CFA Institute®
CFA Program

PRIVATE MARKETS PATHWAY

CFA® Program Curriculum
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CONTENTS

How to Use the CFA Program Curriculum **v**

CFA Institute Learning Ecosystem (LES) v
Designing Your Personal Study Program v
Errata vi
Other Feedback vi

Private Markets Pathway

Learning Module 1 **Private Investments and Structures** **3**
Introduction 3
Features of Private and Public Investments and Markets 4
Asset Prices and Performance Measurement 6
Liquidity and Investment Process 6
Manager Skills 7
Portfolio Diversification Potential 9
Private vs. Public Investment Structures 12
Private Investment Methods 13
Direct Investment 13
Indirect Investment 14
Private Investment Structures 15
Private vs. Public Investments and Return Metrics 19
Public vs. Private Market Performance 20
Cash Flow and J-Curve Effects in Private Market Portfolios 24
Private Market Fund Multiples 28
Private vs. Public Risk and Return 32
Effects of Private Market Features on Risk and Return 33
Risk and Return across Asset Classes 34
Asset Allocation with Private Markets 36
Practice Problems *39*
Solutions *43*

Learning Module 2 **General Partner and Investor Perspectives and the Investment Process** **45**
Introduction 45
General Partner Roles and Responsibilities 47
Pre-Commitment 48
Capital Commitment 48
Capital Deployment 49
Capital Distribution and Exit 51
Investor (LP) Perspectives, Fees and Performance Measurement 53
Management Fees 53
Carried Interest 55
Private Investment Selection and Value Creation 64
Due Diligence and Strategy Execution 71
Company Due Diligence and Business Plans 71

	Project Due Diligence	74
	LP Due Diligence	75
	Private Investment Exit Strategies	78
	Public Sale	79
	Private Sale	80
	Liquidation	82
	Practice Problems	*84*
	Solutions	*88*
Learning Module 3	**Private Equity**	**91**
	Introduction	91
	Private Equity Strategies	92
	Venture Capital and Growth Equity	97
	Venture Capital	97
	Growth Equity	101
	Buyout Equity	105
	Private Equity Valuation	111
	Venture Capital and the VC Method	111
	Valuing Growth Equity	118
	Use of the LBO Model to Establish Buyout Firm Value	123
	Private Equity Risk and Return	135
	Practice Problems	*141*
	Solutions	*145*
Learning Module 4	**Private Debt**	**149**
	Introduction	149
	Private Debt Strategies	150
	Venture Debt	151
	Mezzanine Debt	153
	Convertible Debt	153
	Leveraged Loans	153
	High-Yield Bonds	154
	Direct Lending	155
	Project-Related Debt (Real Estate and Infrastructure)	156
	Distressed Debt	157
	Leveraged Loans, High Yield, and Convertible Bonds	159
	Leveraged Loans	160
	High-Yield Bonds	164
	Convertible Bonds	174
	Mezzanine and Unitranche Debt	179
	Mezzanine Debt	180
	Unitranche Debt	183
	Private Debt Profiles and Valuation	186
	Private Debt Risk and Return	196
	Practice Problems	*203*
	Solutions	*207*
	Glossary	**G-1**

How to Use the CFA Program Curriculum

The CFA® Program exams measure your mastery of the core knowledge, skills, and abilities required to succeed as an investment professional. These core competencies are the basis for the Candidate Body of Knowledge (CBOK™). The CBOK consists of four components:

- A broad outline that lists the major CFA Program topic areas (www.cfainstitute.org/programs/cfa/curriculum/cbok/cbok)
- Topic area weights that indicate the relative exam weightings of the top-level topic areas (www.cfainstitute.org/en/programs/cfa/curriculum)
- Learning outcome statements (LOS) that advise candidates about the specific knowledge, skills, and abilities they should acquire from curriculum content covering a topic area: LOS are provided at the beginning of each block of related content and the specific lesson that covers them. We encourage you to review the information about the LOS on our website (www.cfainstitute.org/programs/cfa/curriculum/study-sessions), including the descriptions of LOS "command words" on the candidate resources page at www.cfainstitute.org/-/media/documents/support/programs/cfa-and-cipm-los-command-words.ashx.
- The CFA Program curriculum that candidates receive access to upon exam registration

Therefore, the key to your success on the CFA exams is studying and understanding the CBOK. You can learn more about the CBOK on our website: www.cfainstitute.org/programs/cfa/curriculum/cbok.

The curriculum, including the practice questions, is the basis for all exam questions. The curriculum is selected or developed specifically to provide candidates with the knowledge, skills, and abilities reflected in the CBOK.

CFA INSTITUTE LEARNING ECOSYSTEM (LES)

Your exam registration fee includes access to the CFA Institute Learning Ecosystem (LES). This digital learning platform provides access, even offline, to all the curriculum content and practice questions. The LES is organized as a series of learning modules consisting of short online lessons and associated practice questions. This tool is your source for all study materials, including practice questions and mock exams. The LES is the primary method by which CFA Institute delivers your curriculum experience. Here, candidates will find additional practice questions to test their knowledge. Some questions in the LES provide a unique interactive experience.

DESIGNING YOUR PERSONAL STUDY PROGRAM

An orderly, systematic approach to exam preparation is critical. You should dedicate a consistent block of time every week to reading and studying. Review the LOS both before and after you study curriculum content to ensure you can demonstrate the

knowledge, skills, and abilities described by the LOS and the assigned reading. Use the LOS as a self-check to track your progress and highlight areas of weakness for later review.

Successful candidates report an average of more than 300 hours preparing for each exam. Your preparation time will vary based on your prior education and experience, and you will likely spend more time on some topics than on others.

ERRATA

The curriculum development process is rigorous and involves multiple rounds of reviews by content experts. Despite our efforts to produce a curriculum that is free of errors, in some instances, we must make corrections. Curriculum errata are periodically updated and posted by exam level and test date on the Curriculum Errata webpage (www.cfainstitute.org/en/programs/submit-errata). If you believe you have found an error in the curriculum, you can submit your concerns through our curriculum errata reporting process found at the bottom of the Curriculum Errata webpage.

OTHER FEEDBACK

Please send any comments or suggestions to info@cfainstitute.org, and we will review your feedback thoughtfully.

Private Markets Pathway

LEARNING MODULE

1

Private Investments and Structures

LEARNING OUTCOMES

Mastery	*The candidate should be able to:*
☐	contrast the features of private and public investments, and discuss characteristics of private and public markets
☐	discuss private investment methods and structures and their uses
☐	discuss the difference between public and private market performance, and calculate, interpret, and discuss the use of performance metrics including distributed to paid-in, residual value to paid-in, and total value to paid-in
☐	compare the risk and return of investing in private markets and public markets as part of a strategic asset allocation

INTRODUCTION

A major trend among institutional investors over the past few decades is the initiation of or significant increase in private market asset allocations to complement existing public market portfolios of listed equities, fixed-income securities, and cash. According to Preqin, an alternative data provider, private market assets under management (AUM) among global investors rose from under USD1 trillion in 2000 to nearly USD12 trillion in 2022. Historically dominated by the largest institutional investors (such as sovereign wealth funds and endowments), private market investments consisting of large direct purchases of entire companies or real estate properties have evolved over the past few decades to include professionally managed private investment portfolios. For example, private market funds in the form of closed-end limited partnerships have greatly expanded private market access among small institutional investors and high-net-worth individuals.

To better prepare candidates to identify, target, evaluate, and manage private market investments throughout their financial industry careers, CFA Institute has introduced a series of Level III Private Markets Pathway learning modules, the first of which focuses on private market investments and structures.

While public markets usually involve more standardized, liquid securities of mature issuers with price transparency, private investments are characterized by unique, illiquid investments across a broader range of company life cycle stages or project development phases held for longer periods. The distinct features of private markets also lead to different investment methods and structures, which vary based on investment

size, asset type, and the internal resources an investor is willing and able to commit to managing the private asset over the investment holding period. Given a greater focus on asset price appreciation over an investment life cycle among private market investments, private market performance is measured using compounded return over a multiyear period, as opposed to periodic measures more common among public market securities. These distinct features of private market investments contribute to their complementary role when combined with more traditional public equity and fixed-income securities in a strategic asset allocation.

LEARNING MODULE OVERVIEW

- Public investments typically include non-controlling positions in debt or equity claims of mature issuers. Private investments, in contrast, often include controlling or large minority stakes in firms across the entire company life cycle, as well as private real estate or infrastructure. Public markets are characterized by the ability to readily buy or sell positions, while private markets are illiquid and trade on a negotiated basis.
- Private investment methods include a direct approach for the largest investors with sufficient expertise to manage positions over an investment period and indirect approaches, such as a closed-end limited partnership. Unlike security-based public investments, private investment structures are often created and tailored to a specific use, such as an acquisition company used for buyout equity or a special purpose entity formed to manage a project among investors and stakeholders in private real estate or infrastructure.
- While public markets typically use periodic income and asset appreciation performance measures based on observed prices, the relative illiquidity, uneven cash flows, and longer investment periods for private markets lead to the use of compounded return measures to gauge returns. For example, return multiples are often used to measure the proportion of realized and unrealized returns to a private fund investor relative to funds invested.
- The greater potential return and portfolio diversification often attributed to private market investments stems from both a longer, less liquid investment life cycle with greater uncertainty and a broader investment opportunity set across both the company life cycle and various asset types.

2 FEATURES OF PRIVATE AND PUBLIC INVESTMENTS AND MARKETS

☐ contrast the features of private and public investments, and discuss characteristics of private and public markets

Public investments generally involve listed securities representing debt or equity claims that are regularly traded on an exchange or among dealers in an over-the-counter market. Public fund managers invest in non-controlling debt and equity positions of

more mature issuers typically with stable cash flows. Public investments are characterized by an investor's ability to readily buy or sell positions and to observe current and historical prices for securities and relevant benchmarks, such as indexes.

Private investments are unlisted assets for which no organized exchange or over-the-counter market exists or involve companies that choose not to or cannot access public markets due to their size, stage of development, limited financial disclosure, or concentrated ownership. Private funds often acquire controlling or significant minority stakes held for longer periods over which value creation occurs, resulting in cash flow improvements, which are a primary driver of investor returns. Private debt and private equity claims are usually non-standardized contracts that are negotiated rather than exchanged on a regular basis. While private activities span a wide range of investments, including sole proprietorships, our focus here is limited to private investments of relevance to institutional investors. It is also important to distinguish between *alternative* investments and *private* investments, terms that are often used interchangeably. Alternative investments are those other than ownership of traditional public equity, public fixed-income, and cash instruments. While alternatives include most private markets, some alternative investments, such as exchange-traded commodities and hedge funds, use strategies involving public securities, which were addressed in detail in the Level II curriculum.

Some alternative investments are held in both public and private forms. For example, real estate investment trusts (REITs) hold income-producing properties and most often have publicly traded shares, while private real estate includes major refurbishment and development of commercial and residential properties, as well as timberland and farmland, which are covered in detail in a later learning module. In addition, some private companies issue public debt securities, such as high-yield bonds. The Private Markets Pathway covered in the following learning modules focuses on the following asset types:

- Private equity
- Private debt
- Private special situations
- Private real estate
- Private infrastructure

Key features that distinguish public and private investments are summarized in Exhibit 1 and are subsequently outlined in detail.

Exhibit 1: Features of Public vs. Private Investments

Feature	Public	Private
Asset prices	Traded, observable	Negotiated, estimated
Performance measurement	Periodic	Compounded over holding period
Liquidity	Mostly liquid, with few trading restrictions	Illiquid, with sale prohibited or restricted
Investment process	Open-end, security selection	Closed-end, with due diligence, value creation, and exit

Feature	Public	Private
Investment manager skills	Industry, company, and financial analysis	Industry, management, and technical experience and expertise, legal and financial analysis
Portfolio diversification potential	Based on correlations of observed periodic returns	Based on different company and investment life cycle phases, as well as unique asset types

Asset Prices and Performance Measurement

Immediate access to current and historical price data for individual securities and relevant benchmarks supports a variety of public market investment approaches. For example, investors can easily measure returns, volatility, and correlations across time and construct portfolios with an efficient risk–return trade-off. Public market data are a critical input in judgement-based investment approaches seeking to capitalize on a market view, rule-based strategies using factor analysis, and index-based investment strategies.

Private market investors, in contrast, have little or no price transparency for prospective, existing, or comparable investments. As a result, investors rely on relative valuation techniques, discounted cash flow methods, and recent transactions among other approaches to estimate prices. Fund managers provide valuation estimates to investors with delays and at less frequent, often quarterly, time intervals, limiting the usefulness of such data for asset allocation purposes.

Periodic public market performance measures generally assume an initial cash outflow upon asset purchase and periodic inflows, including bond coupons, stock dividends, and net operating income for real estate. In contrast, private market investments involve far less predictable cash flows, with multiple cash outflows and inflows of uncertain timing. Performance metrics for private investments will be addressed in detail later in this reading.

Liquidity and Investment Process

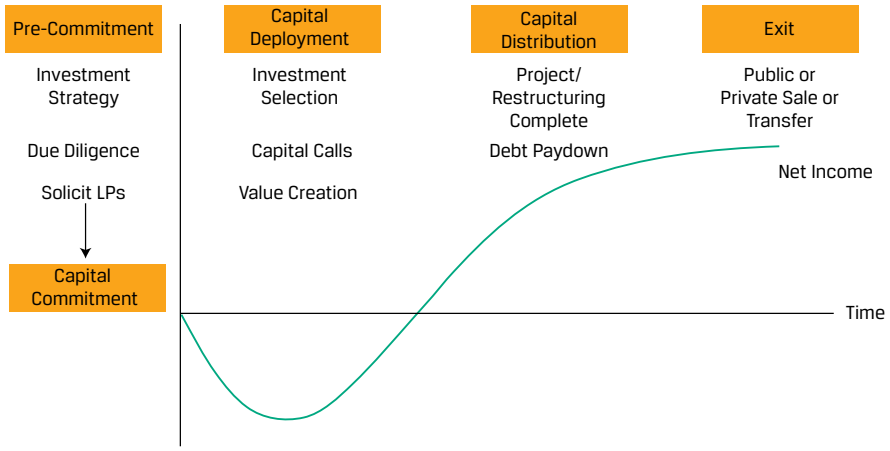
Active trading of listed securities in public markets offers a high degree of liquidity and relatively low transaction costs. The purchase and sale of listed securities can be as simple as executing a market order, and short-term market developments may prompt a public fund manager to sell securities whose observed price exceeds what a manager considers to be fair market value or to purchase undervalued securities based on public market developments. Issuers of public equity and debt are usually in a mature phase of development with predictable, stable cash flows.

Privately held controlling or minority stakes in a firm, a project, or a real asset are inherently illiquid. Fund managers usually seek a larger capital commitment from investors and require a far longer investment time horizon than for public funds, sometimes up to 10 years or more. Private purchases and sales are often negotiated between two or very few potential buyers and sellers, leading private fund managers to prohibit or severely restrict investors from selling fund positions to avoid the need for early liquidation.

The different features of public and private investments also give rise to distinct investment processes. For example, the greater liquidity and price transparency of public investments allow for a more open-end investment approach and structure. Investments in illiquid private assets held for longer periods benefit from a closed-end approach in which investors align manager compensation with investment performance.

We refer to the development or transformation of private assets over this longer investment holding period as the **private asset investment life cycle**, whose distinct phases are shown in Exhibit 2.

Exhibit 2: Private Asset Investment Life Cycle



The private asset investment life cycle common among investment types consists of capital commitment, deployment, distribution, and exit phases, which will be addressed in detail in later learning modules. The private asset investment life cycle is characterized by negative returns in early phases followed by cash flow and income growth in later phases, referred to as the **J-curve effect**.

Public market investors with non-controlling stakes have little influence over issuers beyond the exercise of voting rights. Private investment managers, in contrast, are actively engaged in managing and controlling assets throughout the investment life cycle. Tasks range from identifying ideal targets, conducting due diligence, and creating detailed business and financing plans to managing the value creation process from capital deployment until an investment is ultimately sold or exited and capital is returned to investors.

Manager Skills

Distinct investment processes, as well as roles and responsibilities, among public and private fund managers give rise to different skill sets required for success in managing portfolios in these respective markets. As public fund managers largely delegate the value creation process to company managers, much of the underlying investment research is conducted across securities, companies, and industries. For example, publicly available corporate financial statements and other data sources are used to create and compare financial ratios and other relevant metrics as a basis for investment analysis.

Private market investments often lack the market price transparency of public market securities and include investment opportunities ranging from new real estate developments to mature firms in financial distress to startup companies with little more than a business idea. The manager skill set required to successfully shepherd these investments from selection through exit goes well beyond security analysis. In the case of real estate, local market knowledge and project development and management experience are critical. Private equity fund managers often bring significant operational experience and industry expertise. In addition, they bring industry relationships and

management experience in founding, growing, or restructuring businesses, as well as legal, accounting, tax, and other qualifications, to their role in managing such investments. Given the prevalence of less standardized contracts in private markets, both investors and managers must be prepared to conduct additional legal analysis when considering such investments.

Early-stage companies with little or no revenue often solicit private equity investments known as **venture capital**, which involve both high risk and a high rate of failure. A company's initial success is usually measured by non-financial milestones, such as establishing a product and go-to-market strategy, as well as identifying market potential well before the company generates revenue or profits. Therefore, in addition to capital, startup investors often bring relevant experience, contacts, and partnerships to young companies to help establish a successful business as demonstrated in the following example.

EXAMPLE 1

CRISPR Therapeutics AG's Startup Phase

In 2013, French professor and researcher Emmanuelle Charpentier co-founded CRISPR Therapeutics AG, together with Rodger Novak and Shaun Foy. Using genome editing and engineering discoveries for which Charpentier and Jennifer Doudna were later awarded the Nobel Prize in Chemistry, CRISPR Therapeutics was established in order to use these new gene-editing tools in biotechnology and biomedical applications.

In the following year, CRISPR Therapeutics raised USD25 million in Series A equity from Versant Ventures, a US-based venture capital firm focused on the health care and biotechnology industries. Given Versant's multidisciplinary team of scientists and researchers, the company announced a broader team of leading experts in various fields of science to capitalize on this new technology at the time of financing.

According to Crunchbase, a startup and early-stage financing data provider, CRISPR Therapeutics conducted three additional equity financing rounds with 16 investors, including established pharmaceutical companies, such as Celgene and Bayer AG, as well as other venture capital firms, such as New Enterprise Associates (NEA).

NEA is a US-based private investment firm focused on the technology and health care industries and one of the world's largest venture capital funds, with over USD25 billion in committed capital. NEA's health care industry team members include physicians, research scientists, pharmacists, and other experts with extensive experience in the areas of biotechnology, pharmaceutical drug trials and medical devices. NEA partner Ali Behbahani, MD, MBA was appointed to CRISPR Therapeutics AG's board of directors at the time of NEA's investment.

In October 2016, CRISPR Therapeutics became public in an IPO on the NASDAQ exchange, which valued the company at USD590 million. The company has since reached a market capitalization over five times that of its IPO valuation, establishing many partnerships and developing several drugs for blood diseases, cancer, diabetes, and other illnesses.

As the example suggests, both the equity capital and industry expertise provided by private fund managers often contribute to a startup's success. For example, NEA's board membership and its involvement, along with other investors, in establishing partnerships and helping establish drug trials were key factors in expanding CRISPR's business at an early stage.

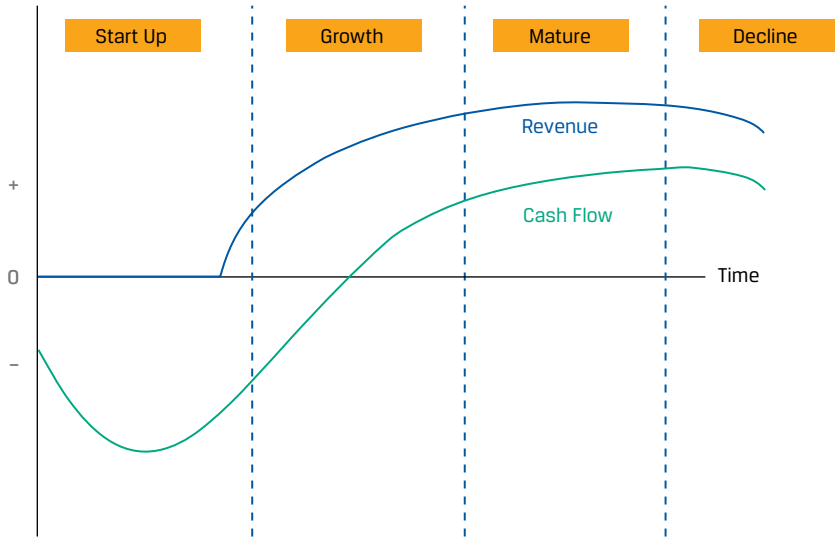
Portfolio Diversification Potential

The distinct features of private markets and investments are commonly assumed to result in relatively low correlations between private market returns and those of public market securities. While a public market security's correlation may be estimated easily relative to the existing public market portfolio because of observed market prices, private market illiquidity and longer investment periods preclude such a comparison. The diversification potential of private market investments is assessed differently. The following are key sources of potential diversification in private markets:

- Private company debt and equity exposures in life cycle phases, which are unavailable to public market investors, such as exposures to rapid growth or restructuring opportunities
- Private company debt and equity return dynamics over an investment life cycle, which vary from those of mature public companies
- Exposures other than private company debt or equity that exhibit return dynamics different from those of public securities

Successful firms emerge from a startup period via rapid expansion, with cash flows and profitability rising until they reach a mature, stable phase and subsequently facing decline, as shown in Exhibit 3.

Exhibit 3: Company Life Cycle Stages



While public markets and investments are concentrated among mature companies, private investments span the entire company life cycle.

The CRISPR example illustrates the first of these diversification sources. Startup and early-stage companies usually fail to meet public equity listing criteria, nor do they reach minimum profitability or interest coverage requirements of traditional debt providers. While startups such as CRISPR Therapeutics have a very high return potential, they also have a high failure rate. If successful, early-stage and young companies in an expansion phase tend to exhibit above-trend growth that is less driven by the business cycle, which generally impacts more established firms. Private investors play a role in the success of these companies by applying industry-specific and other skills in selecting and managing investments, as discussed in detail in later learning modules.

A second potential source of diversification is more common among so-called **buyout equity** investments in existing public companies. Private equity buyouts often involve taking a mature public company private using debt and equity with the intent to transform, divest, or acquire businesses and sell the reorganized firm at a higher price. Given these steps taken by private fund managers over the investment life cycle, buyout company performance may diverge significantly from that of public equities. In some cases, private manager skill in selecting, acquiring, financing, restructuring, and selling companies may result in relative outperformance, while in other cases, timing differences of otherwise similar trends in private and public equity may result in reduced correlation.

A third area of potential variation among private and public market returns involves alternative asset classes, such as real estate or infrastructure. Private real estate often involves major refurbishment or new construction as opposed to more stable income-producing properties held by public REITs. Publicly traded infrastructure companies issue debt and equity securities with diversified exposure to a changing project portfolio as opposed to the large, single-use illiquid assets that characterize private infrastructure. Private real estate and private infrastructure are characterized by an investment life cycle, which distinguishes their risk and return features from those of public markets.

Many of the characteristics of private markets and investments that offer the possibility of attractive risk-adjusted and less correlated returns also historically represented barriers to entry for many institutional investors. For example, the relative lack of price transparency, illiquidity, large minimum investment size, and specialized knowledge necessary prevented all but the largest asset owners from taking advantage of private market investment opportunities. The following example describes one sovereign wealth fund's journey in investing in private market strategies.

EXAMPLE 2

GIC's Private Markets Investment Strategy

Government of Singapore Investment Corporation (GIC) is among the world's largest sovereign wealth funds, with an estimated USD700 billion in AUM. Established in 1981 with a mission to preserve and grow the global purchasing power of Singapore's strategic reserves, GIC gradually shifted from a conservative policy of 70% developed market bonds and cash to a greater equity and private market allocation similar to those of major endowments.

In conjunction with these changes, GIC disclosed a new investment framework in 2013:

- *Reference Portfolio:* A 65% global equity, 35% global bond benchmark representing the Government of Singapore's overall risk tolerance
- *Policy Portfolio:* GIC's asset allocation across six asset classes, which include real estate and private equity
- *Active Portfolio:* GIC has the flexibility to pursue what it refers to as skills-based and opportunistic investments within each asset class, as well as across and outside of the six primary asset class distinctions, within a predetermined risk budget set by the GIC board.

GIC rapidly adapted to this more active investment approach over the following decade, with a reported private equity allocation of 17% and real estate allocation of 13% as of 2022–2023. Despite its lack of disclosures of private investments outside of private equity, GIC's active role in private markets is evidenced by the growth in its investment team and in the number and size

of private market transactions in which it participates. For example, GIC now employs over 2,000 investment professionals, 70 of whom are solely dedicated to infrastructure investments, in 11 global offices. According to a survey by Global SWF, a research firm, GIC participated in the largest number of private market transactions among state-owned investors in 2022, with 72 private market deals totaling USD39 billion.

Given its size, scope, and skilled management team, GIC can invest through private market funds, as well as acting as a direct investor or co-investor, to build a diversified private portfolio across vintage years, industries, and geographies. For example, in early 2023, GIC partnered with Oak Street, a US-based real estate private equity firm, to acquire STORE Capital Corporation, a publicly traded commercial REIT specializing in single-tenant operational real estate, for USD15 billion.

While most investors lack the size, scope, and in-house professional expertise of the sovereign wealth fund described in the previous case study, private market investments have evolved to become more widely accessible to a broad range of institutional investors and high-net-worth individuals. In what follows, we will review the various structures, forms of ownership, and investment methods that have made this situation possible.

QUESTION SET

1. Which one of the following skills is more essential to private market investment relative to public market investment?

   A. Company analysis

   B. Legal analysis

   C. Industry analysis

   Solution

   B is the correct response. While company and industry analyses are common in all investment analyses, both private and public, private investments involve taking large stakes in a company or asset. As such, a private investor should have the ability to conduct legal analysis as part of the due diligence process.

2. Which one of the following statements best describes a source of portfolio diversification potential from private market assets?

   A. Private markets offer potential access to higher-risk investments compared to public markets.

   B. Private markets offer potential access to investments in different company life cycle stages compared to public markets.

   C. Private markets offer the potential to invest in lower-risk companies in the mature phase of the company life cycle.

   Solution

   B is the correct response. Private company debt and equity investments create exposures in company life cycle phases that are unavailable to public market investors. A is not correct, because higher risk can always be achieved in public market investments by increasing leverage. C is not correct, because public markets also offer investors the potential to invest in lower-risk companies in their mature phase. The diversification benefits of

private market investments stem from the fund manager's efforts to transform a mature business during the investment life cycle.

3. Discuss an important contrast between private and public market investments related to ownership stakes.

Solution

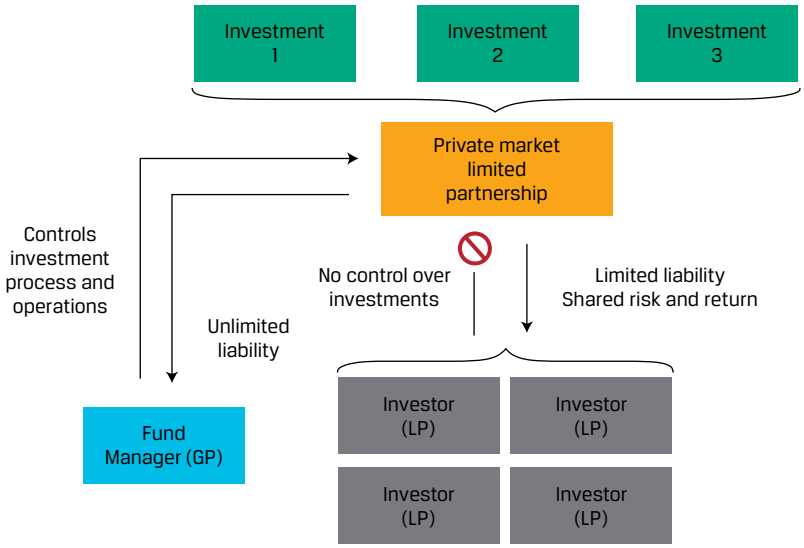
Private funds acquire controlling or significant minority stakes in companies or assets and hold these for longer periods. In contrast, public fund managers invest in non-controlling debt and equity positions of companies or assets and can readily liquidate them in traded markets.

3 PRIVATE VS. PUBLIC INVESTMENT STRUCTURES

☐ discuss private investment methods and structures and their uses

Public market investors typically face a relatively simple choice between direct selection of individual securities and an indirect approach in which security selection is delegated to a public fund manager. The longer investment holding period and more active manager engagement over the investment life cycle of private market investments give rise to more complex investment methods, including closed-end fund structures based on a **limited partnership** structure, as shown in Exhibit 4.

Exhibit 4: Limited Partnership Structure

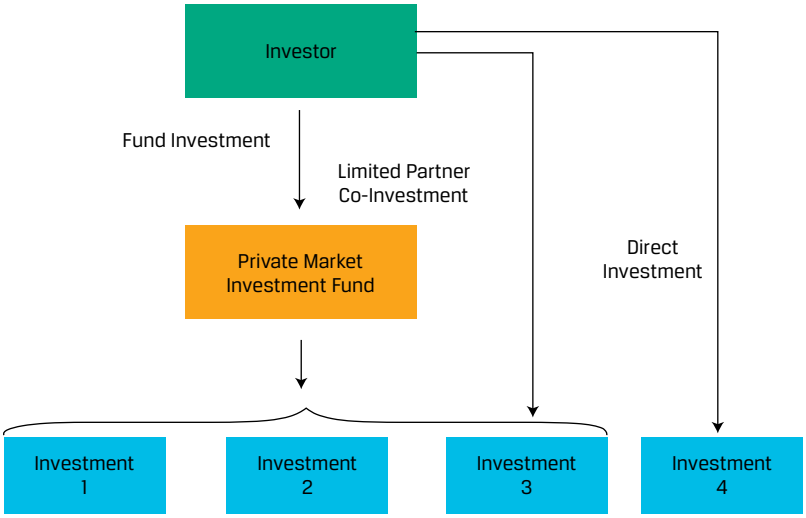


These partnerships are used to align the interests of private market fund managers, or **general partners (GPs)**, and private market fund investors, or **limited partners (LPs)**, as described in greater detail later.

Private Investment Methods

In private markets, the choice of a direct or indirect investment method depends on the investor's commitment size and the ability and willingness to commit the necessary resources to actively manage the position over the investment life cycle. Three common private market investment methods are shown in Exhibit 5.

Exhibit 5: Direct Investment, Co-Investment and Fund Investment Alternatives



Direct Investment

Direct investment involves the purchase of an equity ownership stake or private debt investment *without* the use of a partner or an investment intermediary. This investment method may, for example, involve a controlling stake in a buyout equity transaction. If acquiring a majority equity stake, a direct investor must not only negotiate the purchase price but also establish and execute a successful business plan to create value over the investment holding period. For this reason, as well as due to the potential portfolio concentration risk of large-scale acquisitions or projects, the largest asset owners, such as GIC in the earlier example, tend to be the primary users of the direct investment approach. With 17% of its roughly USD700 billion in investments committed to private equity, a new USD1 billion buyout investment would represent less than 1% of GIC's exposure to this asset class.

Co-investment occurs either as a **direct co-investment** or as a **limited partner co-investment**, as shown in Exhibit 5. Direct co-investment involves the *direct* purchase of an ownership stake or private debt investment with the use of one or more partners, one or more of whom may be a private fund manager. The earlier example described GIC's acquisition of STORE Capital with Oak Street, an example of an Asian sovereign wealth fund co-investing with a private equity firm with a focus on US real estate. Direct co-investment offers investors the opportunity to reduce the size of their private market portfolio positions, benefit from the expertise of investment partners, and reduce fees as compared to indirect investment approaches. A limited partner co-investment, in contrast, involves the purchase of an ownership stake or private debt investment in a single investment that is managed by a private fund manager. In some

cases, LP investors with established GP relationships who are willing to invest large amounts in a fund may receive co-investment rights. Such co-investment rights provide investors the option to co-invest in an opportunity before it is offered more widely.

In the case of minority stakes in startup firms, founder-managed businesses often seek investments of less than USD10 million. While relatively accessible to smaller investors, investments of this size are often not large enough to meaningfully impact the portfolios of the largest investors. The very high failure rate of such firms underscores the necessity of industry expertise and experience in evaluating prospective investments. It is quite common for high-net-worth individuals who are also often successful entrepreneurs known as **angel investors** to provide early-stage financing to startup companies, as described next.

ANUPAM MITTAL, ANGEL INVESTOR

Anupam Mittal is an Indian angel investor who began his career as an entrepreneur in 1997 by founding an online wedding service for non-resident Indians, which became Shaadi.com, a leading matrimonial website for Asians that has since expanded to retail outlets providing related services.

After raising capital for his own startup in Silicon Valley, given the lack of venture capital firms in India at the time, Mittal became one of the leading angel investors in Indian startups, investing in over 200 early-stage companies, including such successful firms as the ridesharing business Ola Cabs and the leading online grocer BigBasket. In 2021, Mittal became one of the original panelists on Shark Tank India, an Indian franchise of the successful US business reality television series, in which startup companies present to a panel of investors or "sharks" who decide whether to invest in each business.

Indirect Investment

Indirect forms of private market investment include co-investment and fund-based alternatives. In the case of a so-called limited partner co-investment, an LP purchases an equity ownership stake or private debt investment in a single investment that is managed by a GP. This form of indirect investment allows LPs to take a larger stake in specific assets of interest in a portfolio under the direction of a more experienced private fund manager. LPs who are offered co-investments are able to gain deeper insight into their GPs because they are given access to a substantial amount of the GPs' due diligence materials and investment memos related to the investments. Such material is not available to typical LP private fund investors. In addition to tailoring a private portfolio beyond a set of fund stakes, this approach gives LPs the opportunity to engage in the investment process more actively in exchange for fee reductions. General partners, in contrast, use the co-investment method to share investment risk, expand access to investor capital, and in some cases attract new investors outside an existing partnership.

As described earlier and shown in Exhibit 4, indirect investments in private market funds are often organized as limited partnerships. In contrast to highly liquid public investment funds, which offer price transparency, limited partners face long and illiquid investment holding periods. LPs must also commit capital in advance of investment selection and face uncertain timing of both capital calls and the distribution of returns over time. (The effect of this key feature of limited partnerships on investment portfolios and returns is addressed later.) As a result, limited partnerships typically involve performance-based incentive compensation among other features

designed to manage information asymmetry and align manager and investor interests. The next reading will address these GP and LP perspectives and the investment process in greater detail.

Private Investment Structures

Whether a private market participant is acting as a direct investor or investing indirectly via a limited partnership, the underlying structures of individual private investments are less standardized than public security–based investments. Corporate governance for private corporations and other legal entities often deviates from the simple one-vote-per-share and majority rule more common among public companies and is subject to negotiation. For example, an influential minority investor may negotiate such provisions as a seat on a private company's board of directors or a supermajority vote requirement for key business decisions, which can grant a minority owner an effective veto right on certain strategic decisions. New legal entities are frequently created for and tailored to a specific use, such as the management of roles, responsibilities, risks, and return over a project's investment life cycle or the purchase of a public company by private investors, referred to as a **take-private transaction**, after which the target company's shares are no longer publicly traded, as in the following case study.

CASE STUDY

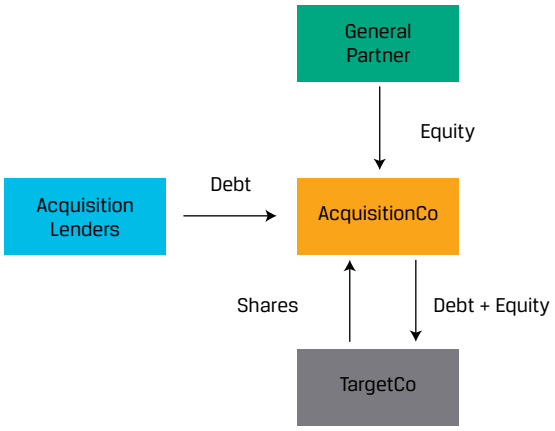
Straploc Industries Acquisition

Glidestone Capital Partners, a private equity buyout firm general partner, has targeted Straploc Industries for a take-private transaction because of its recent underperformance versus industry peers. Straploc is a manufacturer and distributor of specialty fasteners, adhesives, and seals used in numerous industrial applications that is publicly traded on the Toronto Stock Exchange. Glidestone intends to restructure Straploc's operations and sell the company in several years.

Since Glidestone plans to fund 70% of the expected CAD1.25 billion purchase price with debt and the remainder with committed equity capital, it has asked a group of banks also serving in an advisory role on the acquisition to arrange a temporary acquisition financing of CAD875 million to support its bid, pledging the Straploc shares it will acquire as loan collateral to the lenders.

In a take-private transaction such as the one in the prior case study, also referred to as a **leveraged buyout (LBO)** because of the high proportion of debt financing used to make the acquisition, a new legal entity is often created to facilitate the process. For example, as shown in Exhibit 6, a separately funded new acquisition company (AcquisitionCo) is often created for the sole purpose of acquiring a specific target company (TargetCo). If the bid is successful, its assets will consist of TargetCo shares and its liabilities will be short-term acquisition debt, with the equity contributed by the buyout firm.

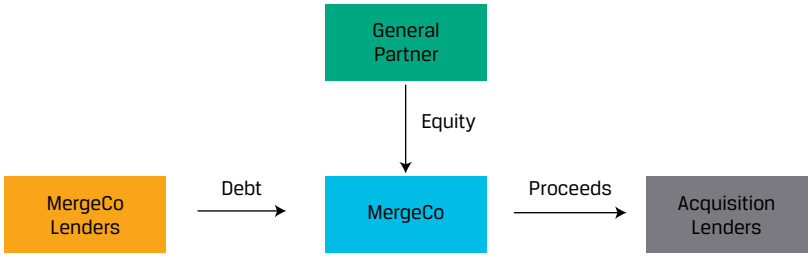
Exhibit 6: Take-Private Acquisition Structure—Initial Phase



Take-private transactions, as well as other mergers and acquisitions, typically trigger the refinancing of a target company's existing debt. This situation occurs because existing lenders and bondholders are commonly protected by a **change of control clause**, a provision requiring the issuer to offer to repurchase outstanding debt if certain changes occur in a company's ownership or management.

In the second stage of the buyout, long-term financing is negotiated as the deal is closed. In some cases, an acquiror may have arranged to simultaneously sell certain divisions of TargetCo or combine the target with another company it already owns. In other cases, such actions may take place in a later restructuring phase. At this time, AcquisitionCo and TargetCo are combined in a merger (MergeCo), and the acquisition financing is replaced with medium- and long-term debt issued by the new legal entity, as shown in Exhibit 7.

Exhibit 7: Take-Private Acquisition Structure—Second Phase



Private market strategies often involve debt structures that are less standardized than the non-callable fixed-coupon bonds common in public investment-grade debt markets. For example, the debt profile of leveraged buyouts typically involves a flexible structure to meet evolving issuer needs and the lender demands as illustrated in the following Straploc Industries case study.

CASE STUDY

Straploc Industries' New Debt Profile

Straploc Industries' management would like the ability to repay debt early as it restructures, balance both fixed and floating interest rate exposure, stagger debt maturities, and use its fixed assets as security to reduce borrowing costs.

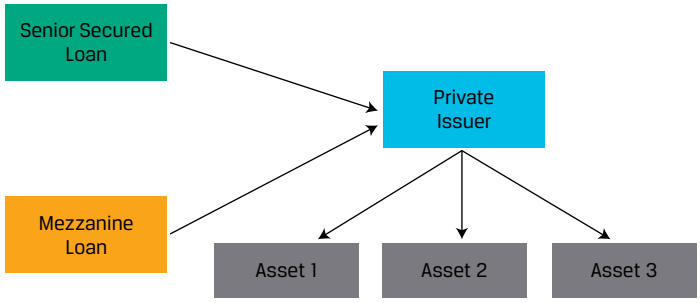
The underwriting banks for Glidestone's acquisition loan have offered to arrange a **leveraged loan** for Straploc. This type of senior secured loan has a floating-rate coupon based on market reference rates, includes several restrictive debt covenants, and is prepayable.

As the buyout equity financial sponsor, Glidestone has directly solicited private investors to purchase Straploc debt and found the greatest investor interest in a **mezzanine loan**, or a debt claim serviced after senior debt claims but before common shares. This subordinated debt has a longer tenor and a higher fixed coupon than the floating coupon on a leveraged loan, is not prepayable, and has fewer restrictive covenants.

After considering both its goals and the associated trade-offs of different debt structures, Straploc management chooses to borrow using a larger (CAD600 million) leveraged loan tranche and a smaller (CAD275 million) mezzanine facility.

As in the case of equity, private debt investors may directly contract with a borrower or invest indirectly as a limited partner in a private credit fund to gain exposure to the senior secured debt or the mezzanine loans created in this transaction. Exhibit 8 shows the post-acquisition structure from the previous case study.

Exhibit 8: Post-Acquisition Private Debt Structure

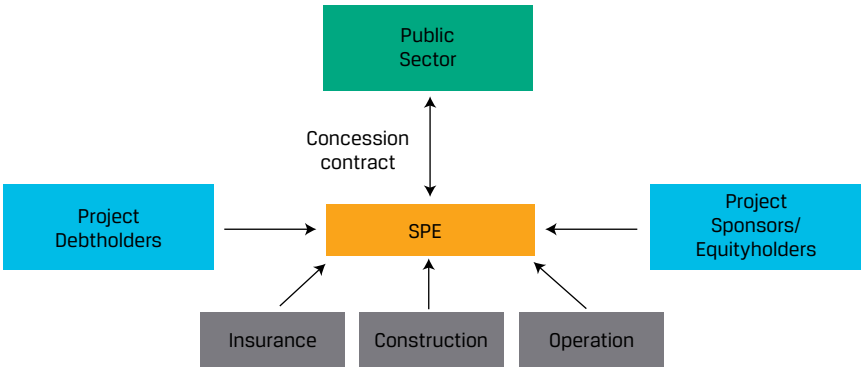


As in the case of the buyout equity transactions, project-based private investments in the areas of real estate or infrastructure also often involve the establishment of what is often referred to as a **special purpose entity (SPE)** or special purpose vehicle.

In the case of a project SPE, the entity's sole purpose is to facilitate the construction, operation, and financing of a real estate or infrastructure asset. Use of a separate, new legal entity isolates the assets, liabilities, cash flows, and income, as well as associated contractual obligations, from the balance sheets of investors and other stakeholders. This structure serves to segregate the claims and obligations of a project's sponsor from the project itself. For example, a new private real estate development usually involves the establishment of a project company. This company receives an equity contribution from a private real estate GP, purchasing undeveloped land, which is financed using this equity and debt secured by the property.

In the case of private infrastructure investment, an SPE structure is often used among various public and private entities as parties to a **concession agreement**, or a contractual arrangement under which an entity's terms and conditions are established with a developer or operator to plan, build, operate, finance, and maintain an infrastructure asset for a finite period (see Exhibit 9).

Exhibit 9: Infrastructure Special Purpose Entity



As shown in Exhibit 9, the SPE or in some cases a fully owned operating company is the focal point and often the contracting entity for many stakeholders, including regulators, debtholders, and equityholders.

QUESTION SET

1. Which of the following investment methods applies to private market investment but not public market investment?

   A. Direct investment

   B. Co-investment

   C. Fund investment

   Solution

   B is the correct response. Co-investment refers to either a direct investment in private equity or debt with one or more partners or an indirect investment as a single investment in private equity or debt with a fund general partner managing the investment. Both A and C are incorrect because direct investment and fund investment are approaches in either public or private market investment.

2. Discuss two reasons why direct investment in private market investments is typically limited to very large investors, such as sovereign wealth funds.

   Solution

   First, investors must control sufficient assets such that they can adequately manage the potential for portfolio concentration risk associated with large-scale acquisitions or project investments.

   Second, a direct investor must not only negotiate the purchase price and legal terms of an investment but also establish and execute on a successful business plan to create value over the investment holding period. Thus, the

investor needs to have access to sufficient resources to have a team with the necessary expertise, which is likely only for very large investors.

3. Which one of the following private market investments is structured to address a change of control clause?

   A. Leveraged buyout

   B. Venture debt

   C. Leveraged loan

   Solution

   A is the correct response. Leveraged buyouts, as well as other mergers and acquisitions, typically trigger the refinancing of a target company's existing debt. This situation occurs because existing lenders and bondholders are commonly protected by a change of control clause, a provision requiring the issuer to offer to repurchase outstanding debt if certain changes occur in a company's ownership or management. B is incorrect because venture debt does not create any change of control issues. C is incorrect for the same reason, although a leveraged loan is likely part of the longer-term financing that is an outcome of the change of control clause in an LBO.

4. Which of the following is the most correct statement as to why private real estate and infrastructure projects are typically governed through a SPE?

   A. To limit the liability of investors for assumption of risks to those associated with the project

   B. To ensure that investors capture their share of returns from the project

   C. To protect the value of the investment at the end of the concession agreement

   Solution

   A is the correct response. An SPE creates a separate, new legal entity, which isolates the assets, liabilities, cash flows, and income of the project, as well as its associated contractual obligations, from the balance sheets of investors and other stakeholders. In this way, the SPE limits investor liability to only risks associated with the project. B is incorrect because the SPE does not govern the specific allocation of cash flows. Rather, the equity and debt investments specify these terms. C is incorrect because the value (if any) of the project reverts to the grantor at the end of the project.

PRIVATE VS. PUBLIC INVESTMENTS AND RETURN METRICS

4

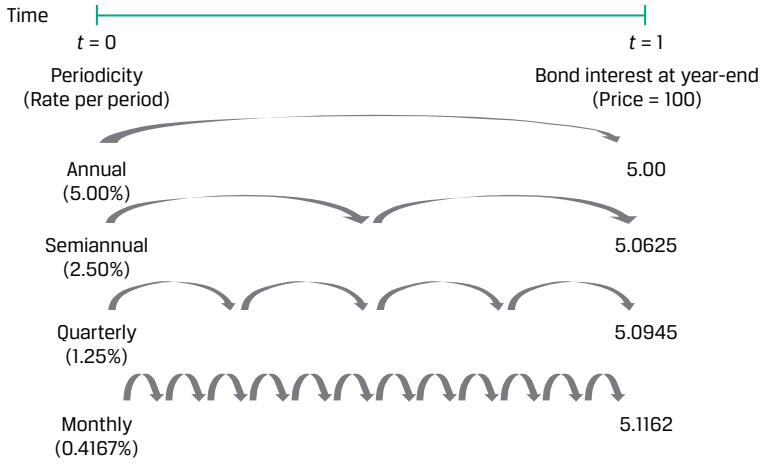
☐ discuss the difference between public and private market performance, and calculate, interpret, and discuss the use of performance metrics including distributed to paid-in, residual value to paid-in, and total value to paid-in

The distinct features of public and private markets lead not only to differences in liquidity and price transparency but also to different performance dynamics and approaches to performance measurement.

Public vs. Private Market Performance

Public markets include listed equity and debt securities from mature issuers with stable cash flows. While most large public equity issuers pay periodic dividends to shareholders, public debt securities are usually non-callable bonds that pay periodic fixed coupons to debtholders. As a result, public security analysts typically rely on measures of income and asset appreciation calculated on a consistent periodic basis as the most appropriate measure to compare returns and performance. Exhibit 10 illustrates the comparison of return over different periods as shown in the CFA Program Level I fixed-income curriculum for the case of bonds.

Exhibit 10: Periodic Yield Measures for Fixed-Rate Bonds



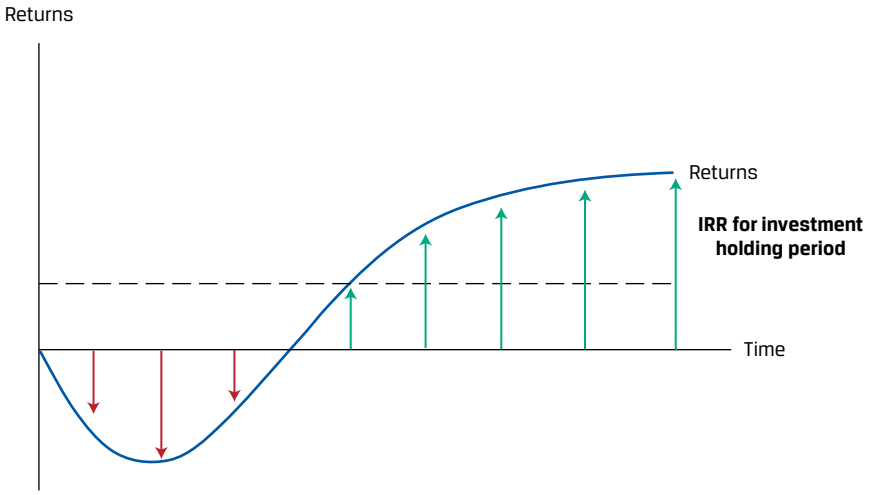
It is important to note that a high degree of price transparency and liquidity that is present in many public markets is necessary for such measures to be calculated, compared, and acted on in the case of arbitrage opportunities.

Private market investments, including private equity and debt from various stages over the company life cycle, as well as private real estate and infrastructure, face valuation challenges that complicate performance measurement. Their illiquidity, lack of price transparency, and dissimilarity among investments in the same private asset class preclude analysts from applying the same periodic and relative performance measures as for public markets.

In contrast to the stable cash flows of public market investments, the private asset investment life cycle shown in Exhibit 2, combining periods of positive and negative cash flow, implies that private market performance is best measured over a multiyear holding period. A common measure applied in such a case is the **internal rate of return (IRR)**, or the uniform discount rate for a series of cash flows (CF) over n periods that returns a net present value (NPV) of zero, as shown in Equation 1 and Exhibit 11:

$$\text{NPV} = 0 = \frac{\text{CF}_1}{(1+\text{IRR})^1} + \frac{\text{CF}_2}{(1+\text{IRR})^2} + \ldots + \frac{\text{CF}_n}{(1+\text{IRR})^n}. \quad (1)$$

Exhibit 11: IRR over the Private Asset Investment Life Cycle



An important consideration when using IRR is that this calculation assumes interim cash flows may be invested at the IRR rate. While this assumption may hold in highly liquid public fixed-income markets, it is less realistic in the case of private market cash flows. For example, lower reinvestment rates of interim cash flows will reduce an investment's return.

Another cash flow–based performance measure commonly applied in private markets is the **return on investment (ROI)**, equal to the ratio or multiple of cash flows received versus those invested:

$$\text{ROI} = \frac{\sum(\text{Cash flows received})}{\sum(\text{Cash flows invested})}. \quad (2)$$

Although simple to apply and widely used, note that the ROI measure ignores the time value of money and the investment holding period.

In the special case in which a single investment (cash outflow) occurs at the beginning of an investment holding period and a one-time payoff occurs at the end, we may convert the ROI over an investment time horizon to an equivalent IRR of an n-year investment holding period, as follows:

$$\text{ROI} = (1 + \text{IRR})^n. \quad (3)$$

These performance measures are shown using the prior case study.

CASE STUDY

Straploc Industries' ROI and IRR

After a five-year restructuring period, assume that Glidestone Partners can sell its initial CAD375 million (equal to 30% of the original CAD1.25 billion purchase price) equity stake in Straploc Industries for CAD1.45 billion.

1. If we assume that Glidestone makes a single initial investment and received no dividends or distributions over the five years prior to sale, calculate the ROI on the Straploc equity position.

   Solution

   Using Equation 2, we can solve for ROI using the initial purchase price in the denominator and the sales price in the numerator:

$$\text{ROI} = 3.867\times = \frac{\text{CAD1.45 billion}}{\text{CAD375 million}}.$$

2. Glidestone Partners has a target return of 30% over a five-year holding horizon on its buyout equity portfolio. Discuss whether the Straploc take-private transaction meets Glidestone's target and how the investment return would be affected if the investment were realized for the same amount and proceeds distributed earlier.

Solution

Because a single cash outflow occurs upon purchase and a single cash inflow occurs at the end, we can use Equation 3 to convert the ROI from Question 1 to an equivalent IRR over five years:

$$3.867\times = (1 + \text{IRR})^5.$$

$$\text{IRR} = 31.06\%.$$

The IRR of 31.06% exceeds Glidestone's return target of 30%. An earlier distribution of proceeds is a benefit to Glidestone's return. For example, a sale of Straploc at the end of four years results in an IRR of 40.23%. However, it is worth noting that this higher IRR assumes that the sale proceeds can be reinvested at 40.23% for an additional year. The earlier receipt results in the same five-year return of 31.06% only if these cash flows are not reinvested at all.

The private market investment life cycle involves the added complexity of extended upfront capital commitments, which do not exist in public markets. Investors must typically commit funds to a limited partnership months or years in advance of capital deployment, with little certainty regarding the timing or magnitude of capital calls. As a result, investors must often hold these commitments in more liquid public investments with possibly lower expected returns.

This feature adds to the challenge of assessing private market performance across all LPs in two ways: (1) the comparability of the return horizon between private and public markets and (2) the effects of public market conditions on capital call timing. The following example illustrates the comparison of public and private market performance.

CASE STUDY

Public vs. Private Market Return over an Investment Holding Period

Claire Thompson is an investment management consultant leading a conference workshop for public pension fund investment managers on comparing public and private market performance. She introduces a purely hypothetical example of a public pension manager with the following investment opportunities:

- Purchase shares in a public company for USD500,000 today, or
- Commit USD500,000 to a private equity fund today to be invested in a similar company in two years.

The manager expects public and private equity investment values to generate ROI of 2× over seven years, with the private company taken public at that time. Neither equity investment is expected to make interim distributions, and all calculations ignore investment fees and any other costs.

1. Calculate the IRR of the public investment opportunity over the seven-year holding period.

   Solution

   Given the doubling of investment value (ROI = 2×) with no interim cash flows, use Equation 3 to calculate the IRR:

   $2\times = (1 + \text{IRR})^7$; IRR = 10.41% [$= 2^{(1/7)} - 1$].

2. Assume the private equity fund makes a single capital call in two years—that is, the USD500,000 will be deployed in the second year. Discuss why an investor cannot simply solve for expected private investment return using a five-year time horizon, an initial cash outflow of USD500,000, and a future inflow of USD1,000,000.

   Solution

   The assumption that the private market company will double in value over seven years might mistakenly lead a manager to believe that she will pay USD500,000 in two years and receive USD1,000,000 in seven years, resulting in an IRR of 14.87% [$= 2^{(1/5)} - 1$]. However, this approach ignores the opportunity cost of committed capital, which is not invested for the first two years. If we instead assume the private investment generates the same 10.41% IRR as the public investment with *no* return on committed capital for the first two years, then USD500,000 in capital committed today and deployed in two years will return just USD820,374 [= USD500,000 × $(1 + 0.1041)^5$] at the end of seven years, or an ROI of 1.641× (= USD820,374/USD500,000). We may substitute this ROI into Equation 3 for seven years to solve for private equity IRR of 7.33%:

   $1.641\times = (1 + \text{IRR})^7$; IRR = 7.33% [$= 1.641^{(1/7)} - 1$].

3. Given the uncertainty surrounding the timing and magnitude of capital calls for the private equity fund, the manager decides to invest committed capital in a liquid short-term fixed-income fund that returns 3.00% per annum. Discuss the effect of this decision on the IRR of the private equity fund allocation over the seven-year time horizon.

   Solution

   The manager's decision to invest committed capital in a short-term fixed-income fund will *reduce* but not fully offset the opportunity cost of committed capital that is eventually invested in private equity in two years. We would therefore expect the IRR of this allocation to be *above* the 7.33% in Question 2 given the assumption of zero return on committed capital but *below* the 10.41% IRR of the public investment that is fully deployed in shares for seven years.

   We may demonstrate this outcome by calculating the revised IRR of the private equity fund under this assumption based on the following three steps:

   Step 1 Solve for the future value of today's USD500,000 commitment.

   The future value of USD500,000 at a 3% rate of return in two years can be determined using a simple time-value-of-money calculation:

   USD530,450 = USD500,000 × $(1 + 0.03)^2$.

   Step 2 Use the result to solve for investment value in seven years.

The same approach applies for the future value of USD530,450 at a 10.41% rate of return for five years:

$$\text{USD870,355} = \text{USD530,450} \times (1 + 0.1041)^5.$$

Step 3 Calculate ROI over the full seven years, and solve for IRR.

ROI is simply the ratio of the USD870,355 future value and the USD500,000 original value, or 1.741×. Solve for IRR using Equation 3:

$$1.741\times = (1 + \text{IRR})^7 \quad \text{IRR} = 8.24\% \; [= 1.741^{(1/7)} - 1].$$

The prior example highlights the challenges associated with private market performance and public market comparisons when capital is not immediately deployed. Delayed cash *outflows* in the form of committed capital invested in more liquid investments with lower expected return will reduce IRR. Greater uncertainty surrounding the timing of capital calls makes the comparison of expected returns more challenging. Key factors affecting the timing of capital calls include the economic outlook and public market conditions, among other factors. For example, private buyout GPs deploy capital more rapidly in an environment where borrowing costs are low and expectations of solid economic growth support numerous restructuring opportunities. Under adverse market conditions, such as rising interest rates and greater risk aversion, capital deployment slows or pauses until GPs can find investment opportunities expected to meet or exceed target rates of return. For this reason, the **vintage year**, or year in which capital is initially deployed to a specific investment or project or more generally by a private market fund, is an important private investment characteristic that is closely tracked for comparing similar investments made at the same time and for seeking diversification over time across investment life cycles within a private market allocation.

Cash Flow and J-Curve Effects in Private Market Portfolios

The timing and return dynamics of individual private investments are also important drivers of private market *fund* performance. The J-curve effect shown in Exhibit 2 applies not only to individual investments but also to investment portfolios in private closed-end limited partnerships. As a fund is initiated, GPs solicit investors and obtain capital commitments. Once investment targets are identified, cash outflows occur successively as capital is deployed with no offsetting inflows. The negative cash flows of a fund's early years are expected to be offset by inflows from early investments as the fund becomes closer to fully invested. Once commitments are fully deployed, cash inflows from investments include exit values from specific investments. The following case study illustrates this process and its effect on performance.

CASE STUDY

Tenderledge Investment Fund VIII Performance

Tenderledge Partners, a private equity firm, has successfully generated capital commitments of USD100 million for its new private market investment fund. The fund's GP plans to deploy capital among four assets in three years, with an immediate USD20 million invested, followed by investments of USD40 million, USD30 million, and USD10 million at the end of each of the next three years. Each investment produces three years of uniform cash inflows in the years following investment with a sale four years after initial investment. The following table shows the expected cash flows (in millions of US dollars) and IRRs for each investment asset over their respective four-year time frames.

Cash flows by asset	Initial investment	First cash inflow	Second cash inflow	Third cash inflow	Final cash inflow	Asset IRR
Asset 1	–20	5	5	5	30	29.1%
Asset 2	–40	8	8	8	45	18.6%
Asset 3	–30	3	3	3	42	15.9%
Asset 4	–10	2	2	2	20	32.5%

Tenderledge is screening candidates for an analyst position and shows the previous table along with the previous description of the fund as part of its process for eliminating applicants. In addition to the information about the asset cash flows and IRRs, the following statements are shown:

Statement 1 The arithmetic average of the project IRRs is 24.0%.

Statement 2 The weighted average of the project IRRs is 21.3%.

Statement 3 The sum of the four project cash flows produces an IRR of 21.5%.

1. Discuss one reason why each statement is incorrect regarding the Tenderledge fund IRR.

Solution

Arithmetically averaging across project IRRs shown or simply adding the project cash flows by the year following investment is not a correct methodology. The cash flows of the four projects do not occur within the same time horizons. Thus, neither individual project IRRs nor project cash flows should be aggregated, because doing so ignores the time value of money. Instead, each year's cash flow must be calculated from the individual projects. For example, in Year 3, the sum of the cash flows is USD6 million, consisting of the asset's initial USD10 million cash outflow and cash inflows from the first three assets of USD5 million, USD8 million, and USD3 million, respectively.

The following shows the expected net cash flows for the Tenderledge fund.

USD millions	CF_0	CF_1	CF_2	CF_3	CF_4	CF_5	CF_6	CF_7	Asset IRR
Asset 1	–20	5	5	5	30				29.1%
Asset 2		–40	8	8	8	45			18.6%
Asset 3			–30	3	3	3	42		15.9%
Asset 4				–10	2	2	2	20	32.5%
Net cash flow	**–20**	**–35**	**–17**	**6**	**43**	**50**	**44**	**20**	**21.7%**

Negative net cash flows associated with initial investments dominate through the second year, while cash inflows from exiting investments and asset sale proceeds dominate in Years 4–6. The resulting IRR may be calculated using the IRR spreadsheet function, IRR({*values*},*guess*), as 21.7% [= IRR({–20,–35,–17,6,43,50,44,20},0)].

Private market fund investment IRRs reflect uneven timing of cash flows across the private asset investment life cycle. This timing issue creates challenges for benchmarking IRRs relative to public market returns measured over specific time periods. **Public market equivalent** (PME) methodologies are therefore commonly used to compare returns of private market fund returns with those of public market returns. This approach seeks to translate the uneven cash flows generated by private market

funds into comparable public market returns. A basic PME methodology creates a theoretical public market investment in which private fund cash outflows are invested in a public market index while cash inflows are sold from a public market index. A terminal value is calculated from this hypothetical cash flow stream at the end of the private fund's life. The PME IRR is calculated based on the private fund's cash flows, with the PME terminal value replacing the fund's exit value. The following case study illustrates the PME approach.

CASE STUDY

Glidestone Partners Public Market Equivalent

Glidestone Partners recently closed a CAD70 million private equity fund with a four-year life. The fund's year-end cash flows, a comparable public market index, and its annual returns are shown in the following table.

Year	Glidestone Fund Cash Flow (CAD millions)	Public Market Index	Public Market Return
0	–40	100	NA
1	–30	120	20.00%
2	0	105	–12.50%
3	20	140	33.33%
4	78	150	7.14%

The fund's IRR is 10.50%, and the public market index compound annual return is 10.67%.

1. Discuss why Glidestone should not benchmark its fund's IRR against the public market index compound annual return of 10.67% to assess fund performance.

   Solution

   The public market return is computed as an annual return that ignores the uneven cash flow timing of Glidestone's fund. As a result, Glidestone cannot make a proper comparison to a public benchmark by simply using compound annual return.

2. The following table shows the year-end asset values of a PME for Glidestone's fund. Demonstrate how these amounts are derived using fund cash flows and the annual public market index returns. (Consider any beginning-of-year flows to be received at the end of the previous year.)

Year	Glidestone Fund PME Asset Values (CAD millions)
0	40
1	78
2	68.25
3	71
4	76.07

   Solution

   In Year 0, Glidestone invests CAD40 million in the public market index. During Year 1, Glidestone earns 20% on its CAD40 million initial investment for a return of CAD8 million (8 = 0.2 × 40).

At the beginning of Year 2, Glidestone invests CAD30 million, bringing total portfolio value to CAD78 million (78 = 48 + 30). In Year 2, public market return of –12.5% causes Glidestone's portfolio value to fall to CAD68.25 million [68.25 = 78 × (1 – 0.125)].

In Year 3, Glidestone has no cash inflow, with a 33.33% public market return and a CAD20 million cash outflow to investors at year-end. Thus, its asset value at the end of Year 3 is CAD71 million (= 68.25 × 1.33 – 20).

In Year 4, Glidestone has no cash inflow, and its asset value is assumed to earn the public market return of 7.14%, leading to a PME terminal value of CAD76.07 million (76.07 = 71 × 1.0714).

3. Evaluate whether Glidestone's fund exceeds its benchmark.

Solution

The IRR of the PME based on Glidestone's fund cash flows in Years 0–3 and the PME Year 4 asset value is 9.86% [= IRR({–40,–30,0,20,76.07},0)]. Thus, Glidestone's fund IRR of 10.50% exceeds the PME IRR of 9.86%. By accounting for the timing of Glidestone's cash flows in the context of public market returns, we find the opposite result of the earlier comparison against the public market's compound annual return.

Using a PME methodology provides a theoretically correct mechanism to account for the timing differences when comparing private and public market returns. The PME methodology has evolved over time to account for a variety of difficulties that can occur using the simple approach demonstrated previously. A more significant issue is associated with the choice of public market index. The previous Glidestone case study does not consider whether the public market index chosen reflects a proper public market comparable. For example, the best comparable public market index for a buyout equity fund might be a mid-cap or small-cap index rather than a large-cap index if the fund targets portfolio companies of smaller size. Furthermore, other factors may need to be considered in index selection, such as value versus growth, leverage differences, and other possible differences.

The cash flow stream from the previous case study example illustrates the importance of estimating overall fund returns based on *net* cash outflows and inflows over the life of the fund. The longer investment holding periods associated with investment selection, capital deployment, distribution of returns, and the investment exit processes can vary widely among GPs and private asset classes. As such, fund manager return calculations for limited partners at the overall fund level always incorporate cash flows across the time horizon. However, individual investments made by the fund manager can be assessed by their project IRR, which in some cases may only be computed using initial investments and exit values. For example, venture capital investments typically involve early-stage equity stakes in firms with little or no revenue that are usually sold before any distribution to shareholders takes place. Infrastructure investments, in contrast, frequently include an asset transfer to a public entity at the end of an operating period, where all shareholder returns are in the form of distributions prior to the end of the investment period.

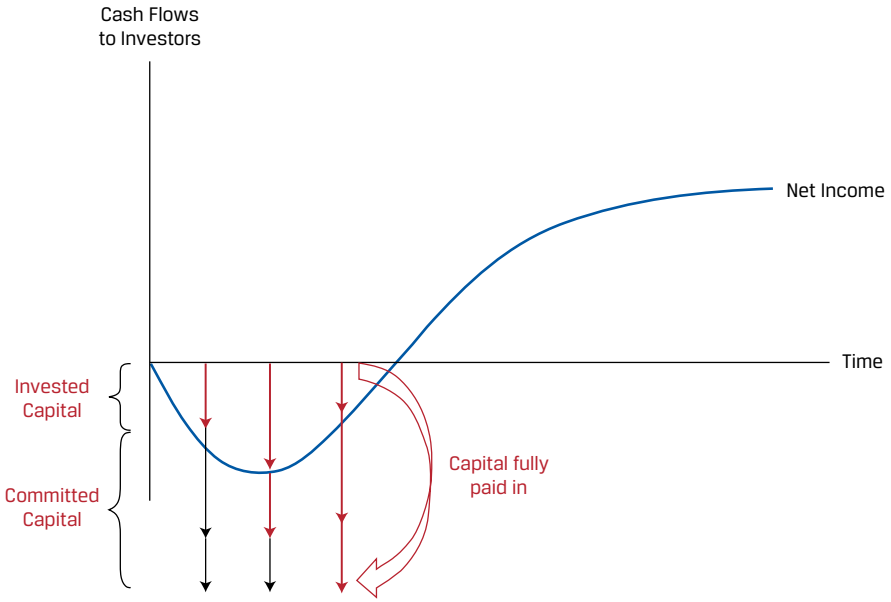
To capture these and other differences in capital deployment, as well as returns over time and across investments, GPs commonly provide several return multiples to LPs to quantify and compare performance, which are introduced next.

Private Market Fund Multiples

In addition to IRR, GPs communicate performance to LPs using various return multiples, which offer more detail than the simple return on investment measure over the entire investment life cycle. Although these multiples also ignore the time value of money and the investment holding period, their ease of calculation and ability to differentiate between realized proceeds and the unrealized portfolio, as well as different types of return, make these ratios popular among limited partners.

The first of these multiples, **paid-in capital (PIC)**, addresses the proportion of total capital committed that has been deployed to date, as shown in Exhibit 12 and Equation 4.

Exhibit 12: Paid-In Capital

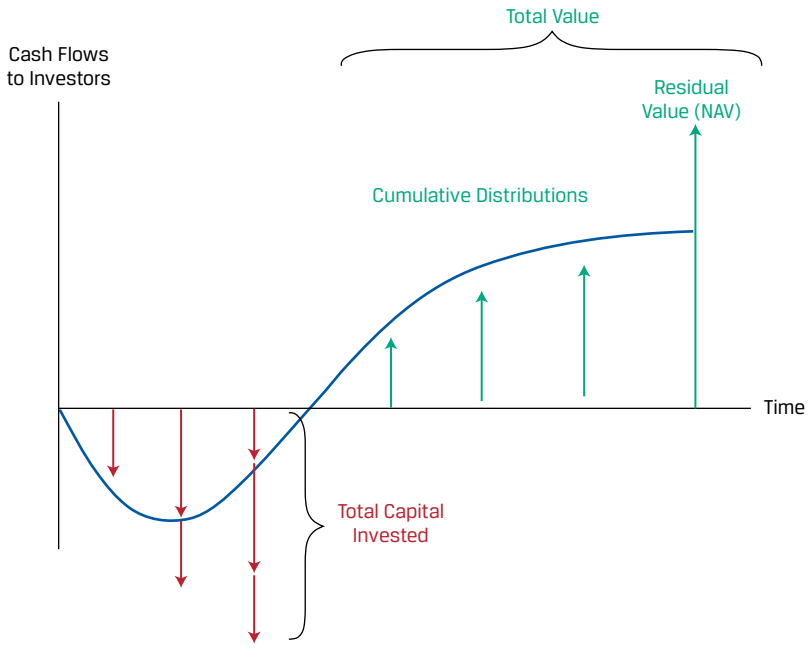


$$\text{PIC} = \frac{\text{Capital invested}}{\text{Total capital committed}}. \tag{4}$$

As Exhibit 12 suggests, PIC measures the degree to which the drawdown phase of the investment life cycle is complete, allowing LPs to compare similar investments across both GPs and vintage years, as well as across private asset classes. For example, an LP may expect an initial lower PIC for vintage years with adverse market conditions, as GPs become more selective and find fewer attractive investment opportunities. PIC is also used as an indicator for when the GP may return to market to raise a new fund. For example, GPs may raise a new fund when PIC reaches 75%.

The remaining multiples evaluate investor returns in the form of realized distributions and the net asset value, or *unrealized* value of investment, as compared to capital invested. Exhibit 13 illustrates these realized and unrealized returns in the context of the investment life cycle shown earlier.

Exhibit 13: Distributed, Residual, and Total Value to Capital Invested



The first return measure is **distributed to paid-in (DPI)**, or the ratio of cumulative distributions to LPs to the capital invested. This measure indicates an investor's realized return on investment, often called the cash-on-cash return:

$$\text{DPI} = \frac{\text{Cumulative distributions}}{\text{Total capital invested}}. \tag{5}$$

Residual value to paid-in (RVPI) is the fund's net asset value (NAV) as a proportion of the total invested capital. Because the NAV reflects the value of the fund's remaining portfolio, this ratio is a measure of the investor's unrealized return on investment.

$$\text{RVPI} = \frac{\text{Net asset value}}{\text{Total capital invested}}. \tag{6}$$

The overall investment value to the LP, **total value to paid-in (TVPI)**, incorporates both the cumulative distributions received and the NAV as a proportion of invested capital. TVPI is the sum of DPI and RVPI.

$$\text{TVPI} = \frac{\text{Cumulative distributions} + \text{Net asset value}}{\text{Total capital invested}}. \tag{7}$$

$$\text{TVPI} = \text{DPI} + \text{RVPI}. \tag{8}$$

Average TVPIs of close to 3× are common in emerging, high-growth industries, such as information technology, and TVPIs near 2× are common in more mature industries, such as consumer goods. When considered gross of fees, which are addressed later, the TVPI is sometimes referred to as the **multiple of invested capital (MOIC)** or **multiple of money (MOM)**.