OUTLIER MATH

NEW INVESTORS BUILDING A PORTFOLIO FOR POWER LAW

Ventioneers

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This guide walks new limited partners through the decisions that matter most before committing capital to venture: how portfolios are built to capture power law outcomes, when to use an SPV versus a fund, or both, how to diversify across stage, sector, and geography, and what real diligence looks like on both companies and managers.

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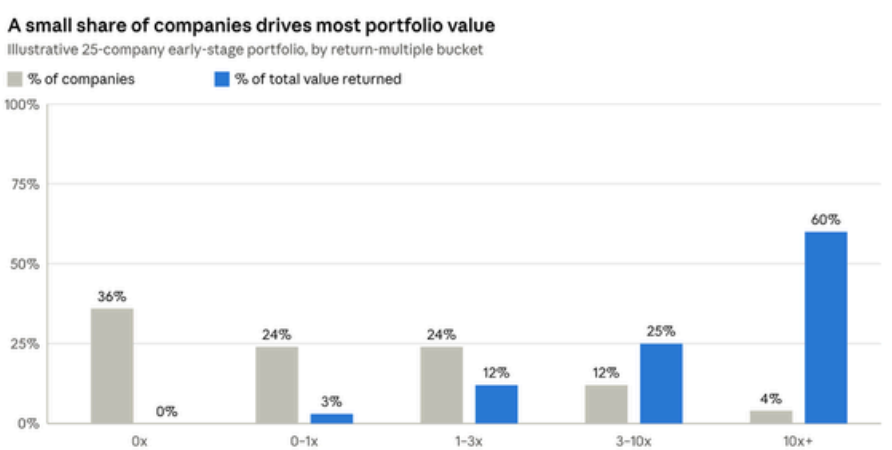
Chapter 1: Why Venture Belongs in a Portfolio

Venture capital is a distinct asset class, not a faster version of public equities. Understanding what makes it different is the foundation for every other decision in this guide.

Risk and return look nothing like public markets

In public equities, most individual stocks cluster around the market's average return, and diversification smooths outcomes toward that average. In venture, individual company outcomes are binary and extreme: most early stage startups fail outright or return less than capital invested, a smaller number return 1 - 5x, and a very small number, often just one in a well-constructed portfolio of 20 - 30 drive the majority of total returns. This is the power law, and it is the single most important fact about this asset class. It means a venture portfolio is not judged on its median outcome; it is judged on whether it was constructed to catch its outliers.



illustrative 25-company early-stage portfolio

A small number of outliers typically account for most of a venture portfolio's total value, which is why portfolio construction (Chapter 2) matters as much as individual company selection.

> In a typical 25 company portfolio, the top 4% of companies can drive roughly 60% of total value returned.

Illiquidity is structural, not incidental

A venture investment is illiquid by design. There is no public market to sell into, and secondary markets for private shares, while growing, are thin and often transact at a discount. Capital committed to a fund or an SPV should be treated as unavailable for 7 - 10+ years, with meaningful distributions typically not beginning until years 4 - 7. Investors who may need the capital back on a shorter horizon, or who would be forced sellers in a downturn, are not good candidates for this asset class regardless of the return potential.

The time horizon changes how you should think about "performance"

Because outcomes take years to materialize, early performance signals are unreliable and often misleading. A portfolio's paper markups in year 2 or 3 say little about eventual realized returns (see the glossary in Chapter 6 for the difference between TVPI and DPI). New LPs should expect a multi-year period where the portfolio shows little visible progress before outcomes: positive or negative become clear.

Who venture is actually suited for

Venture capital fits an investor who: can commit capital for a decade without needing it back, can tolerate a high probability that any single position returns nothing, is diversifying across enough positions (directly or through a fund) to give the power law room to work, and is allocating a portion of a broader portfolio that can absorb illiquidity and volatility, not the whole of it. Most institutional and sophisticated allocators treat venture as a satellite allocation within a diversified portfolio, not a core holding.

Chapter 2: Portfolio Construction Fundamentals

Good venture returns are engineered through construction discipline more than through picking skill alone.Decisions that matter most.

1. Company count: enough shots on goal

A portfolio of 5 - 10 companies is closer to a concentrated bet than a diversified strategy, it depends heavily on being right about a small number of picks. Institutional early stage portfolios typically target 20 - 30+ positions (held directly or through a fund) so the power law has statistical room to work. Below roughly 15 - 20 positions, the odds of missing the outlier entirely rise sharply.

2. Check sizing and ownership targets

Sizing every check the same way, regardless of stage, conviction, or ownership goal, dilutes the impact of the best ideas. Disciplined investors size checks against a

target ownership percentage (commonly 5 - 10%+ at seed for a fund leading or co-leading, smaller for syndicate or follow-on participation) and reserve larger allocations for the highest conviction positions rather than spreading capital evenly.

3. Reserve capital for follow-ons

A common first time mistake is deploying all committed capital into initial checks and having nothing left to defend pro-rata rights when a portfolio company outperforms and raises its next round. Experienced managers typically reserve 40 - 50% of total fund capital for follow-on investment in winners, since maintaining ownership through a company's growth stages is often where the majority of fund level return is created. Or they might offer the pro-rata or follow on through SPVs. When evaluating a manager, ask what share of capital is reserved for follow-ons and how those decisions get made.

4. The J-curve: expect a slow start

Fund and portfolio value typically dips before it rises. Management fees and early write downs reduce net asset value in years 1 - 3, while markups from successful companies take longer to appear and realized cash returns (distributions) take longer still, often not meaningfully beginning until years 4 - 7 of a fund's life, with full realization over 8 - 10+ years. This pattern, known as the J-curve, is normal and expected. New LPs who interpret a flat or slightly negative early net asset value as a bad sign are misreading a structural feature of the asset class, not a warning sign about the manager.

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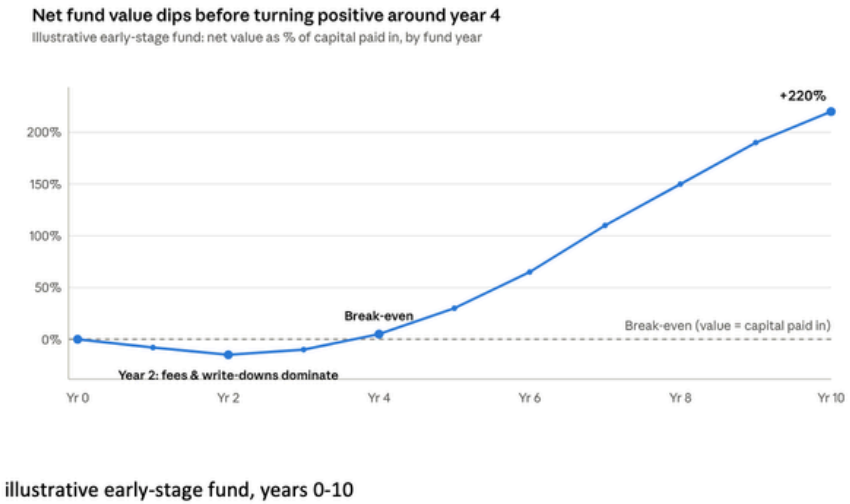

The dip in years 1 - 3 reflects mainly management fees and organizational fees, before any company has matured, while distributions typically don't meaningfully begin until the value line crosses back above the break even mark, often years 4 - 7.

> Net fund value often doesn't turn positive until year 4 — and full realization can take a decade

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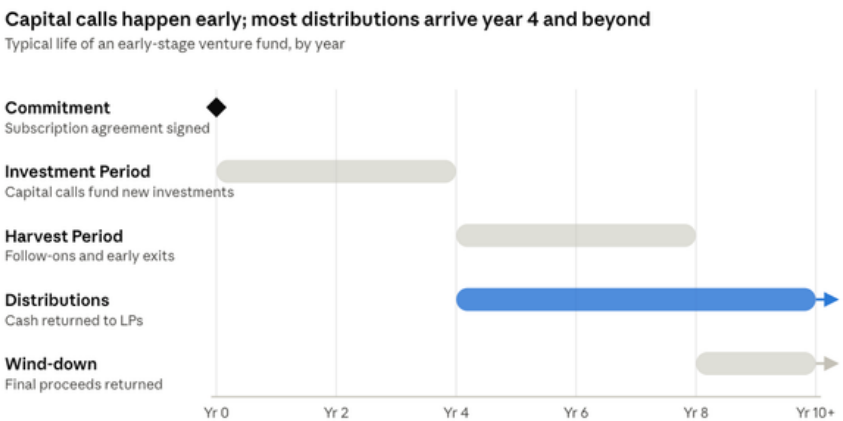
5. Vintage diversification

Because outcomes are also shaped by the market conditions a fund deploys into (a "vintage year" effect capital deployed at the top of a valuation cycle faces a different entry price environment than capital deployed after a correction), LPs who plan to be repeat venture investors benefit from spreading commitments across multiple vintage years rather than deploying a full allocation into a single fund or single year.

Life of a Fund: From Commitment to Wind Down

An LP's capital isn't wired all at once. Understanding the mechanics helps set expectations for when money moves and when it comes back.



- **Commitment:** You sign a subscription agreement pledging a total dollar amount; no cash changes hands yet.
- **Capital calls:** Over the investment period, the GP calls capital in tranches as new investments are made, typically with 10 - 14 days' notice.
- **Investment period:** The fund actively makes new investments, usually for 2-4 years from the first close.
- **Harvest period:** The GP manages existing positions, funds follow-ons from reserves, and begins realizing exits.
- **Distributions:** Cash or stock is returned to LPs as portfolio companies exit, typically starting years 4 - 7 and continuing through the fund's life.
- **Wind down:** By years 8 - 10+, the fund liquidates remaining positions and returns final proceeds, unless LPs approve an extension.

Chapter 3: SPVs vs. Funds, Choosing Your Vehicle

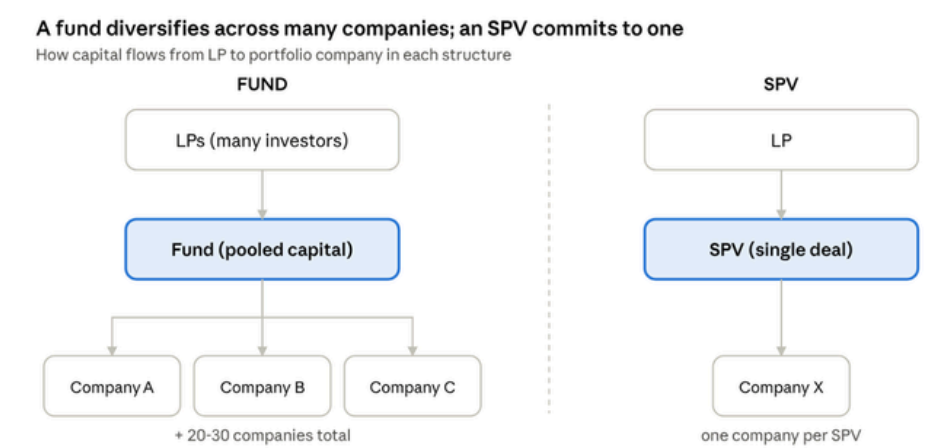
New investors often treat SPVs and funds as interchangeable ways to "get into" venture. They are different instruments suited to different goals, and conflating them is one of the more common early mistakes.

What each vehicle is

A **fund** is a blind or semi blind pool vehicle: LPs commit capital up front for a defined investment period (typically 2 - 4 years for deployment, 8 - 10+ years total fund life), and the manager deploys it across a portfolio according to a stated thesis, with discretion over which companies, how much, and when.

An **SPV (special purpose vehicle)** is a single purpose entity formed to make one investment in one company. LPs opt in deal-by-deal, seeing the specific company, terms, and valuation before committing.

Comparing the two



Capital Flow Structure: Fund vs. SPV

	Fund	SPV
Diversification	Built in, across the fund's full portfolio	None — you build it yourself across the SPVs you choose
Visibility	Capital committed before specific deals are known	Full visibility into the specific company and terms
Control	Manager discretion over deployment	LP chooses deal-by-deal
Fees	One fee/carry structure across the whole portfolio	Often a separate fee and carry per SPV, which compounds across many
Typical use	Core, diversified exposure with professional reserve management	Targeted access to a specific round, often oversubscribed or hard to access directly
Adverse selection risk	Lower — manager evaluates the full opportunity set	Higher — LP only sees the deal the sponsor chose to syndicate

Why sophisticated allocators often use both

A fund provides diversified core exposure and disciplined portfolio construction (Chapter 2) without requiring the LP to build that discipline themselves. SPVs provide targeted access to a specific round, a specific founder relationship, or co-investment rights that would not otherwise be available at a given check size. Used together, a fund anchors the portfolio and SPVs add selective, high conviction exposure on top.

The mistake to avoid is building an entire venture portfolio out of one-off SPVs and treating it as diversified. Without deliberate construction, company count, check sizing, follow-on reserves, a collection of SPVs is really a series of concentrated, uncorrelated bets rather than a portfolio, and each one typically carries its own fee and carry stack, which can erode net returns more than most first time investors expect.

Chapter 4: Diversification: Stage, Sector, and Geography

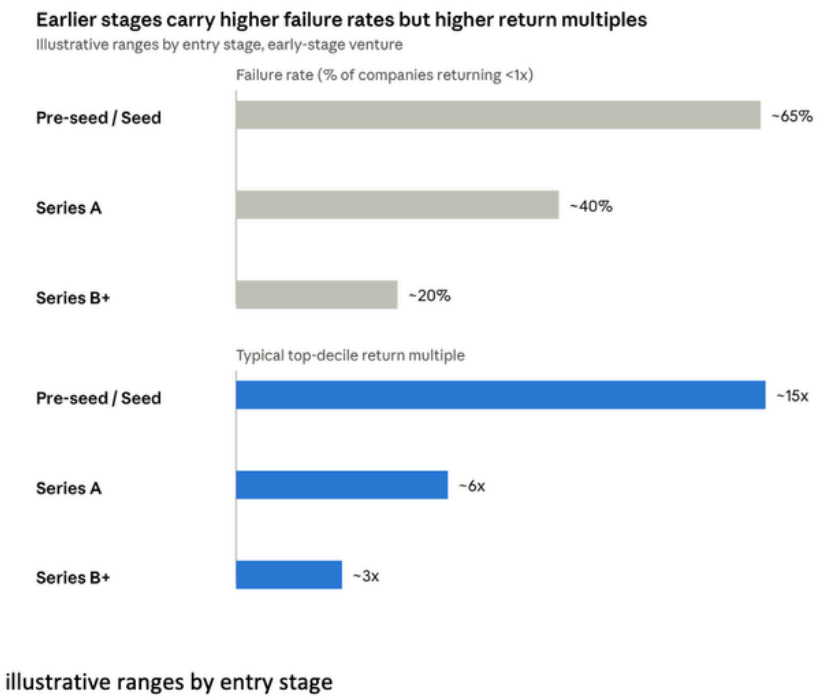
Diversification in venture doesn't reduce volatility the way it does in a public equities portfolio, individual outcomes remain binary and idiosyncratic no matter how many positions you hold. What it does is increase the odds that a portfolio contains at least one power law outcome, and it manages exposure to risks that are correlated within a single stage, sector, or region.

Stage

Pre-seed, seed, Series A, and later stages carry different risk/return profiles:

- **Pre-seed/seed:** highest mortality rate, but the best entry pricing and the most ownership per dollar invested. Return potential is highest in absolute multiple terms, but so is the failure rate.
- **Series A:** product/market fit is partially de-risked, valuations step up, ownership per dollar declines.
- **Later stage (B and beyond)**: company survival is largely de-risked, but entry valuations are much higher and return multiples compress accordingly.

A portfolio concentrated entirely in one stage is making an implicit bet that the stage's specific dynamics hold constant across a full market cycle, for example, that seed valuations stay attractive, or that Series A bridge financing stays available. Most institutional portfolios spread across two or three adjacent stages, sometimes with an explicit later stage anchor position to reduce overall portfolio variance.



This is the core stage trade off: earlier entries fail more often but the survivors return more, which is why most institutional portfolios blend two or three adjacent stages rather than concentrating in one.

Sector

Thematic conviction is valuable, it's often what gives a manager sourcing and evaluation edge, but concentration risk is real. A portfolio built entirely around one theme is exposed to that theme's specific risks: a shift in the underlying technology's economics, a regulatory change, or a single dominant incumbent absorbing most of the category's value. Spreading exposure across a small number of related but distinct frontier categories, for example AI infrastructure, robotics and automation, defense and industrial tech, fintech, and cybersecurity, captures thematic conviction while reducing single category risk. The goal is not to be a generalist with no edge, it's to avoid making the entire portfolio a single bet on one sector's trajectory.

Geography

Most early stage capital and deal flow in North America clusters in a small number of hubs (the Bay Area, New York, Boston, with growing pools in Toronto/Waterloo and a handful of others). Geographic diversification isn't about spreading capital evenly across the world, it's about two things: not being fully dependent on one region's funding cycles, talent pools, and exit markets, and accessing pockets of strong founding talent that are underpriced because they sit outside the primary hubs. A manager with genuine access to founder networks in secondary hubs (university spinouts, corporate alumni networks) can source differentiated deal flow that a hub only strategy misses entirely.

The unifying principle

Diversify along the axes that carry correlated risk (stage specific and sector specific downturns, region specific funding drought), and concentrate along the axis where the manager actually has an edge, usually thesis and sector, since that is what drives differentiated deal access and evaluation quality in the first place.

Chapter 5: Due Diligence: Evaluating Companies and Managers

Diligence in early stage venture is different from diligence in later stage or public investing, there is often no meaningful financial history, and much of what's being evaluated is unresolved risk rather than verifiable performance. That makes the discipline of diligence more important, not less.

Evaluating a company

At minimum, diligence on an individual startup should cover:

- **Team:** Here you are looking for founder market fit, prior execution evidence, relevant educational/work background, and how the team has responded to setbacks so far, not just credentials. Reference checks with former colleagues and earlier investors are worth more than the deck.

- **Market:** Is the total addressable market genuinely large and expanding, or is the deck's TAM slide working backward from the valuation the founders want? Understand whether the market is being created, expanded, or just relabeled.
- **Problem:** Is it important enough that customers will pay for a solution?
- **Product and moat:** What, specifically, makes this defensible over time: proprietary data, technical depth, distribution lock-in, switching costs, regulatory position, versus a feature a well funded competitor or a platform shift could replicate quickly. This is one of the most commonly overstated aspects of a pitch and deserves the most scrutiny; a thin wrapper around a third party model or API is not, by itself, a moat.
- **Traction, calibrated to stage:** Early revenue, retention, LOIs/MOUs, and usage growth are meaningful signals even in small numbers; at pre-revenue stages, look instead at product velocity, quality of early design partners, and evidence of real demand rather than assuming traction where none exists.
- **Competition**: Who are also playing in this space, whether direct or indirect? Why can this company win over them? Who are the private and public comparables and what are the valuations/market caps?
- **Cap table and terms:** Prior round terms, existing investor quality, option pool sizing, and whether the round's structure (SAFE terms, discount, valuation cap, pro-rata rights) is reasonable relative to stage and market comparable. Will this round of capital help them to achieve the necessary milestones to hit the next round?

- **Legal and structural basics:** Clean IP assignment, no unresolved co-founder or cap table disputes, and an entity structure appropriate to the business and its investors.

Evaluating a manager (fund or syndicate)

If you're allocating through a fund or syndicate rather than directly into companies, diligence turn more on the manager, not just the deals:

- **Track record, honestly read:** Distinguish realized returns (DPI: cash actually distributed) from paper markups (TVPI: unrealized value at the last round's price). A manager's headline multiple is often driven by a small number of positions that haven't been realized; ask how much has actually been returned to LPs, not just how the portfolio is currently marked.
- **Portfolio construction discipline:** Does the manager have a stated company count target, a follow-on reserve policy, and clear rules for how much goes into initial checks versus reserves? A manager without answers to these questions is not running a constructed portfolio.
- **Fee and carry structure:** Standard economics are roughly a 2% annual management fee and 20% carried interest, sometimes with a step down over the fund's life.
- **Access and sourcing edge:** Where does differentiated deal flow actually come from, founder networks, syndicate relationships, YC/accelerator access, prior operating experience in the sector? "We see a lot of deals" is not the same as "we see deals others don't."

- **Transparency between updates:** How often and how candidly does the manager communicate, including about underperforming positions, not just the winners. A manager who only surfaces good news is harder to trust on the numbers that matter.
- **Alignment:** Is the manager's own capital in the fund? Is compensation weighted toward carry (aligned with LP outcomes) or toward fees (aligned with AUM growth regardless of outcomes)?

Chapter 6: Key Terms Glossary

Term	Meaning
TVPI (Total Value to Paid-In)	(Distributed value + unrealized/marked value) ÷ capital paid in. A paper multiple, includes unrealized markups, not just cash returned.
DPI (Distributions to Paid-In)	Cash actually distributed ÷ capital paid in. The realized multiple, what LPs have actually received back.
IRR (Internal Rate of Return)	Annualized rate of return accounting for the timing of cash flows. Sensitive to how early distributions occur, not just their size.
MOIC (Multiple on Invested Capital)	Total value returned (realized + unrealized) ÷ capital invested, without an annualized/time component. Often used interchangeably with TVPI at the fund level, or per-position.

GP (General Partner)	The fund manager — makes investment decisions, is legally liable for the fund's conduct, typically earns management fee + carry.
LP (Limited Partner)	An investor in the fund — commits capital, has limited liability, no role in investment decisions.
Carried interest ("carry")	The GP's share of profits above a return threshold, typically 20%, paid only after LPs have received their capital back (and often a hurdle rate).
Management fee	Annual fee (commonly ~2%) paid to the GP to cover operating costs, typically charged on committed capital during the investment period.
Hurdle rate	A minimum return LPs must receive before the GP starts earning carry (common in institutional fund structures; less common in early-stage venture).
Capital call	A request from the GP for LPs to fund a portion of their committed capital, issued as needed to make investments, rather than all up front.
SAFE (Simple Agreement for Future Equity)	A common early-stage instrument that converts to equity at a future priced round, typically with a valuation cap and/or discount.

Valuation cap	The maximum valuation at which a SAFE or convertible note converts to equity, protecting early investors if the next round prices much higher.
Pro-rata rights	The right (not obligation) for an existing investor to invest in a future round to maintain their ownership percentage.
Vintage year	The year a fund began making investments — used to compare fund performance against others deploying capital under similar market conditions.
J-curve	The typical pattern of a fund's net asset value dipping in early years (fees, early write-downs) before rising as portfolio companies mature.
Power law	The return distribution typical of venture portfolios, where a small number of outlier investments drive the large majority of total returns.
GP commit	The GP's own capital invested alongside LPs in the fund, signaling alignment of interest.

Co-investment	An opportunity for LPs to invest directly alongside the fund in a specific deal, typically with no additional fees or carry.
Recycling provision	A fund term allowing early distributions to be reinvested rather than returned to LPs, effectively extending deployable capital.
Clawback	A provision requiring the GP to return excess carried interest if early gains are later offset by losses, ensuring LPs receive their full entitled return over the fund's life.
Distribution waterfall	The order in which fund proceeds are paid out — typically return of capital, then a preferred return to LPs, then carried interest to the GP.
Side letter	A side agreement granting an individual LP terms different from the standard LPA, such as reduced fees or added reporting rights.

Chapter 7: Getting Started: Questions to Ask Before You Commit Capital

Before committing to a fund, syndicate, or SPV, a new LP should be able to answer:

On fit

□ Can this capital be genuinely illiquid for 8 - 10+ years without affecting my financial position?

□ Is this allocation sized as a portion of a diversified portfolio, not a concentrated bet?

□ Do I understand and accept that a majority of individual positions may return nothing?

On the vehicle

□ Am I choosing a fund, an SPV, or a mix, and do I understand why that structure fits what I'm trying to achieve?

□ If SPVs, am I building genuine diversification across them, or accumulating a handful of concentrated, uncorrelated bets?

□ What are the full fees and carry I'm paying?

On the manager

□ What is the manager's realized track record (DPI), not just paper markups (TVPI)?

□ What is the manager's stated portfolio construction approach: company count, check sizing, follow-on reserve policy?

□ What gives this manager differentiated access to deal flow, specifically?

□ How and how often does the manager communicate with LPs, including about underperforming positions?

□ Is the manager's own capital invested alongside LPs?

On diligence

□ For a specific company: what is the actual moat, and would it survive a well funded competitor or a platform shift?

□ For a specific company: is the market size claim credible, or backed into from the valuation?

□ Have reference checks been done beyond what the founders provided?

A new LP doesn't need a confident answer to every question before making a first commitment, but should be able to articulate what isn't yet known, and why the unknowns are acceptable relative to the size of the commitment.

Chapter 8: What to Expect After You Commit

Committing capital isn't the end of the process, it's the start of a set of documents, tax forms, and risks every LP should know to expect.

Documents You'll Sign

- **Subscription Agreement:** Your legal commitment to the fund, including your representations as an accredited investor.
- **Limited Partnership Agreement (LPA):** Governs the fund's economics, GP authority, key person provisions, and LP rights.
- **Private Placement Memorandum (PPM):** Discloses the fund's strategy, risks, fees, and terms. It can also be included within the LPA.
- **Side letters:** Individually negotiated terms some LPs receive (fee breaks, co-investment rights, most favored nation clauses); ask whether any exist and what they cover.

Tax & Reporting

Expect an annual tax form from the fund (a K-1 in the US, or the equivalent in your jurisdiction) reporting your share of income, gains, and losses, these often arrive later than a typical brokerage tax form, which can affect your own filing timeline. Cross border and entity structure questions (UBTI exposure for tax-exempt LPs, QSBS eligibility, or treatment of a Canadian versus US vehicle) are specific to your situation. This guide isn't tax advice, talk to your own tax advisor before committing capital.

Key Risks at a Glance

- **Illiquidity:** capital is locked up for 8-10+ years with no public market to exit early.
- **Concentration:** a single position can be a large share of a small portfolio's outcome.
- **Dilution:** your ownership shrinks in future rounds unless pro-rata rights are exercised.
- **Manager risk:** returns depend heavily on the GP's sourcing, discipline, and decision-making.
- **Total loss:** any individual investment, and in rare cases a fund itself, can return zero.

Final Thoughts

None of this eliminates risk, venture is a high failure rate asset class, even for disciplined investors. What good portfolio construction, thoughtful use of SPVs and funds, deliberate diversification, and real diligence actually do is stack the odds: they widen the number of legitimate shots at a power law outcome, while managing the risks within an investor's control.

If you're evaluating your first commitment to a fund, a syndicate, or a direct deal, the questions in Chapter 7 are a good place to start.

Wishing you the very best in your venture endeavours!

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