are needed to be sure of owning a winner.
- The defence is that the plan fits within the limit, spreads the vintages, is paid for locking money up with a long horizon, and sizes venture by what the plan can afford to lose.

32 What could go wrong

- Low reported correlation comes from smoothed values
- Capital calls can arrive just as markets fall
- Listed assets fall, so the private share looks too high
- Wide manager dispersion: selection decides

IN THE LESSON

- What could go wrong with the proposal?
- Four things.
- First, the reported correlation with shares is low only because valuations are smoothed, so private equity is a weak diversifier in a crash, which is when diversification matters.
- Second, capital calls can arrive just when markets fall, so Kestrel needs liquid assets set aside to meet them.
- Third, if listed assets fall, the private share of the plan looks too high, and Kestrel may be unable to sell anything to rebalance.
- Fourth, manager dispersion is wide, so poor selection can wipe out the premium.
- The answer is to keep a liquidity budget, pace the commitments over years, and review the plan every year.

33 Recap

- Stage decides strategy; debt needs steady cash
- Venture: staged, preferred, power law; growth: contract
- Buyout: control plus debt, helps above its cost
- Value from the exit: post, stake, pre; exit equity, IRR
- Model buyouts as levered equity; size to liquidity

IN THE LESSON

- Let us pull it together.
- Strategy follows the stage of the company.
- Debt needs steady cash flow, so leverage belongs on mature firms and not on cash burners.
- Venture capital invests in stages, in convertible preferred shares, and its returns follow a power law.
- Growth equity takes minority stakes in proven companies and relies on contract terms.
- A buyout combines control with debt, and leverage helps only while the assets earn more than the debt costs.
- To value a stake, work from the exit: post money, stake and pre money for venture, multiples for growth, and exit equity then I R R for a buyout.
- And for allocation, model buyouts as levered equity, and size commitments to the horizon and liquidity budget.

34 Try three quick questions

1. Venture: invest 9, exit 81 in 2 years, target 50%. Post, stake, pre?
   Answer: 81 ÷ 1.5^2 = 36; stake 9 ÷ 36 = 25%; pre-money 27.
2. Buyout: equity in 80; exit EBITDA 30 at 9×, net debt 110; 4 years. IRR?
   Answer: 270 − 110 = 160; 2.0×; IRR = 2^(1/4) − 1 = 18.9%.
3. Assets earn 6%, debt costs 8%, D/E 2.0. Equity return?
   Answer: 6 + (6 − 8) × 2 = 2.0%, below 6%: leverage hurts.

IN THE LESSON

- Now try three quick questions yourself.
- Pause after each one.
- Question one.
- A venture fund invests nine and expects to exit for eighty one in two years, with a target return of fifty per cent.
- What are post money, the stake and pre money?
- Post money is thirty six, the stake is twenty five per cent, and pre money is twenty seven.
- Question two.
- A buyout puts in eighty of equity.
- Exit E B I T D A is thirty at nine times, with net debt of one hundred and ten, after four years.
- What is the I R R?
- Exit equity is one hundred and sixty, twice the equity, so the I R R is eighteen point nine per cent.
- Question three.
- Assets earn six per cent, debt costs eight, and debt to equity is two.
- The spread is minus two, times two, so the equity return is six minus four, which is two per cent.
- That is below the six the assets earn, so here leverage hurts.