Goldman Sachs

Asset Management

Alternatives

THE CASE FOR CO-INVESTMENTS

Q4 2023

KEY TAKEAWAYS

- Co-investments have been a growing part of private equity investing, with potential benefits for both Limited Partners ("LPs" or "Investors") and General Partners ("GPs" or "Managers") that we believe are likely to persist going forward. This report details the advantages that we believe a thoughtful co-investment program can bring to a portfolio and offers insights into how to successfully execute the strategy.
- There are multiple ways to approach building a coinvestment program, each with its own considerations. Implementation of a co-investment program requires a nuanced understanding of the due diligence timeline, closing process and best practices. Investors with the necessary GP relationships and internal resources may be well-positioned to manage their own program; for others, a multi-manager fund solution can provide "turnkey" access to the strategy.
- Research suggests that co-investments can be additive to a private markets portfolio and outperform other private equity strategies, while at the same time achieving less overall dispersion in returns.

WHAT ARE CO-INVESTMENTS?

As private equity continues to mature, co-investments have become an increasingly important—and popular—strategy for investors. Co-investing describes a direct, passive investment into a company in partnership with a Manager. In most cases, co-investors are Limited Partners within that Manager's primary investment fund and are offered the opportunity to co-invest based on that relationship. Executing on co-investments can take many forms including direct standalone investments via SPVs offered by Managers, dedicated sidecar vehicles raised alongside a GP's primary fund (which we refer to as single-GP co-investment funds), or through third-party funds raised by dedicated co-investment Managers to invest into opportunities alongside several primary GPs (which we refer to as multi-manager co-investment funds).

The trend towards co-investing is clear and has accelerated, with annual capital raised to pursue the strategy surging from less than \$10 billion a decade ago to more than \$30 billion in recent years. Much of the expansion has come from single-GP funds. Multi-manager funds too have seen an increase in fundraising, but the co-investment space remains highly concentrated; roughly 10 multi-manager funds have closed annually over the last decade, and the median fund size has risen about 5x during that time. While co-investment AUM has roughly tripled over the last five years and now sits at approximately \$240 billion, the market remains small compared to the broader private equity industry of more than \$9 trillion, leaving significant room for

further expansion. Additionally, nearly two-thirds of LPs have no exposure to co-investments, and the strategy has both the highest proportion of LPs currently under-allocated as well as the highest proportion likely to increase allocations over the next 2-3 years.²

THE POTENTIAL BENEFITS OF CO-INVESTING

For many Investors, co-investments may provide the potential for enhanced returns through a more fee-efficient form of private equity investing. Co-investments are typically offered on a fee- and carryfree basis, reducing the overall fee drag and thus enhancing net returns, assuming the investments perform as expected. This points to potentially better risk-adjusted returns for the asset class, and a potential way for Investors to measurably increase the returns of their overall private market portfolio. We discuss performance in further detail in the Co-Investment Performance Analysis section of this article.

Co-investments can also provide Investors with an opportunity for more-targeted portfolio construction in their private equity portfolio. For Investors with a strong network of GP relationships, co-investments allow for the opportunity to see a wide range of deals across sectors, geographies, transaction types, and company characteristics, giving them the chance to fine-tune their exposures and meet investment objectives in a more discretionary manner outside a typical primary fund structure. In addition, an Investor's capital is usually called upfront to fund the investment, allowing for quicker capital deployment thus mitigating the J-Curve.3

Additionally, co-investments can be an excellent way for Investors to strengthen their relationships with high-conviction Managers. LPs who are able to efficiently underwrite co-investments, clearly communicate their investment objectives to their GPs, and, in some cases, provide value-add insights or resources to a given investment thesis may find themselves with preferred access to co-investment deal flow, improved access to the Manager's funds, and more granular insight into the Manager's due diligence process and overall capabilities. These insights can give LPs a better understanding of each Manager's distinct competitive differentiation in the marketplace.

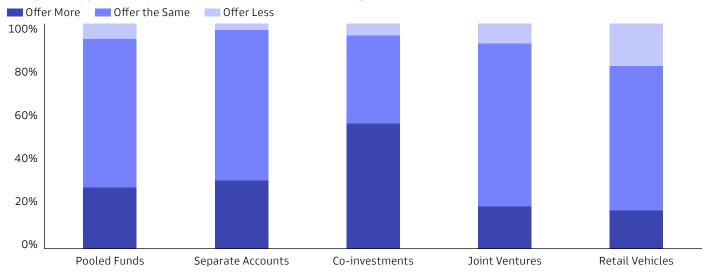
GPs

There are several important benefits of offering co-investments from the GP's perspective as well, including the opportunity to build stronger relationships with LPs—potentially improving the odds of a successful future fundraise—and expanded access to capital in a competitive deal environment without partnering with an opposing Manager or being forced to share governance. Particularly during more difficult fundraising environments or tight debt markets, GPs often turn to trusted LP co-investors to elongate remaining available fund capital or efficiently fund the equity portion of transactions.

Additionally, many Investors—particularly those with large private equity programs—continue to focus on "right-sizing" their portfolios by focusing on fewer but larger commitments to "core" Managers while de-emphasizing others to optimize performance and reduce

Most Managers Surveyed Report They Are Planning to Increase Co-Investment Offerings





Source: Preqin Fund Manager Survey, 2023

the administrative burden of portfolio management. A GP's ability to offer attractive co-investment opportunities is becoming an important factor in the LP decision-making process, as Investors determine which Managers will receive primary commitments in a highly competitive fundraising environment.

The results are clear. As Managers become more aware of the benefits of co-investing, they have shown a greater focus on the strategy. Surveys have indicated that nearly 90% of respondents planned to offer co-investments to LPs, and more than half are planning to increase their offerings of co-investments in the future.4

BUILDING A CO-INVESTMENT PROGRAM

Investors seeking access to co-investments have several options, including standalone programs managed in-house, commingled coinvestment funds in the form of single-GP or multi-manager funds, and separately managed accounts. Investors must consider the nuances of each to determine the correct approach to meet their objectives.

Self-Managed Programs

Large-scale Investors with sufficient resources may choose to manage a standalone co-investment program directly. Most Managers offer co-investments on a "deal by deal" basis to potential investors which, in turn, requires co-investors to have a dedicated team to assess the merits of an opportunity and overall fit with their co-investment program. An established co-investment program could see hundreds of co-investment opportunities annually, which necessitates an established internal investment process to assist in deal selection.

A self-managed program gives the Investor the discretion to construct a portfolio tailored to their exact objectives and can eliminate additional layers of fees or carried interest that might come with an externally managed solution. A standalone program also provides more direct access to Managers, potentially improving the flow of information and allowing LPs a closer look at each GP's respective strengths and weaknesses. However, these programs are labor- and resource-intensive, typically requiring a broad and deep network of GP relationships, as well as a team with the skill and experience to underwrite deal opportunities on tight deadlines and the back-office infrastructure necessary to monitor and manage the portfolio.

Single-GP Co-Investment Funds

Managers are increasingly offering co-investments in the form of "opportunity funds" raised in conjunction with their primary fund investment vehicle. These funds require LPs to commit unfunded capital to a blind pool, similar to the underlying fund commitment, with Investors receiving additional exposure to one or more assets that are too large for the main fund to execute on by itself. A primary benefit of these vehicles is that they typically come with no or lower management fees (often charged on invested capital only) and a reduce rate of carried interest.

These single-GP funds require substantially fewer resources from Investors than a self-managed co-investment program, as the initial diligence is largely the same as for the primary fund and Investors have no discretion over co-investment decisions. This approach can be an effective way to lower the all-in fees paid to that Manager, but it does not allow for discretion or any of the other benefits of building a bespoke co-investment program.

Multi-Manager Co-Investment Funds

For many Investors, a multi-manager co-investment fund can serve as a "turnkey" solution, offering access to a diversified portfolio of co-investments that leverages the experience and capabilities of a third-party dedicated fund manager (or "Provider"). We believe multi-manager co-investment funds can offer several benefits to LPs seeking to build a co-investment program.

First, co-investment funds usually have a more favorable fee structure than a primary private equity fund allowing for Investors to capture a portion of the fee benefit of co-investments. Not only are headline rates typically lower, but management fees are often charged on invested rather than committed capital (as is typically the case in primary funds), reducing fee drag and mitigating the J-Curve.

Another benefit of multi-manager co-investment funds is the potential for added diversification beyond that of a typical primary private equity fund or single-GP co-investment fund commitment. A multi-manager co-investment fund can offer diversification across vintage years, strategies, geographies, sectors, and Managers, giving LPs the opportunity to access what could be the best opportunities from what multiple GPs have to offer. Many of these benefits are analogous to private equity fund-of-funds products, but multimanager co-investment funds have historically outperformed fundof-funds due to the additional benefits of reduced fees and more concentrated portfolios.

Accessing co-investments through multi-manager funds also mitigates the risk of LPs going direct without the relationships necessary to drive sufficient deal flow, which may inadvertently result in a portfolio that is both more concentrated and more correlated with periods of increased deal activity (and potentially higher entry valuations). Multi-manager co-investment funds leverage the deal flow of the Provider, which may give access to a broader array of Manager relationships and allow for consistent, high-quality deal flow with disciplined investment pacing to mitigate these risks.

Investors in multi-manager co-investment funds do sacrifice certain benefits of self-managed programs, including working directly with GPs to fully customize their portfolio, relying instead on the Provider to construct a well-diversified portfolio. Investors also have less control over capital deployment, as the Provider dictates the timing of investments and capital calls. Investors can mitigate these considerations by actively working with the Provider to understand their approach to portfolio construction and investment pacing.

Separately Managed Accounts ("SMAs")

For investors who have bespoke investment objectives and can commit capital in size, but lack the infrastructure necessary to self-manage a program, a dedicated multi-manager co-investment fund managed by a Provider for the benefit of a single Investor (an "SMA") can be an attractive solution. SMAs give Investors the chance to fine tune their co-investment portfolio by agreeing upfront with the Provider on certain investment restrictions or portfolio exposures. Not only can investors specify certain investment restrictions in advance, but they may also be given veto rights over which deals end up in their account.

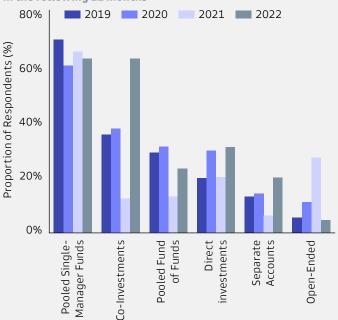
Also, SMAs may allow Investors to potentially negotiate favorable fee structures; however, this typically requires a certain level of scale to make the arrangement viable for the Provider, as well as amortize the costs of managing an SMA over a larger capital base.

STRUCTURE AND PROCESSES

Efficiency and experience are paramount in any co-investment process. Co-investments are typically offered in two forms: "co-

Limited Partners Are Increasingly Seeking Co-Investment Structures

Private equity investment structures targeted by investors in the following 12 months



Source: Preqin Investor Survey, November 2019–2022

Given the benefits, co-investments are one of the most highly targeted private equity structures by LPs, with over 65% actively seeking exposure, matched only by pooled single-manager funds.5

sponsored" transactions where co-investors conduct due diligence and commit alongside of a Manager ahead of a bid or signing, and "syndicated" deals where the Manager has secured the transaction and looks to transfer a portion of their exposure to co-investors. The capabilities needed by co-investors differ for each, with cosponsored deals requiring nimbleness and the ability to conduct diligence as information comes in real time, while syndicated deals are more structured processes with defined timelines. Co-sponsoring may also require binding commitment letters at signing, or funding in-line with the underlying deal closing, requiring additional agility and reliability on behalf of the co-investor.

A co-investment due diligence process typically spans a 3–6-week period, with syndicated deals tending to be in the shorter end of the range, and co-sponsoring transactions tending to be longer. Cosponsored situations may also include periods of potentially greater intensity, especially around signing of a binding agreement or when the Manager looks to pre-empt a structured sales process. In most deals, co-investors will initially be given access to deal-level due diligence materials including confidential information memoranda, projection models, and other company-level information available in the form of a data room. Co-investors will also typically review the Investment Committee materials or other overview materials made available by the Manager, as well as any third-party work commissioned such as commercial, financial, legal, information technology, environmental, and Quality of Earnings due diligence

CO-INVESTMENTS VS. CONTINUATION FUNDS

Continuation vehicles (CV) are a developing part of the private equity market for certain assets. While usually involving a single company, similar to a co-investment, this is a separate and distinct market with several key differences. A CV is typically formed by the Manager to provide liquidity to existing LPs while at the same time allowing the Manager to maintain control of the asset, often providing it with additional runway for its next stage of development. These transactions are considered secondary in nature, as the CV is purchasing interests from fund-level LPs. Investors in CVs are often Secondary Investors who pay fees and carry to the Manager leading the vehicle and are often also expected to commit to a substantial amount of unfunded capital that is drawn over the life of the investment. CVs where a Manager is re-investing in the asset via a new fund or bringing in another direct private equity sponsor to price the transaction, rather than relying solely on secondary market participants, can often look like a "promoted co-investment" that otherwise could have been completed with traditional co-investment capital.

reports. Co-investors will hold diligence sessions with the Manager to better understand the investment thesis, value creation plan and risks of an investment, and may also meet company management directly. All of this is usually supplemented with additional standalone diligence by the co-investor. During any process, it is important for co-investors to quickly home in on the most critical due diligence areas of a given deal, to be efficient with the time and resources of the Manager.

Co-Sponsoring Considerations

Co-sponsored transactions typically enable co-investors to receive larger allocations and to participate in opportunities that may not otherwise receive broader syndication process. In these situations, it is important to note that Managers will sometimes treat co-investors as true joint partners in a bid and may require co-sponsors to assume their pro rata share of legal and other expenses in broken deals to the extent the Manager is not successful in their pursuit of the asset. It is also customary for co-investors to receive their share of any transaction fees that are paid to the Manager at closing, as co-investors who are bearing downside risk should also participate in the upside. Co-investors may also be asked to take on a pro rata portion of break fees but should ideally only do so to the extent they are the cause of the deal falling apart, not an action instigated by the Manager.

Documentation and Structure

Once a co-investor has agreed to participate in a transaction, the equity consortium will proceed to co-investor documentation often in tandem with the underlying deal. Most co-investments are structured as a special purpose vehicle (SPV) that is managed by the Manager, and where co-investors are Limited Partners. This structure allows co-investors to receive exposure to the company while continuing to benefit from limited liability and avoiding being directly on the cap table of the company. GPs can also use the SPV to efficiently consolidate co-investors in a single entity and to control the exit separately from their main fund investment.

Most co-investment Limited Partnership Agreements (LPAs) are largely standardized, with terms that have been widely accepted by the marketplace. Co-investors generally always want to be on the same footing as the Manager, both during the holding period and when exiting the position. For co-investors, the most critical element therefore is to ensure there are equal exit rights, most notably in

the form of "tag" rights, which allow co-investors to piggy-back on any sale by the Manager's fund-level position and exit in lockstep, and "drag' rights," which reciprocally allow the Manager to force co-investors to exit on the same terms, allowing for a more complete sale to a new owner. Similarly, if there are follow-on opportunities, co-investors want the ability to participate pro rata via pre-emptive rights to prevent dilution by new capital. Participation in follow-ons is often at the discretion of the co-investor but can also be at the Manager's discretion, to the extent the Manager has asked co-investors to set aside binding reserves at the time of closing.

Co-investors will also be asked to cover customary fees in setting up the co-investment vehicle, as well as ongoing expenses for vehicle maintenance and partnership activities. Often, GPs allow for side letters with co-investors to address specific requirements around tax, reporting, or other bespoke terms that may not be applicable to the broader investor group.

BEST PRACTICES

When pursing co-investments, certain best practices may be worth bearing in mind, with a particular focus on alignment with the Manager as well as governance rights. Co-investors will typically prefer to source investment opportunities from Managers with whom they have a relationship, oftentimes as an existing LP in the Manager's current fund. This approach can offer several advantages, including familiarity with the Manager's strengths and weaknesses, organizational stability, and prior track record. However, depending on the robustness of one's deal flow from "on platform" Managers, partnering with "off-platform" or fund-less Managers is also an option. Opportunities from this channel may provide co-investors with access to strategies which they currently do not have exposure. For example, fund-less Managers often pursue companies with smaller enterprise values and display a certain nimbleness and creativity as they look to source investment opportunities without the benefit of committed capital.

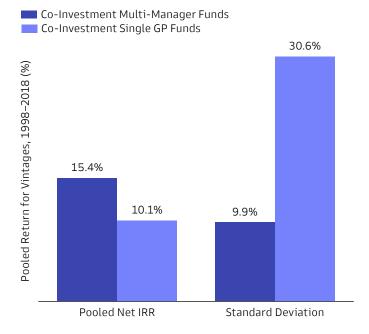
An opportunity offered to co-investors should be a meaningful position in a Manager's fund. In other words, the Manager should retain exposure to the investment that is either consistent with, or greater than, their typical "average hold" (measured as a percentage of total fund commitments). This can be important to signal the GP's conviction in the transaction, rather than a desire to offload risk to other parties. In the case of partnering with a fund-less Manager, we

would advise insisting that the Manager makes a meaningful cash commitment to the investment, rather than rolling a transaction fee into the transaction in lieu of such hard currency investment. The definition of "meaningful" is difficult to standardize as it will depend on individual circumstances; however, the GP commitment should represent a sizable portion of a GP's liquid net-worth to ensure that walking away from a difficult investment is financially significant.

Similarly, we believe it is crucial that management teams are aligned with investors. In the case of primary buyouts where new management may be coming into a company or a founder may be selling for the first time, this is generally in the form of a cash commitment to the target company, while in the case of a secondary buyout where the existing management may stay with a new sponsor, management teams often roll-over a large portion of their exit proceeds. Again, the appropriate size will depend on the situation, but market norms are anchored around 50% of the post-tax pay-out.

To the extent the investment strategy foresees potential capital outlays to fund future add-on acquisitions or, alternatively, the investment underperforms and requires a capital injection to solve liquidity or capital structure issues, it is also important that both the Manager and the co-investor(s) set aside sufficient capital reserves. This avoids awkward or potentially contentious valuation debates at the time of the follow-on investment. Along the same lines, we recommend that co-investors invest at the same time and same valuation as the GP, rather than invest at a different point when the investment has already been marked up. This ensures alignment and avoids difficult initial valuation discussions or situations down the line, where a GP may decide to exit, having reached their targeted return, while co-investors achieve lower returns on their invested capital having invested at a higher price point.

Multi-Manager Co-Investment Funds Have Generated Superior Performance to Single-GP Co-Investment Funds



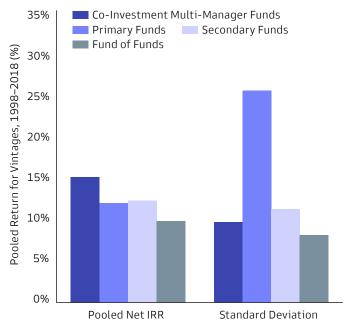
Source: Goldman Sachs Asset Management, Pregin. As of Q1 2023.

As previously noted, when negotiating co-invest LPAs with sponsors, we advise co-investors to be particularly focused on alignment when it comes to follow-on offerings and exit rights. Co-investors should negotiate the right to walk in lockstep with the Manager without exception. In practice, that means being offered follow-on rights, including anti-dilution provisions, as well as pro-rata liquidity and tag-along rights, whether in partial exits or full realizations. Having negotiated a fair LPA—as well as having a deep, often personal relationship with the sponsoring GP—should also negate the necessity for co-investors to ask for a Board or Observer seat on a target company's Board of Directors. We generally believe that Board of Directors should be populated with industry or leadership experts who are best suited to drive forward the stated value creation plan, and that strong sponsor/co-investor alignment is one of the best tools to protect one's interests.

CO-INVESTMENT FUND PERFORMANCE **ANALYSIS**

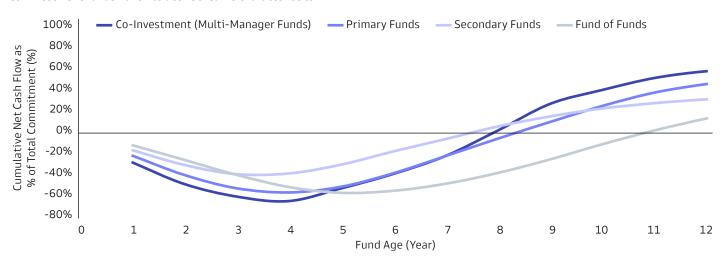
When assessing co-investment fund performance, it is important to differentiate between single-GP opportunity funds and multimanger co-investment funds. Our analysis centers on multi-manager co-investment funds, which are examined against the full universe of primary and secondary private equity strategies (i.e., buyout, growth, and venture). We focus on multi-manager co-investment funds for several reasons, but the primary factor is that single-GP co-investment funds lack many aspects of diversification that are typically found in multi-manager co-investment funds, which can select the best opportunities from across a range of GPs to help achieve diversification across various factors including geography, industry, and enterprise value. As a result, multi-manager co-

Co-Investment Funds Have Generated Higher Returns with Lower **Dispersion Than Other Types of Private Equity Funds**



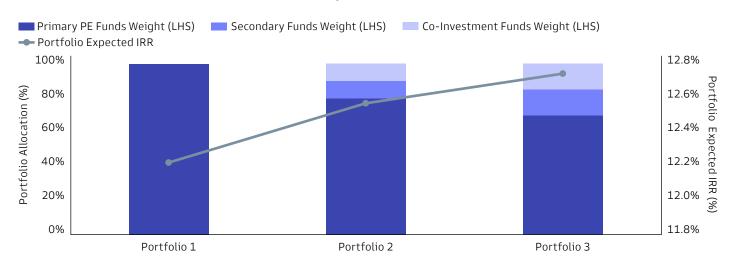
Source: Goldman Sachs Asset Management, Cambridge Associates, Pregin. As of Q1 2023.

Co-Investment Funds Have Attractive J-Curve Characteristics



Source: Goldman Sachs Asset Management, Cambridge Associates, Preqin. As of Q1 2023.

Incremental Allocations to Co-Investment Funds Can Enhance Expected Returns



Source: Goldman Sachs Asset Management, Cambridge Associates, Pregin. As of Q1 2023.

investment funds in aggregate have generated superior returns with significantly less variance than single-GP co-investment funds.

Compared to primary, secondary, and fund-of-funds private equity strategies, multi-manager co-investment funds in aggregate have also outperformed for the 20 vintage years from 1998 to 2018, with much lower dispersion in returns. As noted, part of the superior performance of co-investment funds stems from their lower cost structure, with management fees about half those of primary funds and often charged on invested (rather than committed) capital. Carry (i.e., performance fee) is also often several hundred basis points lower, but that is not the whole story. While a common critique of co-investments is that they are susceptible to negative screening with GPs potentially offering co-investment for sub-par opportunities, the loss ratio (measured as the proportion of funds with a TVPI<1) is less than 5% for co-investment funds, compared to ~10% for buyout funds which would argue against that presumption.7

Another important factor driving outperformance is the attractive J-curve characteristics of co-investment funds. While they have the steepest drawdown of multi-manager private fund strategies, cumulative net cash flows quickly catch up to primary funds and reach the breakeven point faster. Furthermore, co-investment funds break even just a couple guarters slower than secondary funds while generating a higher overall return on capital over the full fund cycle.

While co-investment funds have several favorable features, it is not realistic for Investors to build an entire private market portfolio solely of co-investments, as the universe of multi-manager funds is limited and direct co-invest opportunities are often predicated on a primary fund commitment. Rather, Investors are likely to begin with an allocation comprising mostly primary fund commitments, then build an allocation to co-investments over time. We have found that this evolution often accompanies an allocation to secondaries. As can be deduced based on strategy-level performance, incremental increases to both co-investment and secondary strategies result

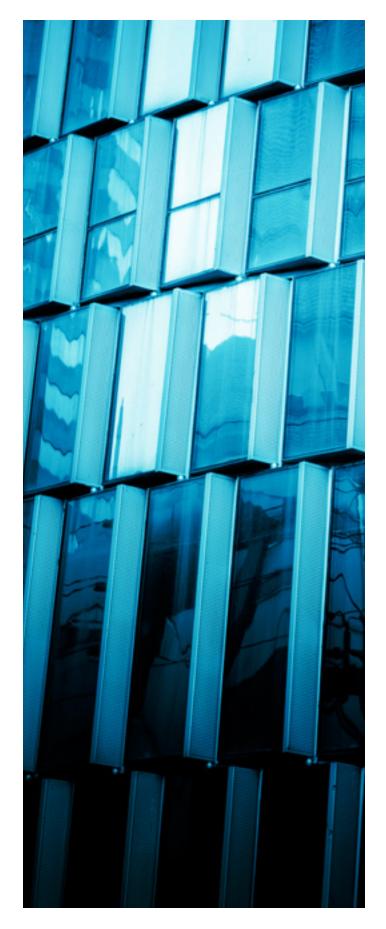
in improved overall performance with lower variance, along with what many LPs would perceive to be an attractive cashflow profile. Co-investments can therefore be an effective tool in a private equity portfolio, potentially helping to bolster returns while not significantly adding risk to the portfolio.

CONCLUSION

The market for private equity co-investments continues to expand, and we believe the strategy is beneficial for Investors and Managers alike. Co-investments offer benefits to LPs in the form of lower fees, enhanced portfolio attributes, and attractive risk-adjusted returns, while also being a valuable tool to Managers as they seek broader access to friendly and flexible capital. As the market for private equity has evolved, so have the access points for potential investors, with a multitude of options to meet each Investor's individual objectives. In all cases, working with experienced external providers or investing into internal resources to develop an experienced and stable team will be critical to the success of the program. Overall, co-investments have exhibited attractive risk/return characteristics and will continue to be a growing part of the private equity ecosystem going forward.

Sources:

- Preqin. As of August 2023.
- 2023 Goldman Sachs Asset Management Alts Survey.
- The performance J-Curve refers to the negative performance typically seen by an investor in the early years of a private equity fund commitment because management fees and expenses often represent a relatively high percentage of the initial total capital called from investors as investments must be identified, diligenced, and negotiated. This effect is mitigated as additional investments are made and commitments are more fully invested, and any gains from investments are reflected in net asset values.
- Preqin Fund Manager Survey, 2020 and 2023.
- Pregin Investor Survey, 2022
- "Tag" and "drag" rights refer to contractual obligations that give rights to the minority and majority shareholders, respectively. "Tag-along rights" are pre-negotiated rights that allow minority shareholders to sell their stake if a majority shareholder is negotiating a sale for their stake. "Drag-along rights" are exit rights that give majority shareholders the right to force minority shareholders to accept the terms of a deal being negotiated by majority shareholders.
- Goldman Sachs Asset Management, Pregin, Cambridge Associates.



DISCLOSURES

This information discusses general market activity, industry or sector trends, or other broad-based economic, market or political conditions and should not be construed as research or investment advice. This material has been prepared by Goldman Sachs Asset Management and is not financial research nor a product of Goldman Sachs Global Investment Research (GIR). It was not prepared in compliance with applicable provisions of law designed to promote the independence of financial analysis and is not subject to a prohibition on trading following the distribution of financial research. The views and opinions expressed may differ from those of GIR or other departments or divisions of Goldman Sachs and its affiliates. Investors are urged to consult with their financial advisors before buying or selling any securities. This information may not be current and Goldman Sachs Asset Management has no obligation to provide any updates or changes.

Diversification does not protect an investor from market risk and does not ensure a profit.

Confidentiality

No part of this material may, without Goldman Sachs Asset Management's prior written consent, be (i) copied, photocopied or duplicated in any form, by any means, or (ii) distributed to any person that is not an employee, officer, director, or authorized agent of the recipient.

THIS MATERIAL DOES NOT CONSTITUTE AN OFFER OR SOLICITATION IN ANY JURISDICTION WHERE OR TO ANY PERSON TO WHOM IT WOULD BE UNAUTHORIZED OR UNLAWFUL TO DO SO.

Prospective investors should inform themselves as to any applicable legal requirements and taxation and exchange control regulations in the countries of their citizenship, residence or domicile which might be relevant.

This material is provided for informational purposes only and should not be construed as investment advice or an offer or solicitation to buy or sell securities. This material is not intended to be used as a general guide to investing, or as a source of any specific investment recommendations, and makes no implied or express recommendations concerning the manner in which any client's account should or would be handled, as appropriate investment strategies depend upon the client's investment objectives.

Although certain information has been obtained from sources believed to be reliable, we do not guarantee its accuracy, completeness or fairness. We have relied upon and assumed without independent verification, the accuracy and completeness of all information available from public sources.

Views and opinions expressed are for informational purposes only and do not constitute a recommendation by Goldman Sachs Asset Management to buy, sell, or hold any security. Views and opinions are current as of the date of this presentation and may be subject to change, they should not be construed as investment advice.

Environmental, Social, and Governance ("ESG") strategies may take risks or eliminate exposures found in other strategies or broad market benchmarks that may cause performance to diverge from the performance of these other strategies or market benchmarks. ESG strategies will be subject to the risks associated with their underlying investments' asset classes. Further, the demand within certain markets or sectors that an ESG strategy targets may not develop as forecasted or may develop more slowly than anticipated. Asia excluding Japan: Please note that neither Goldman Sachs Asset Management (Hong Kong) Limited ("GSAMHK") or Goldman Sachs Asset Management (Singapore) Pte. Ltd. (Company Number: 201329851H) ("GSAMS") nor any other entities involved in the Goldman Sachs Asset Management business that provide this material and information maintain any licenses, authorizations or registrations in Asia (other than Japan), except that it conducts businesses (subject to applicable local regulations) in and from the following jurisdictions: Hong Kong, Singapore, Malaysia, India and China. This material has been issued for use in or from Hong Kong by Goldman Sachs Asset Management (Hong Kong) Limited, in or from Singapore by Goldman Sachs Asset Management (Singapore) Pte. Ltd. (Company Number: 201329851H) and in or from Malaysia by Goldman Sachs (Malaysia) Sdn Berhad (880767W).

Australia: This material is distributed by Goldman Sachs Asset Management Australia Pty Ltd ABN 41 006 099 681, AFSL 228948 ('GSAMA') and is intended for viewing only by wholesale clients for the purposes of section 761G of the Corporations Act 2001 (Cth). This document may not be distributed to retail clients in Australia (as that term is defined in the Corporations Act 2001 (Cth)) or to the general public. This document may not be reproduced or distributed to any person without the prior consent of GSAMA. To the extent that this document contains any statement which may be considered to be financial product advice in Australia under the Corporations Act 2001 (Cth), that advice is intended to be given to the intended recipient of this document only, being a wholesale client for the purposes of the Corporations Act 2001 (Cth). Any advice provided in this document is provided by either of the following entities. They are exempt from the requirement to hold an Australian financial services licence under the Corporations Act of Australia and therefore do not hold any Australian Financial Services Licences, and are regulated under their respective laws applicable to their jurisdictions, which differ from Australian laws. Any financial services given to any person by these entities by distributing this document in Australia are provided to such persons pursuant to the respective ASIC Class Orders and ASIC Instrument mentioned below.

- Goldman Sachs Asset Management, LP (GSAMLP), Goldman Sachs & Co. LLC (GSCo), pursuant ASIC Class Order 03/1100; regulated by the US Securities and Exchange Commission under US laws.
- Goldman Sachs Asset Management International (GSAMI), Goldman Sachs International (GSI), pursuant to ASIC Class Order 03/1099; regulated by the Financial Conduct Authority; GSI is also authorized by the Prudential Regulation Authority, and both entities are under UK laws.
- Goldman Sachs Asset Management (Singapore) Pte. Ltd. (GSAMS), pursuant to ASIC Class Order 03/1102; regulated by the Monetary Authority of Singapore under Singaporean laws
- Goldman Sachs Asset Management (Hong Kong) Limited (GSAMHK), pursuant to ASIC Class Order 03/1103 and Goldman Sachs (Asia) LLC (GSALLC), pursuant to ASIC Instrument 04/0250; regulated by the Securities and Futures Commission of Hong Kong under Hong Kong laws

No offer to acquire any interest in a fund or a financial product is being made to you in this document. If the interests or financial products do become available in the future, the offer may be arranged by GSAMA in accordance with section 911A(2)(b) of the Corporations Act. GSAMA holds Australian Financial Services Licence No. 228948. Any offer will only be made in circumstances where

DISCLOSURES

disclosure is not required under Part 6D.2 of the Corporations Act or a product disclosure statement is not required to be given under Part 7.9 of the Corporations Act (as relevant).

Brunei: The attached information has been provided at your request for informational purposes only and is not intended as a solicitation in respect of the purchase or sale of instruments or securities (including funds) or the provision of services. Neither Goldman Sachs Asset Management (Singapore) Pte. Ltd. nor any of its affiliates is licensed as a dealer or investment advisor under the Securities Order of Brunei. The information has been provided to you solely for your own purposes and must not be copied or redistributed to any person without the prior consent of Goldman Sachs Asset Management.

Cambodia: The attached information has been provided at your request for informational purposes only and is not intended as a solicitation in respect of the purchase or sale of instruments or securities (including funds) or the provision of services. Neither Goldman Sachs Asset Management (Singapore) Pte. Ltd. nor any of its affiliates is licensed as a dealer or investment advisor under The Securities and Exchange Commission of Cambodia. The information has been provided to you solely for your own purposes and must not be copied or redistributed to any person without the prior consent of Goldman Sachs Asset Management.

Canada: This document has been communicated in Canada by GSAM LP, which is registered as a portfolio manager under securities legislation in all provinces of Canada and as a commodity trading manager under the commodity futures legislation of Ontario and as a derivatives adviser under the derivatives legislation of Quebec. GSAM LP is not registered to provide investment advisory or portfolio management services in respect of exchange-traded futures or options contracts in Manitoba and is not offering to provide such investment advisory or portfolio management services in Manitoba by delivery of this material.

East Timor: The attached information has been provided at your request for informational purposes only and is not intended as a solicitation in respect of the purchase or sale of instruments or securities (including funds), or the provision of services. Neither Goldman Sachs Asset Management (Singapore) Pte. Ltd. nor any of its affiliates is licensed under any laws or regulations of Timor-Leste. The information has been provided to you solely for your own purposes and must not be copied or redistributed to any person or institution without the prior consent of Goldman Sachs Asset Management.

European Economic Area (EEA): This material is a financial promotion disseminated by Goldman Sachs Bank Europe SE, including through its authorised branches ("GSBE"). GSBE is a credit institution incorporated in Germany and, within the Single Supervisory Mechanism established between those Member States of the European Union whose official currency is the Euro, subject to direct prudential supervision by the European Central Bank and in other respects supervised by German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufischt, BaFin) and Deutsche Bundesbank

Japan: This material has been issued or approved in Japan for the use of professional investors defined in Article 2 paragraph (31) of the Financial Instruments and Exchange Law by Goldman Sachs Asset Management Co., Ltd.

New Zealand: This material is distributed in Australia and New Zealand by Goldman Sachs Asset Management Australia Pty Ltd ABN 41 006 099 681, AFSL 228948 ('GSAMA') and is intended for viewing only by wholesale clients in Australia for the purposes of section 761G of the Corporations Act 2001 (Cth) and to clients who either fall within any or all of the categories of investors set out in section 3(2) or sub-section 5(2CC) of the Securities Act 1978, fall within the definition of a wholesale client for the purposes of the Financial Service Providers (Registration and Dispute Resolution) Act 2008 (FSPA) and the Financial Advisers Act 2008 (FAA), and fall within the definition of a wholesale investor under one of clause 37, clause 38, clause 39 or clause 40 of Schedule 1 of the Financial Markets Conduct Act 2013 (FMCA) of New Zealand (collectively, a "NZ Wholesale Investor"). GSAMA is not a registered financial service provider under the FSPA. GSAMA does not have a place of business in New Zealand. In New Zealand, this document, and any access to it, is intended only for a person who has first satisfied GSAMA that the person is a NZ Wholesale Investor. This document is intended for viewing only by the intended recipient. This document may not be reproduced or distributed to any person in whole or in part without the prior written consent of GSAMA.

Switzerland: For Qualified Investor use only – Not for distribution to general public. This is marketing material. This document is provided to you by Goldman Sachs Bank AG, Zürich. Any future contractual relationships will be entered into with affiliates of Goldman Sachs Bank AG, which are domiciled outside of Switzerland. We would like to remind you that foreign (Non-Swiss) legal and regulatory systems may not provide the same level of protection in relation to client confidentiality and data protection as offered to you by Swiss law.

Taiwan: This material is provided at your request for informational purposes only and does not constitute a solicitation in any jurisdiction in which such a solicitation is unlawful or to any person to whom it is unlawful. Not all services or products can be made available in Taiwan. The Goldman Sachs companies involved in any such activities do not maintain any licenses, authorisations or registrations in Taiwan. The services described herein may not be offered to Taiwan resident investors unless they are made available in and from a jurisdiction outside Taiwan.

United Arab Emirates: This document has not been approved by or filed with the Central Bank of the United Arab Emirates or the Securities and Commodities Authority. If you do not understand the contents of this document, you should consult with a financial advisor.

United Kingdom: In the United Kingdom, this material is a financial promotion and has been approved by Goldman Sachs Asset Management International, which is authorized and regulated in the United Kingdom by the Financial Conduct Authority.

© 2023 Goldman Sachs. All rights reserved. SEAL ID: 410898 337891-OTU-1891557