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Using private equity in your portfolio

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There may be conflicts of interest relating to a mutual fund(s) or an alternative investment product(s) and its service providers, including Bank of America Corporation, and its affiliates, who are engaged in businesses and have clear interests other than that of managing, distributing and otherwise providing services to the mutual fund or alternative investment. These activities and interests include potential multiple advisory, transactional and financial and other interests in securities and instruments that may be purchased or sold by the mutual fund or alternative investment, or in other investment vehicles that may purchase or sell such securities and instruments. These are considerations of which investors in the mutual fund or alternative investment should be aware.

Investors should bear in mind that the global financial markets are subject to periods of extraordinary disruption and distress. During the financial crisis of 2008–2009, many private investment funds incurred significant or even total losses, suspended redemptions, or otherwise severely restricted investor liquidity, including increasing the notice period required for redemptions, instituting gates on the percentage of fund interests that could be redeemed in any given period and creating side pockets and special-purpose vehicles to hold illiquid securities as they are liquidated. Other funds may take similar steps in the future to prevent forced liquidation of their portfolios into a distressed market. In addition, investment funds implementing alternative investment strategies are subject to the risk of ruin and may become illiquid under a variety of circumstances, irrespective of general market condition

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Are Not FDIC Insured	**Are Not Bank Guaranteed**	**May Lose Value**

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Important risk information

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Certain risks associated with investing in alternative investments

- Alternative investments are speculative and involve a high degree of risk.
- Alternative investment trade on a leveraged basis which increases the risk of loss.
- Performance can be volatile.
- An investor could lose all or a substantial amount of his or her investment.
- The use of a single fund-of-funds manager applying one set of allocation procedures could mean lack of diversification and, consequently, higher risk.
- There is no secondary market for the investor's interest in the fund and none is expected to develop.
- There may be restrictions on transferring interests in the alternative investment.
- High fees and expenses may offset the underlying manager's trading profits.
- A substantial portion of the trades executed by the underlying managers may take place on non-U.S. exchanges.
- **Past performance is not indicative of future results.**
- Alternative investments may require tax reports on Schedule K-1 to be prepared. As a result, investors may be required to obtain extensions for filing federal, state, and local income tax returns each year.
- In addition to the foregoing risks, each alternative investment fund is subject to its own strategy-specific or other risks. Clients must carefully review the offering memorandum for any particular fund and consider their ability to bear these risks before any decision to invest.

Please keep the following general risks in mind when investing in private equity funds:

- A private equity investment involves significant risks and will be illiquid on a long-term basis. Investors may lose their entire investment.
- Private equity managers typically take several years to invest a fund's capital. Investors will not realize the full benefits of their investment in the near term and there will likely be little or no near-term cash flow distributed by the fund during the commitment period. Interests may not be transferred, assigned or otherwise disposed of without the prior written consent of the manager.
- Private equity funds are subject to significant fees and expenses, including management fees and, typically, a 20% carried interest in the net profits generated by the fund paid to the manager (or similarly situated party). Private equity fund investments are affected by complex tax considerations.
- Private equity funds may make a limited number of investments, and such investments generally will involve a high degree of risk, such as start-up ventures with little or no operating histories, or companies that may utilize significant leverage. In addition, funds may make minority equity investments where the fund may not be able to protect its investment or control or influence effectively the business or affairs of such entities. The performance of a fund may be substantially adversely affected by a single investment. Private equity funds may be less transparent than public investments and private equity fund investors are afforded less regulatory protections than investors in registered public securities.
- Private equity funds may obtain rights to participate substantially in, and to influence substantially, the conduct of the management of certain portfolio companies, including the ability to designate directors. This or other measures could expose the assets of the private equity fund to claims by a portfolio company, its security holders, creditors and others.
- Private equity fund investors are subject to periodic capital calls. Failure to make required capital contributions when due will cause severe consequences to the investor, including possible forfeiture of all investments in the fund made to date.

Private equity can help enhance portfolio returns

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Traditional portfolios

only include access to **Asset Appreciation** & **Income** from **stocks** and **bonds**.

Private Equity

may provide a higher return than traditional stocks and bonds.

It offers an **Illiquidity Premium** – compensation for investors committing their capital for a longer period of time.

In addition, private equity managers seek to improve the operations of the companies they invest in – a form of **Active Management** – thereby potentially creating even more value.

What is private equity?

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Pools of **actively managed capital**

Organized to **invest primarily in privately held companies**

Seeks to **identify promising or underperforming businesses**

Attempts to profit by **creating value in the businesses over time**

The underlying **holdings are generally illiquid**

Private equity funds can also invest in public companies and securities.

What are private equity funds?

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Private equity funds purchase equity and debt securities of **privately held companies** (or of public companies that they plan to convert into private companies)

The funds **work actively** with the companies in which they have invested and seek to grow the value of their businesses, either by reducing inefficiency or by expanding into new markets

Private equity funds are **long term investors** and typically hold each of their investments for 5 to 7 years

Private equity firms hope to sell these companies for significantly more than they paid and **generate attractive returns** for their investors

Private equity investors should be prepared to hold their investments for **10+ years**

Private equity provides incremental returns to your portfolios in exchange for giving up liquidity

Private equity provides incremental returns in exchange for giving up liquidity

Annualized Return

20%
15%
10%
5%
0%
-5%

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017

Cambridge Associates U.S. Private Equity Index — S&P 500 TR Index — Bloomberg Barclays U.S. Agg TR Index

Past performance is no guarantee of future results. Source: CIO. Data as of December 31, 2017 (most current data available). The indexes shown are provided for illustrative purposes only. They do not represent benchmarks or proxies for the return of any particular security holding or alternative investment. The indexes referred in this document do not reflect the performance of any individual account. Indices are unmanaged, include the reinvestment of dividends, do not reflect the impact of management or performance fees and are not available for investment. One cannot invest directly in an index. **See appendix at end of this presentation for index definitions and additional information.**

How does private equity work?

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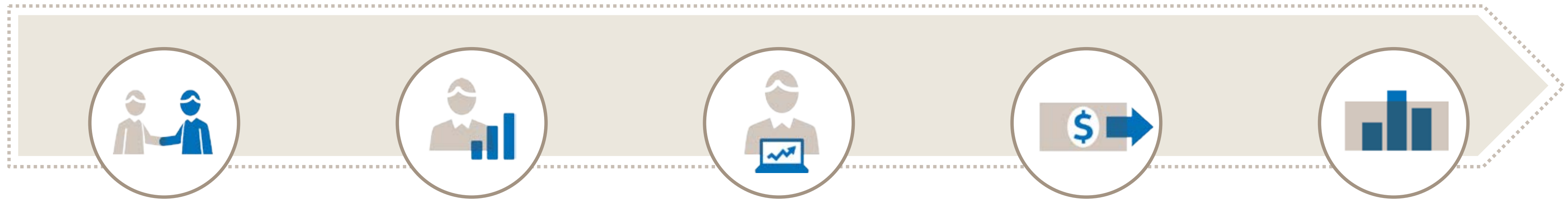

Limited partners (investors) invest in a private equity fund by committing capital up front to be "called" or invested over time.

General partner (fund manager) invests the fund's assets in promising companies or underperforming businesses.

General partner creates value in companies by improving operations, enhancing the capital structure and/or making changes to company management.

Fund realizes (exits) the investment in one of three ways:

- Initial public offering
- Sale to strategic buyer or another private equity firm
- Company buyback

Limited partners receive profits from the exit. Generally, investors must receive a minimum return before the fund manager can collect an incentive fee.

General partner's performance-based compensation creates alignment of interest with the fund's performance

For illustrative purposes only.

The typical private equity investment cycle — the ‘J curve’

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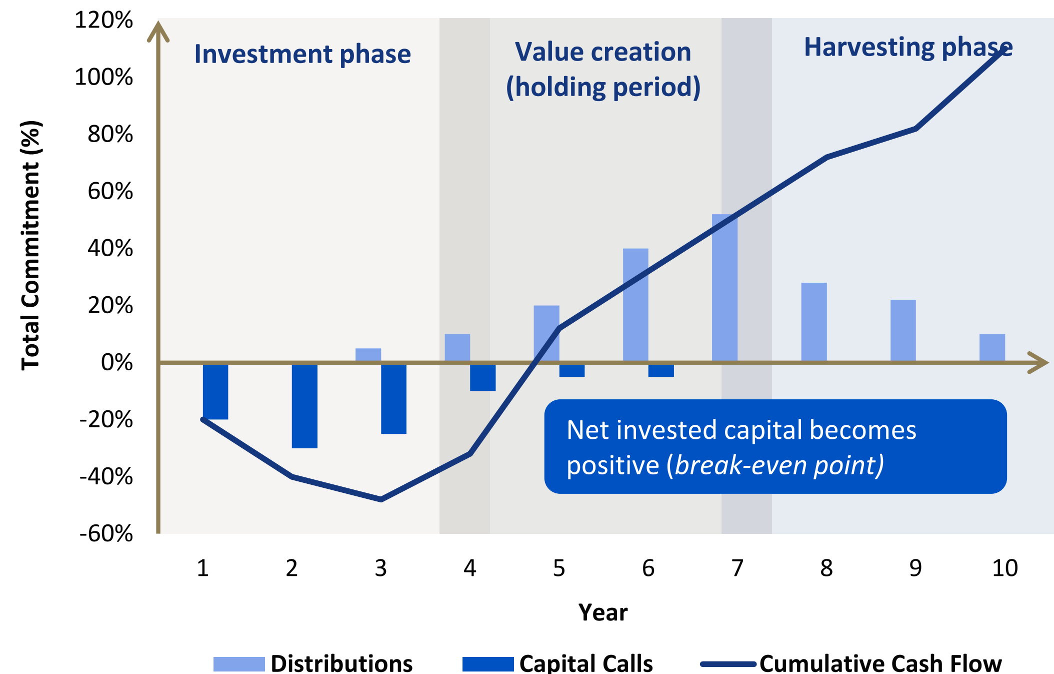
- Investors typically put their capital to work during the **investment period** – usually the first 3–5 years of the fund
- Fund managers **call capital** only as needed for new and follow-on investments
- **Dollar cost averaging** concept helps minimize cash drag to investors[2]
- **Distributions** flows back to investors as investments are realized
- Investors are typically not fully out of pocket all at once for the full commitment amount

Sample cash flow analysis[1]



Most private equity funds have long time horizons before the fund manager’s actions produce gains for investors

For illustrative purposes only.

[1]**This is a simplified example and does not represent the performance of an actual company or fund. Private equity investments involve substantial risk.** There can be no assurance that actual fund cash flows will be similar to the model set forth on this slide. Cash flow patterns will vary depending on the activities of the underlying private equity partnerships. Depending on the strategy, the “J curve” can vary. Source: ISG Alternative Investments group.

[2] Keep in mind dollar cost averaging cannot guarantee a profit or protect against loss in declining markets. Since such an investment plan involves continual investment in securities regardless of fluctuating price levels, you should consider your willingness to continue purchasing during periods of high and low price levels.

Understanding private equity performance

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Private equity fund returns are not calculated in the same manner as traditional assets because the commitment may not be fully invested.

Two generally accepted measures of private equity returns

Internal rate of return (IRR)

- Typically defined as discount rate that sets net present value of a series of cash flows equal to zero
- Takes into account the time value of money
- May emphasize investments that return capital early in the investment cycle or were realized quickly

Multiple of invested capital (MOIC)

- Ratio of the money returned to the money invested
- May correct one of the main drawbacks of IRR: placing too much weight on early distributions or quick realizations
- Does not take into account the time value of money

Cash flows	Year 1	Year 2	Year 3	Year 4	Year 5	**Annual IRR**	**Return Multiple**
Investment A	($250)	($750)	$1,450	$0	$50	**36%**	**1.5x**
Investment B	($500)	($500)	$750	$250	$1,000	**31%**	**2.0x**

IRR values time value of money while return multiple values total return regardless of time

For illustrative purposes only and does not represent the performance, or cash flow, of an actual company or fund. Please see appendix at the end of this document for term definitions.

Private equity includes a diverse set of strategies

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Strategies differ in their investment approach, the markets they trade and their risk/return characteristics

Leveraged buyout funds acquire companies using a significant amount of borrowed money. They streamline operations and improve cash flows and exit these investments by selling them to a strategic acquirer, or through an initial public offering.

Private credit funds provide debt financing through direct lending or mezzanine investments. Direct lenders will make senior secured loans, and mezzanine investors often make unsecured loans that include upside participation.

Venture capital funds invest in start-up companies that have attractive growth prospects. These investments tend to be quite risky, as the underlying businesses may compete in nascent industries, or have unproven business models.

Special situations funds invest in companies that are undergoing financial distress, or purchase assets from financial institutions who are looking to reduce the risk on their balance sheet.

Funds may also utilize two or more of these strategies in a multi-strategy approach to investing to private equity

Top endowments allocate significantly to private equity

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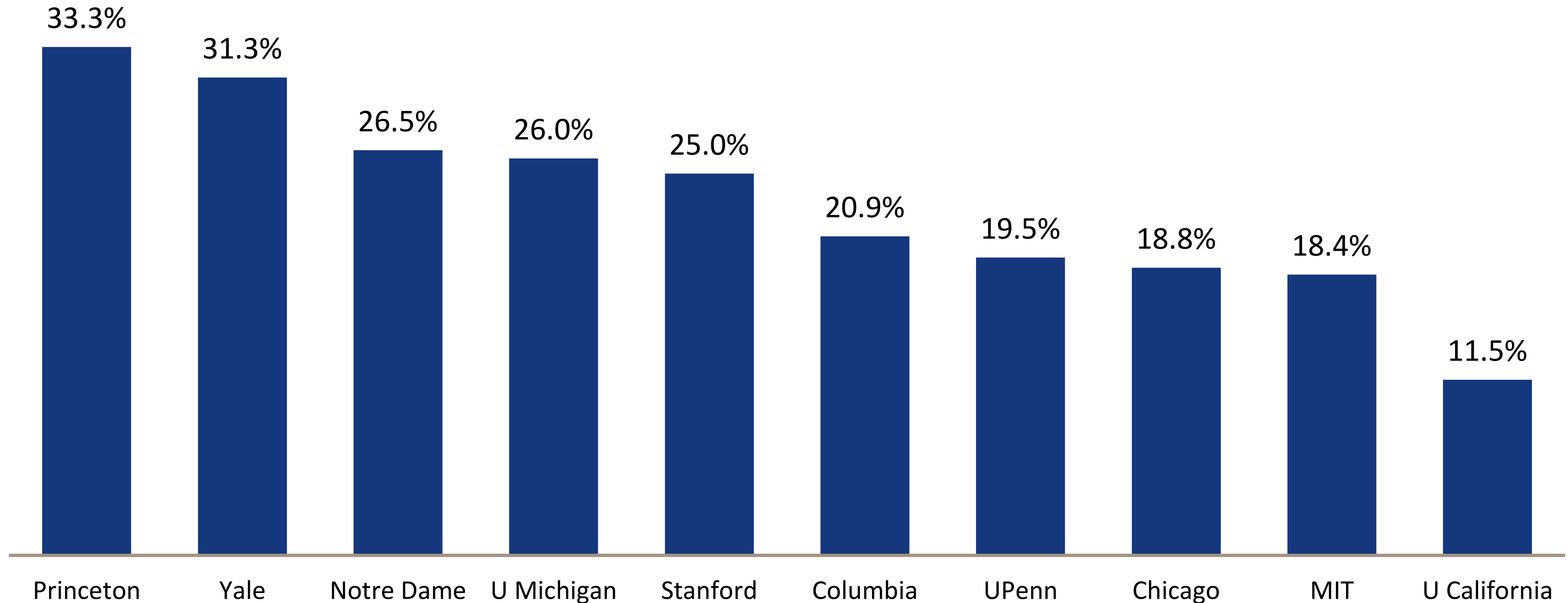

The longer investment horizons and limited liquidity needs for endowments enable them to average a 23% allocation to private equity

Note: Allocations represent fiscal year 2017 actuals. **Past performance not indicative of future results.** Based on data available from endowment websites, Bloomberg, and various web based sources. See sources and disclosures regarding endowments at the end of this presentation.

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Investing in private equity

Allocating to private equity

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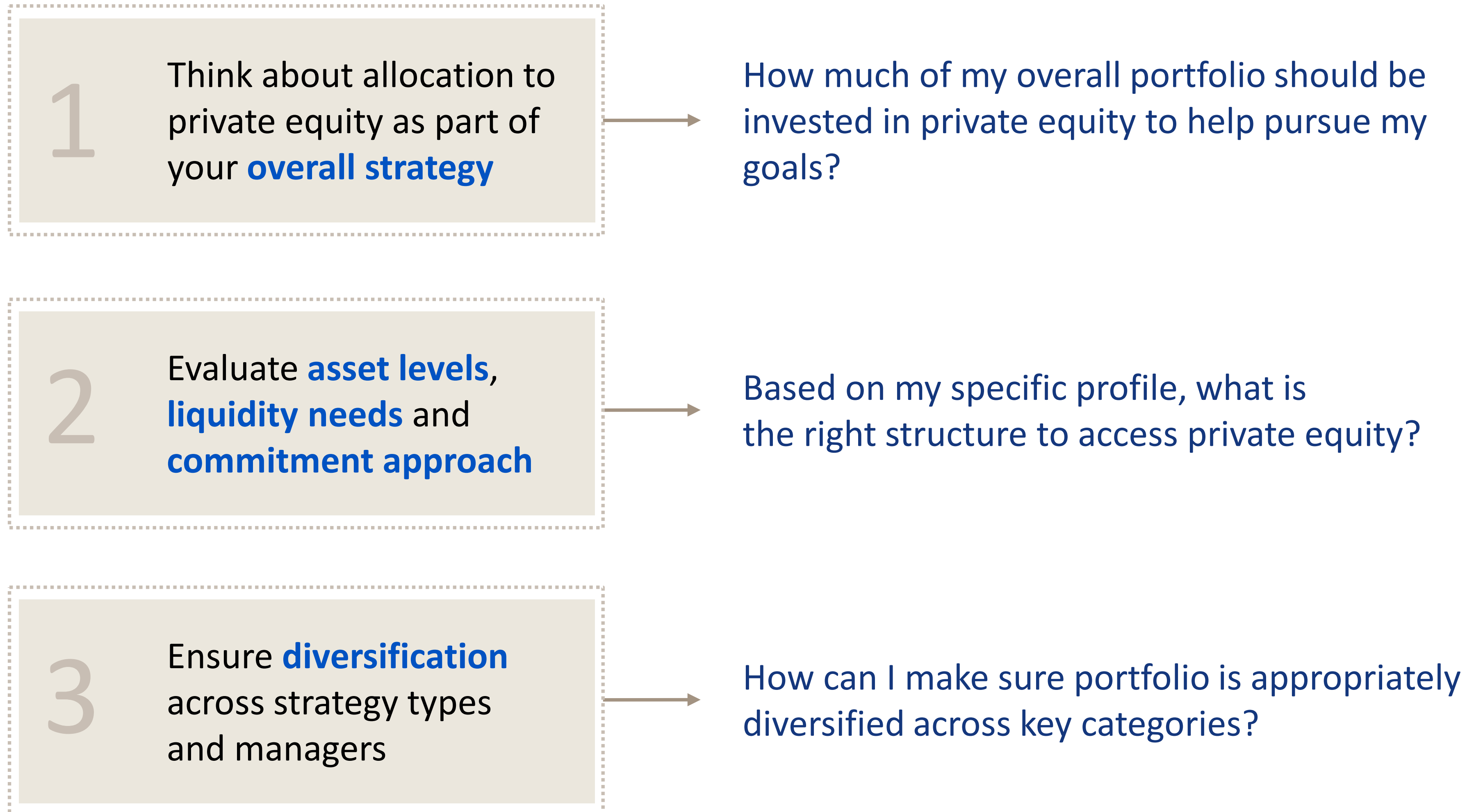

Asset allocation and diversification do not ensure a profit or protect against loss in declining markets.

Various structures exist to access private equity

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Multi-strategy funds

Perpetually offered fund-of-funds[1]

- "Evergreen" offering that allows client investment and submission of redemptions on ongoing basis through a single committment[1]
- Offers diversified approach by strategy, vintage year, and/or geography

Fund-of-funds

- Professionally managed partnership investing in single-manager private equity funds
- Offers a diversified approach (generally 20-30 managers), often difficult to replicate

Single Investor Fund

- Customized portfolio managed by third-party asset manager
- Structured as separate fund with only one investor

Individual private equity funds

- Single manager funds, generally single strategy, investing in ~15-30 companies
- Feeder fund organized to pool investors' commitments to "funnel" into single-manager direct funds, offering access to investments at lower minimum levels
- For larger minimums, investors may be able to invest directly in the underlying fund

Co-investments[2]

- Investment into a company alongside a private equity manager
- Concentration risk, due to single company investment, direct limited partner

[1] Generally registered under the 1940 Act and in certain cases the 1933 Act
[2] Co-investment amounts will vary by size of transaction; amount rewarded will typically vary by percent ownership in the fund and minimums ($1 million+)
Diversification does not ensure a positive return or protect against loss in declining markets.

Building your private equity portfolio

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Utilize external expertise

Invest in a **perpetual offered fund-of-funds** or a **fund-of-funds** providing diversified access private equity strategies in a single fund

For larger clients, create a **single investor fund** that is customized and expertly managed by a leading third-party manager

Do it yourself

Select a diversified range of **individual private equity funds**—at least 15 to 20 managers over time for proper diversification—leveraging the advice and guidance of the Chief Investment Office

You can also use a combination of multi-strategy and individual private equity funds to build a core portfolio with opportunistic complements

Various factors should be considered when building a diversified private equity portfolio

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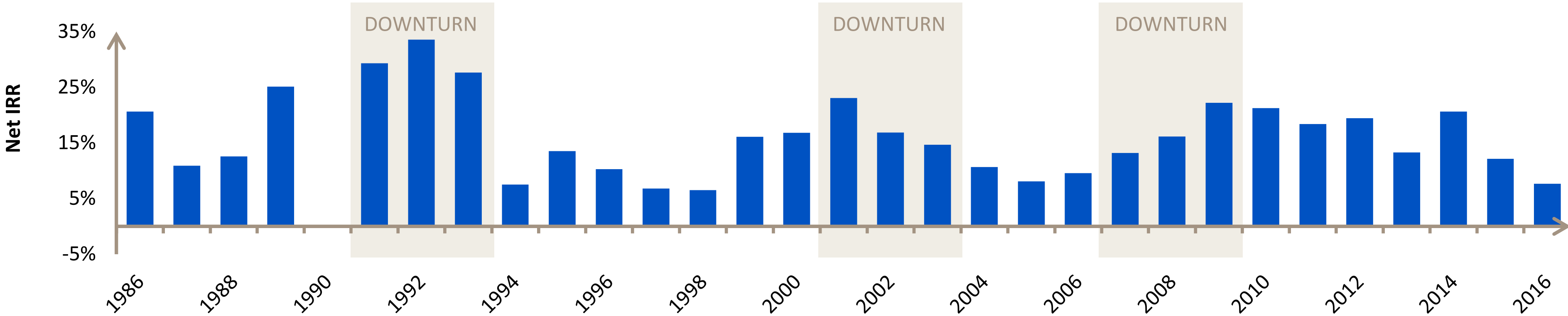
Commitment amount: Most private equity funds invest capital over time. To ensure the desired level of investment to private equity, you may need to over-commit by up to 50% in order to reach a target allocation

Strategy allocation: Constructing a balanced portfolio across strategies provides diversification and helps improve overall performance over an investment cycle

Manager diversification: Selecting the "right" number of managers is an important decision in building portfolios. The decision will vary based on the way you chose to implement private equity

Vintage year diversification: A "vintage year" refers to the year in which a private equity fund starts making investments. Performance differs significantly across vintage years. Spreading your commitments over three to five years allows you to diversify your returns

Returns of U.S. buyout funds by vintage year



U.S. buyout funds launched during economic downturns have shown some of the best returns

A downturn is a negative change in the economy, such as from expansion to recession. Diversification does not ensure a profit or protect against loss in declining markets.
Past performance is no guarantee of future results. Private equity returns are as of June 30, 2018 (most current data available). Source: Cambridge Associates.
Vintage year 2017-2018 funds are excluded since their returns are not yet meaningful. See page 9 for description of "j curve."

Incorporating alternative investments into your asset mix

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	Cons	Mod Cons	Mod	Mod Agg.	Agg.
Stocks	17%	32%	47%	60%	73%
Bonds	55%	51%	34%	18%	3%
Cash	15%	2%	2%	2%	2%
Alternative investments	13%	15%	17%	20%	22%
Hedge Funds	6%	8%	9%	10%	11%
Private Equity	2%	3%	4%	6%	7%
Real Assets*	5%	4%	4%	4%	4%

The recommended weights are generated by the Research Investment Committee (“RIC”) Report.

Strategic allocations are hypothetical and are not intended to indicate specific investment recommendations or advice. Asset allocation cannot eliminate the risk of fluctuating prices, uncertain returns, or involves substantial risk, and should not constitute a complete investment program.

* “Real Assets” defined to include commodities and private real estate.
Recommended AI weights are for investors with moderate liquidity preferences, following CIO Tier 2 liquidity guidelines (moderate liquidity; up to 30% of the portfolio may be unavailable for 3-5 years). CIO, June 2018.

Key aspects of private equity

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Potential Benefits

- Use private equity to pursue long-term capital appreciation goals.
- Diversify your portfolio by investing in private assets that may help enhance overall return and reduce volatility.[1]
- Access investments that are not freely tradable on public stock markets.
- Historically, top-tier private equity managers have delivered returns in excess of the public equity market.

Risk Considerations

- Even as the underlying investments may be appreciating, the value of a private equity portfolio may remain understated until investments are sold.
- Investments in private equity involve a high degree of risk and should be undertaken only by qualified investors.
- These funds can be illiquid and typically require an investment horizon of 10 to 12 years.
- Private equity investments are often highly speculative, leveraged, volatile and subject to long holding periods.
- Private equity investments typically issue Schedule K-1 tax reporting, which may require filing of tax extensions.
- It is possible to lose your entire investment.

Past performance is no guarantee of future results.

[1]Asset allocation and diversification does not ensure a profit or protect against loss in a declining market.

Private equity at Merrill Lynch

Broad private equity and real assets experience

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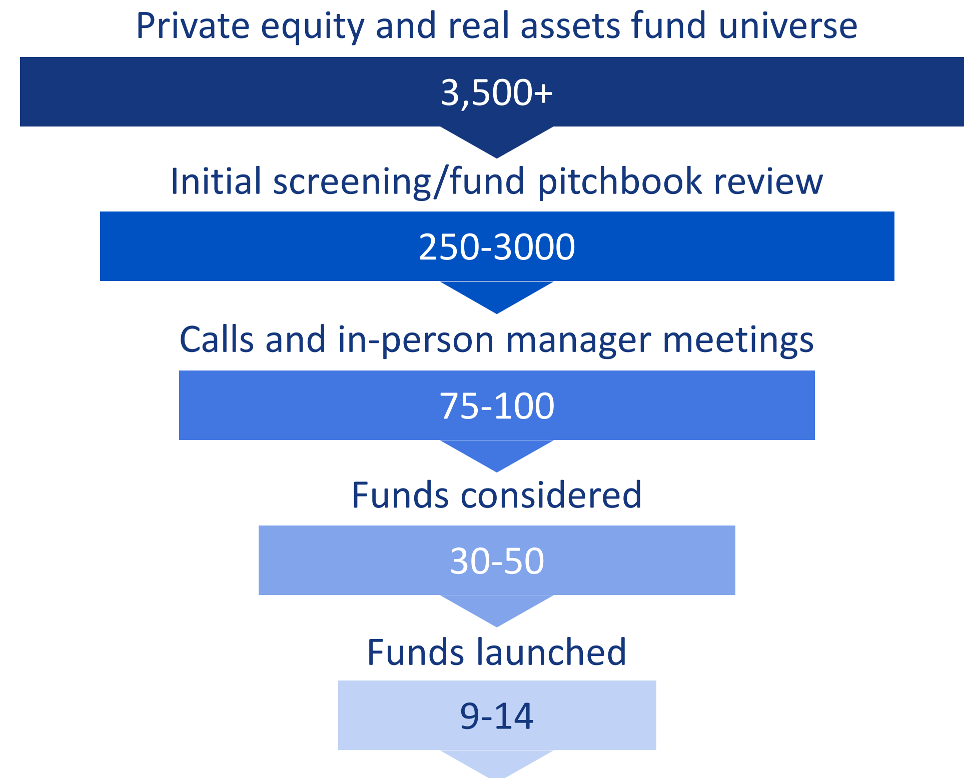
$22B **in client balances** to private equity and real assets[1]

$9.3B **distributed to clients** since 2009[2]

88 **funds** with **43 managers** launched since 2009[2]



[1] Source: Bank of America. The Investment Solutions Group Alternative Investments group is part of Global Wealth and Investment Management (GWIM), the wealth and investment management division of Bank of America Corporation. As of June 30, 2018, GWIM clients had client balances (Client Balances) of approximately $49.55 billion in their GWIM accounts invested in alternative investment products. Alternative investment products include hedge funds, managed futures funds, private equity funds, nontraditional mutual funds and real assets. Client Balances includes assets invested (i) in funds or accounts under the discretionary management of GWIM entities (Assets Under Management);(ii) in products sponsored but not advised by GWIM entities; and (iii) in products sponsored or managed by unaffiliated third-party investment managers. Client balances invested in private equity funds include total committed but uncalled capital for funds in their initial commitment period. **This reflects a change in calculation methodology effective June 30, 2013, to include nontraditional mutual fund assets.**

[2] Source: ISG Alternative Investments group. Information as of January 1, 2009, through October 19, 2018.

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Capital commitment: Every investor in a private equity fund commits to investing a specified sum of money in the fund partnership over a specified period of time. The fund records this as the limited partnership's capital commitment. The sum of capital commitments is equal to the size of the fund. Limited partners and the general partner must make a capital commitment to participate in the fund.

Carried interest: The share of profits that the fund manager is due once it has returned the cost of investment to investors. Carried interest is normally expressed as a percentage of the total profits of the fund. The industry norm is 20%. The fund manager will normally therefore receive 20% of the profits generated by the fund and distribute the remaining 80% of the profits to investors.

Co-investment: Although used loosely to describe any two parties that invest alongside each other in the same company, this term has a special meaning when referring to limited partners in a fund. If a limited partner in a fund has co-investment rights, it can invest directly in a company that is also backed by the private equity fund. The institution therefore ends up with two separate stakes in the company — one indirectly through the fund and one directly in the company. Some private equity firms offer co-investment rights to encourage institutions to invest in their funds. The advantage for an institution is that it could see a higher return than if it invested all its private equity allocation in funds — it doesn't have to pay a management fee and won't see at least 20% of its return swallowed by a fund's carried interest. But to co-invest successfully, institutions need to have sufficient knowledge of the market to assess whether a co-investment opportunity is a good one.

Distressed debt (otherwise known as vulture capital): This is a form of finance used to purchase the corporate bonds of companies that have either filed for bankruptcy or appear likely to do so. Private equity firms and other corporate financiers who buy distressed debt don't asset-strip and liquidate the companies they purchase. Instead, they attempt to restore them to health and then prosperity. These buyers first become a major creditor of the target company. This gives them leverage to play a prominent role in the reorganization or liquidation stage.

Due diligence: Investing successfully in private equity at a fund or company level involves thorough investigation. As a long-term investment, it is essential to review and analyze all aspects of the deal before signing. Capabilities of the management team, performance record, deal flow, investment strategy and legal are examples of areas that are fully examined during the due diligence process.

Exit: Private equity professionals have their eye on the exit from the moment they first see a business plan. An exit is the means by which a fund is able to realize its investment in a company — by an initial public offering, a trade sale, selling to another private equity firm or a company buyback. If a fund manager can't see an obvious exit route in a potential investment, then it won't touch it. Funds have the power to force an invested company to sell up so they can exit the investment and make their profit, but venture capitalists claim this is rare — the exit is usually agreed with the company's management team.

Feeder fund: An investment fund that does almost all its investments through a master fund via a master-feeder relationship. It is a situation similar to a fund of funds, except that the master fund performs all the investments.

Fund of funds: A fund set up to distribute investments among a selection of private equity fund managers, who in turn invest the capital directly. Funds of funds are specialist private equity investors and have existing relationships with firms. They may be able to provide investors with a route to investing in particular funds that would otherwise be closed to them. Investing in funds of funds can also help spread the risk of investing in private equity because they invest the capital in a variety of funds.

Terms and definitions

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General partner: This can refer to the top-ranking partners at a private equity firm as well as the firm managing the private equity fund.

Holding period: This is the length of time that an investment is held. For example, if Company A invests in Company B in June 1996 and then sells its stake in June 1999, the holding period is three years.

Initial public offering (IPO): An IPO is the official term for “going public.” It occurs when a privately held company — owned, for example, by its founders plus perhaps its private equity investors — lists a proportion of its shares on a stock exchange. IPOs are an exit route for private equity firms. Companies that do an IPO are often relatively small and new and are seeking equity capital to expand their businesses.

Internal rate of return (IRR): This is the typical performance benchmark for private equity investments. In simple terms, it is a time-weighted return expressed as a percentage. IRR uses the present sum of cash drawdowns (money invested), the present value of distributions (money returned from investments) and the current value of unrealized investments and applies a discount. The general partner’s carried interest may be dependent on the IRR. If so, investors should get a third party to verify the IRR calculations.

Lead investor: The firm or individual that organizes a round of financing and usually contributes the largest amount of capital to the deal.

Leveraged buyout (LBO): The acquisition of a company using debt and equity finance. As the word *leverage* implies, more debt than equity is used to finance the purchase (for example, 90% debt to 10% equity). Normally, the assets of the company being acquired are put up as collateral to secure the debt.

Limited partners: Institutions or individuals that contribute capital to a private equity fund. LPs typically include pension funds, insurance companies, asset management firms and fund-of-funds investors.

Limited partnership: The standard vehicle for investment in private equity funds. A limited partnership has a fixed life, usually of 10 years. The partnership’s general partner makes investments, monitors them and finally exits them for a return on behalf the investors — limited partners. The GP usually invests the partnership’s funds within three to five years, and for the fund’s remaining life the GP attempts to achieve the highest possible return for each of the investments by exiting. Occasionally, the limited partnership will have investments that run beyond the fund’s life. In this case, partnerships can be extended to ensure that all investments are realized. When all investments are fully divested, a limited partnership can be terminated or “wound up.”

Management buyout (MBO): A private equity firm will often provide financing to enable current operating management to acquire or buy at least 50% of business it manages. In return, the private equity firm usually receives a stake in the business. This is one of the least risky types of private equity investment because the company is already established and the managers running it know the business — and the market it operates in — extremely well.

Multiple of invested capital (MOIC): Refers to the amount returned on an investment as a multiple of the initial investment amount. For example if an investor buys a company for $100 and sells it for $200, MOIC would be 2x.

Management fee: This is the annual fee paid to the general partner. It is typically a percentage of limited partner commitments to the fund and is meant to cover the basic costs of running and administering a fund. Management fees tend to run in the 1.5% to 2.5% range, and they often scale down in the later years of a partnership to reflect the GP’s reduced workload. The management fee is not intended to incentivize the investment team; carried interest rewards managers for performance.

Terms and definitions

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Portfolio: A private equity firm will invest in several companies, each of which is known as a portfolio company. The spread of investments into the various target companies is referred to as the portfolio.

Preferred return: This is the minimum amount of return that is distributed to the limited partners until the time when the general partner is eligible to deduct carried interest. The preferred return ensures that the general partner shares in the profits of the partnership only after investments have performed well.

Private equity: This refers to the holding of stock in unlisted companies — companies that are not quoted on a stock exchange. It includes forms of venture capital and MBO financing.

Private placement: When securities are sold without a public offering, this is referred to as a private placement. Generally, this means that the stock is placed with a select number of private investors.

Public equity: Equity capital invested in a public market.

Venture capital: The term given to early-stage investments. There is often confusion surrounding this term. Many people use the term *venture capital* very loosely when what they actually mean is private equity.

Vintage year: The year in which a private equity fund makes its first investment.

Index definitions

Merrill Lynch
Bank of America Corporation

The indexes shown are provided for illustrative purposes only. They do not represent benchmarks or proxies for the return of any particular security holding or alternative investment. The indexes referred in this document do not reflect the performance of any individual account. Indices are unmanaged, include the reinvestment of dividends, do not reflect the impact of management or performance fees and are not available for investment. One cannot invest directly in an index.

ISG AI group assumes no responsibility for any of the foregoing performance information, which has been provided by the index sponsor. Neither ISG AI group nor the index sponsor can verify the validity or accuracy of the self-reported returns of the managers used to calculate the index returns. ISG AI group does not guarantee the accuracy of the index returns and does not recommend any investment or other decision based on the results presented.

Reference to indexes or other measures of relative market performance over a specified period of time (each, an "index") are provided for illustrative purposes only and do not imply that any Merrill Lynch account, fund or portfolio will achieve returns or volatility results similar to the index. The figures for the index reflect the reinvestment of dividends but do not reflect the deduction of any fees or expenses which would reduce returns. Investors cannot invest directly in indexes. We strongly recommend that these factors be taken into consideration before an investment decision is made.

S&P 500 (Standard & Poor's 500): A market-capitalization-weighted index that measures the market value of 400 industrial stocks, 60 transportation and utility company stocks and 40 financial issues.

Cambridge Associates Private Equity US Total Return: Performance data is calculated quarterly by Cambridge Associates and published by Thomson Reuters Venture Economics' Private Equity Performance Database which tracks the performance of thousands of US and European venture capital and buyout funds formed since 1969. Sources are financial documents and schedules from Limited Partners investors and General Partners. All returns are calculated net to investors (net of fees and carried interest) by Thomson Venture Economics from the underlying financial cash-flows using both cash on cash returns (distributions and capital calls) and the unrealized net asset value of funds as reported by private equity fund managers. The "US" category includes only US funds. The "All Venture" category includes data from early / seed, and later-stage financing. Historical data is revised when funds are added or removed.

Important sources

Merrill Lynch
Bank of America Corporation

Sources for endowments allocations and returns :

Investors should bear in mind that these university endowments are highly sophisticated investors with vast resources, long time horizons and very limited need for liquidity in the short term. The universe of investment opportunities available to these endowments is much larger than that available to individual investors. Many endowments have access to managers who are not open to other investors. The funds available through the respective university endowments does not mirror the portfolio of any particular university endowment or approach the depth of opportunities available to them. There is a wide range of target asset allocations among university endowments and these allocations are subject to change at any time. For example, during the financial crisis many endowments reduced allocations to alternative investments, particularly private equity, only to later increase those allocations.

Yale University	https://news.yale.edu/2017/10/10/investment-return-113-brings-yale-endowment-value-272-billion https://www.barrons.com/articles/yales-endowment-learns-hard-diversification-lesson-1510867491 https://static1.squarespace.com/static/55db7b87e4b0dca22fba2438/t/5ac5890e758d4611a98edd15/1522895146491/Yale_Endowment_17.pdf
Princeton University	https://finance.princeton.edu/princeton-financial-overv/report-of-the-treasurer/2016-2017.pdf
University of Pennsylvania	http://www.thedp.com/article/2017/12/university-finances-tax-plan-endowment-upenn-philadelphia-year-2017 http://www.finance.upenn.edu/vpfinance/AnnualRpt/Financial_Report_FY17.pdf
Columbia University	http://finance.columbia.edu/files/gateway/content/reports/financials2017.pdf http://www.columbiaspectator.com/news/2017/10/18/columbia-university-endowment-increases-to-over-10-billion-reports-134-percent-return/ https://www.bloomberg.com/news/articles/2017-10-17/columbia-university-posts-13-7-return-with-ceo-holland-at-helm
Stanford University	http://www.smc.stanford.edu/sites/default/files/site_files/Report%20from%20SMC%202017.pdf
Massachusetts Institute of Technology	https://vpf.mit.edu/sites/default/files/downloads/TreasurersReport/MITTreasurersReport2017.pdf
University of Michigan	https://publicaffairs.vpcomm.umich.edu/wp-content/uploads/sites/19/2018/02/2017-Endowment-Profile.pdf
The University of California	http://invest.universityofcalifornia.edu/opportunity.html
University of Notre Dame	https://controller.nd.edu/assets/260907/annual_report_2017.pdf
The University of Chicago	http://finserv.uchicago.edu/sites/finserv.uchicago.edu/files/uploads/Documents/doc/F_666275_RESTRICTED_17_TheUniversityofChicago_FS.pdf
NACUBO-Commonfund Study of Endowments 2017	http://www.nacubo.org/Research/NACUBO-Commonfund_Study_of_Endowments/Public_NCSE_Tables.html