PRIVATE INVESTMENTS

J.P.Morgan

An alternative source of opportunity and return potential

OVERVIEW OF PRIVATE INVESTMENT FUNDS

For investors looking for potential ways to enhance returns and to manage portfolio risk, private investments can potentially be an attractive, long-term complement to traditional public equity and fixed income allocations. While some investors invest directly into private companies, exposure to this asset class is usually gained via private investment funds. These funds are long-term, pooled investment vehicles that acquire, manage and monetize portfolios of privately held companies—or other assets, such as debt or real estate—that are not broadly available to the public.

Private investment fund managers seek high absolute returns, both in terms of internal rate of return (IRR) and multiple of invested capital (MOIC). Fund managers have a range of tools that may allow them to influence change and drive corporate performance in ways that are not possible with public companies. For example, managers can improve operating performance by influencing corporate strategy, changing management and improving operations. They may also employ leverage to enhance returns. **Our clients invest in private investment funds for the potential additional return over public markets.** Historically, private investment funds have outperformed public equity markets by a meaningful margin, even in down markets.

Private investment funds are typically structured as limited partnerships that invest capital over a three- to six-year period and aim to harvest investments after a subsequent four- to seven-year holding period. The investments these funds make may take the form of control or minority equity, growth or late-stage equity, as well as private debt transactions. Additionally, funds often have a preferred return structure that protects an investor from paying performance fees if the returns fall below a minimum level, typically 7%–8% per year.

IN BRIEF

- Over the past 20 years, private investment funds have earned an excess of 6.0%, on average, of incremental return relative to traditional public equity markets.
- Private markets have structural advantages over public markets, which may help deliver a return premium.
  - Longer-term focus
  - Information advantages
  - Ability to use leverage
  - Broader opportunity sets
  - Operational expertise
- Strategic allocations (between 5% and 15% to private investments) may be appropriate for many individuals.
- Given the long-term investment horizons and varied outcomes of private funds, it is critical to assess your liquidity needs, partner with skilled managers and achieve proper diversification.
- J.P. Morgan Private Bank's team of specialists can assist clients with building portfolios that help them achieve their investment goals.

BENEFITS OF PRIVATE INVESTMENTS

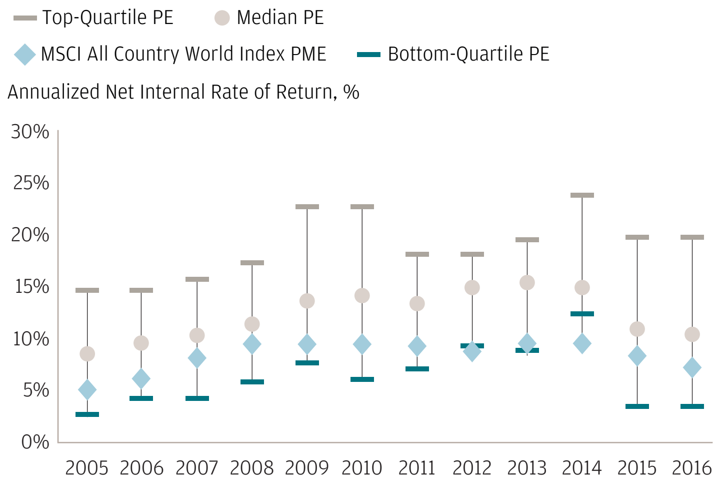
Historical outperformance

Historically, private investment funds have outperformed public equities, particularly over medium and longer time periods, due in part to asset selection, fund manager capabilities and portfolio diversification. Over the past 20 years, private investment funds returned 12.4% annually, representing an outperformance of 6.0% over global public equities[1, 2] (Figure 1).

Even in down markets, private investments have provided either positive or relatively higher returns vis-à-vis public market investments. During some of the worst performing periods over the past 24 years, returns were +2.7% for Private Equity and +5.8% for Private Credit, while the performance of their public equivalents were negative.

More importantly, the difference in results between top-performing and bottom-performing managers has been significant. On average, there has been a 17% gap between top-quartile and bottom-quartile private equity managers[1, 2] over the last nearly 30 years. Fund manager selection is particularly important (Figure 2).

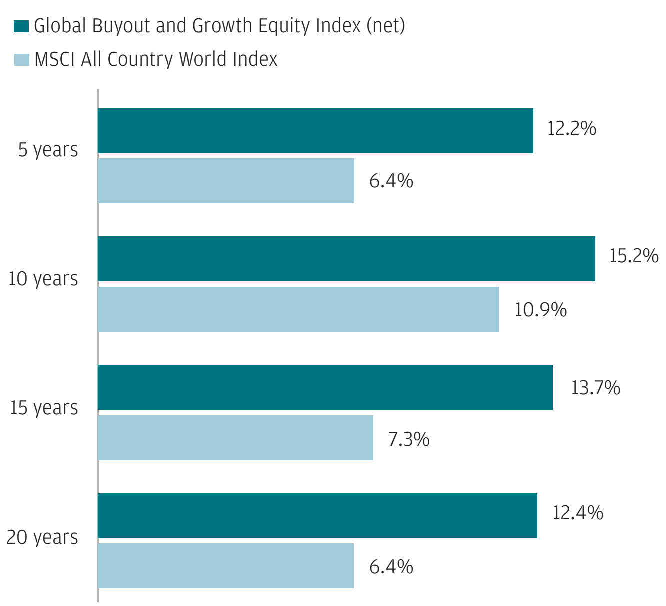
FIGURE 2: STRONG MEDIAN PERFORMANCE, BUT DISPERSION BETWEEN TOP AND BOTTOM QUARTILES CAN BE SIGNIFICANT*, **, ***



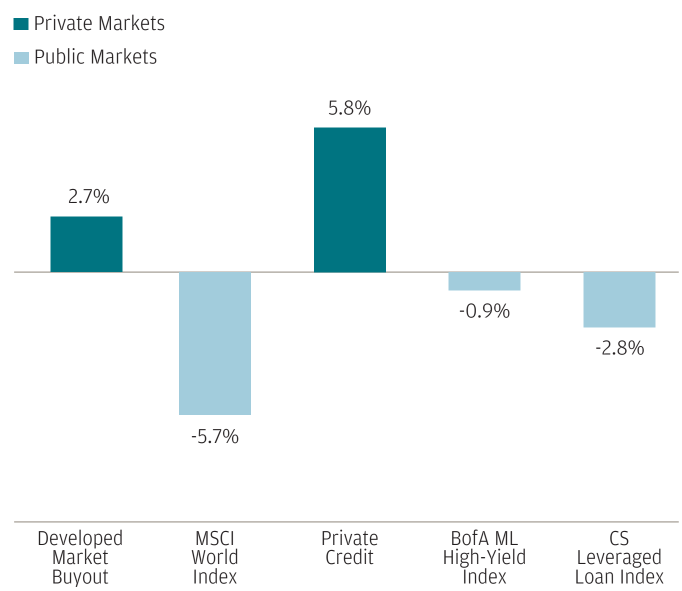
Source: Cambridge Associates Global Buyout & Growth Equity peer group as of March 31, 2019. The difference between top-quartile and bottom-quartile private equity managers is over the past 29 years (June 1988-June 2016) from data collected by Cambridge Associates.

FIGURE 1: AS AN ASSET CLASS, PRIVATE INVESTMENTS HAVE HISTORICALLY GENERATED ATTRACTIVE RETURNS

GLOBAL BUYOUT/GROWTH EQUITY HAS CONSISTENTLY OUTPERFORMED PUBLIC EQUITIES*, **



LOWEST FIVE YEAR ANNUALIZED PERFORMANCE, 1995 - 2019*



Source, left chart: Cambridge Associates LLC, Bloomberg. June 30, 2019.
Source, right chart: Hamilton Lane Data via Cobalt, Bloomberg. 2019.

* **Past performance is not indicative of future results.** The historical returns reflected above are included solely for the purpose of contrasting returns of buyout and growth equity funds with the MSCI ACWI Index over certain time periods.

** Global Buyout & Growth Equity consists of global buyout and growth equity funds tracked by Cambridge Associates LLC. Indices are not investment products and may not be considered for direct investment.

*** There can be no assurance that the returns of private equity funds in the top quartile, or any private equity funds, will match the historical returns of top-quartile funds, and all funds, demonstrated in the chart above.

So while potential for premium returns makes private investments compelling, manager selection is critical to success. However, there are also risks associated with investing in private funds that should be considered (see page 10).

Structural drivers of outperformance

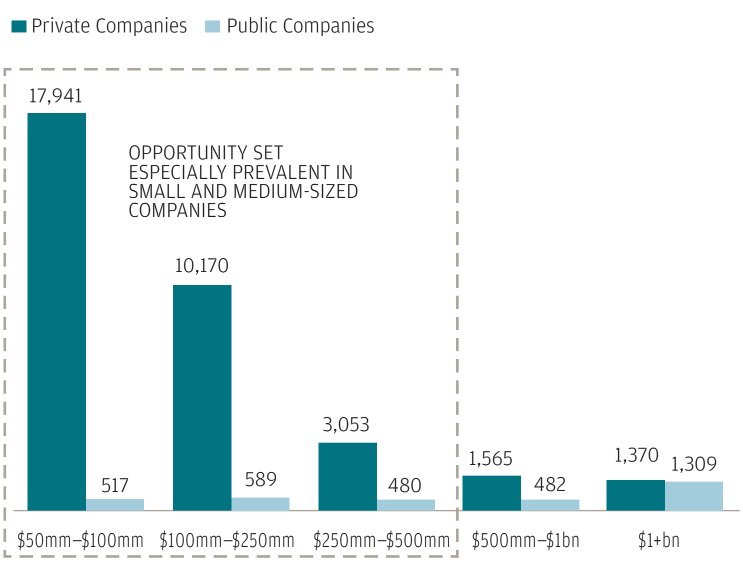
Private investment fund performance is primarily attributable to a manager's ability to take advantage of return drivers that are different from those of other asset classes, including traditional public equities (Appendix A, page 7). These differences range from the investment process to the structure of private investment funds and include:

- **Longer-term investment horizons** that allow private funds to pursue significant growth initiatives to maximize equity value, which might not be achievable under the shorter-term focus of public market shareholders.
- **Substantial information advantages** allow for more robust investment analysis. For example, confidentiality agreements allow private investment managers to perform detailed analyses of nonpublic information before making an investment.
- **Prudent use of leverage**[3] can be used to enhance returns of more mature companies with strong unlevered return characteristics and free cash flow generation capabilities.
- **Broader opportunity sets** for private funds, which include private companies, public companies, and potential non-core divisions of both public and private businesses. Furthermore, a growing universe of private companies is creating increasing demand for private capital. Since its peak in 1996, the number of U.S. publicly listed firms has declined by 50%. Today the opportunity set for private companies is approximately 10x larger than public companies, with the biggest discrepancy in smaller and medium-sized businesses (Figure 3).
- **Value-added operational expertise and frequent operational controls** can drive substantial improvement in a target company's operations and bottom line. Operational improvements are the largest contributors to value creation today, a number that has been steadily rising for decades (Figure 4).

In addition to these structural advantages, private investment funds **are designed to increase the alignment of interest between the fund manager and the investor to help maximize longer-term profits.** Typically, private funds earn the majority of their compensation from a 20% profit share that the fund earns at the time investments are exited. This "incentive fee" or "carried interest" is, in general, only earned if the investments exceed an annualized return of 7%–8%. In addition to this carried interest participation, most private funds charge an annual management fee on the committed capital of the fund.

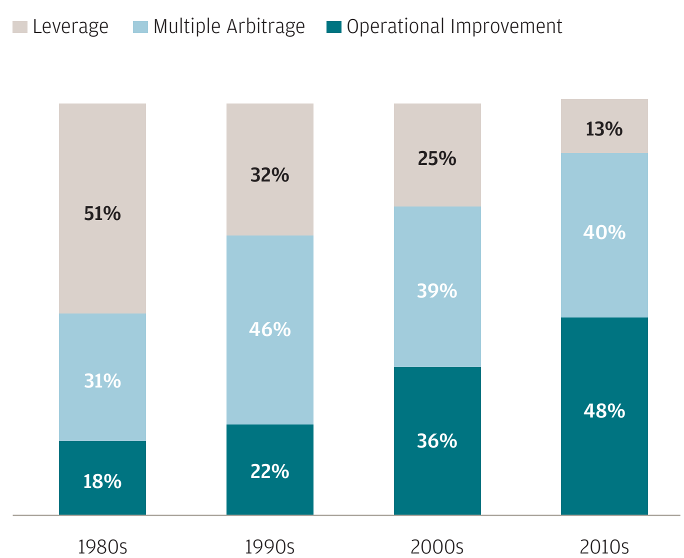
FIGURE 3: A GROWING UNIVERSE OF PRIVATE COMPANIES IS CREATING DEMAND FOR PRIVATE CAPITAL

Number of U.S. public and private companies by annual revenue



Source: World Economic Forum. As of April 2018.

FIGURE 4: OPERATIONAL IMPROVEMENTS PROVIDE THE LARGEST CONTRIBUTION TO VALUE CREATION TODAY



Source: BCG Analysis How Private Equity Firms Fuel Next-Level Value Creation. February 2016.

IMPLEMENTATION

Construction of private investment portfolios

An optimal private investments portfolio would be diversified by vintage year of commitment, investment strategy, market cap, industry sector and fund manager.

We believe investors should consider: 1) anchoring portfolios with traditional diversified **Core Private Equity** funds that have a focus on developed markets in North America and Western Europe; 2) incorporating **Private Real Estate and Private Credit** funds for yield, stronger collateral or seniority in the capital structure and diversification; and 3) making smaller allocations to targeted **Growth Equity** or **Later-Stage Venture Capital** strategies that seek higher overall returns by providing expansion capital to younger, fast-growing companies (Appendix B, page 7).

Selecting your private investments allocation

Institutional investors, such as endowments, foundations and pension plans, tend to have large strategic private investment allocations. This is due to their long-term investment horizons, ability to forgo liquidity, and the potential for private investment funds to generate higher returns. Some individual clients or family offices may also have comparable investment horizons and liquidity needs, causing them to favor these "endowment style" portfolios. For example, J.P. Morgan Private Bank's Absolute Return Portfolio for Endowments & Foundations has a strategic asset allocation to private investments of 29.3% (Figure 5).

Although each individual's investment objectives may differ, it may be more suitable to have lower allocations to private investments. Considerations include: spending needs, charitable giving targets, or other life events that may require or lead to a preference for more liquid portfolios. For many individuals, strategic allocations to private investments of 5% to 15% may be appropriate.

Similar to other types of investments, there is no guarantee that a private investment fund will generate positive returns.[4] Another risk relates to liquidity. **Investor capital cannot be redeemed prior to a fund's maturity.** Furthermore, investor capital can be called and distributed at the manager's discretion, though investors rarely fund the entire amount upfront, and some capital calls for new deals may be offset by distributions from exited investments. **With this in mind, clients are encouraged to work with their J.P. Morgan representatives to establish an allocation to private investments that balances their liquidity needs with their investment objectives.**

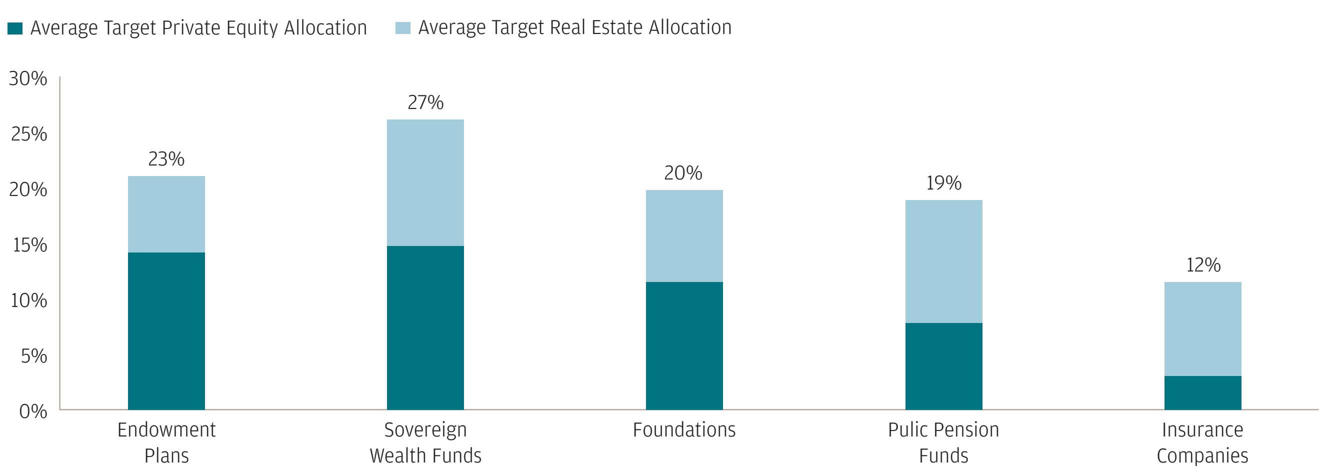
Employing an overcommitment strategy may help you achieve your target allocations

Private investment partnerships usually require active portfolio management. These partnerships typically invest capital over a three- to six-year period and liquidate over an additional four to seven years. In order to maintain the desired exposure to private funds, investors may need to make additional private fund commitments and also employ an overcommitment strategy to avoid becoming disinvested from the asset class as existing investments are liquidated.

In practice, private investment fund managers aim only to draw down (i.e., call) investor capital when they have identified investment opportunities during the early years of a fund. When these investments are realized (i.e., sold or recapitalized), the proceeds are returned to the investors, including the investors' share of the profits.

FIGURE 5: INSTITUTIONAL INVESTORS USE PRIVATE EQUITY AND REAL ESTATE IN PORTFOLIOS

TYPICAL ALLOCATIONS RANGE BETWEEN 12% AND 27%

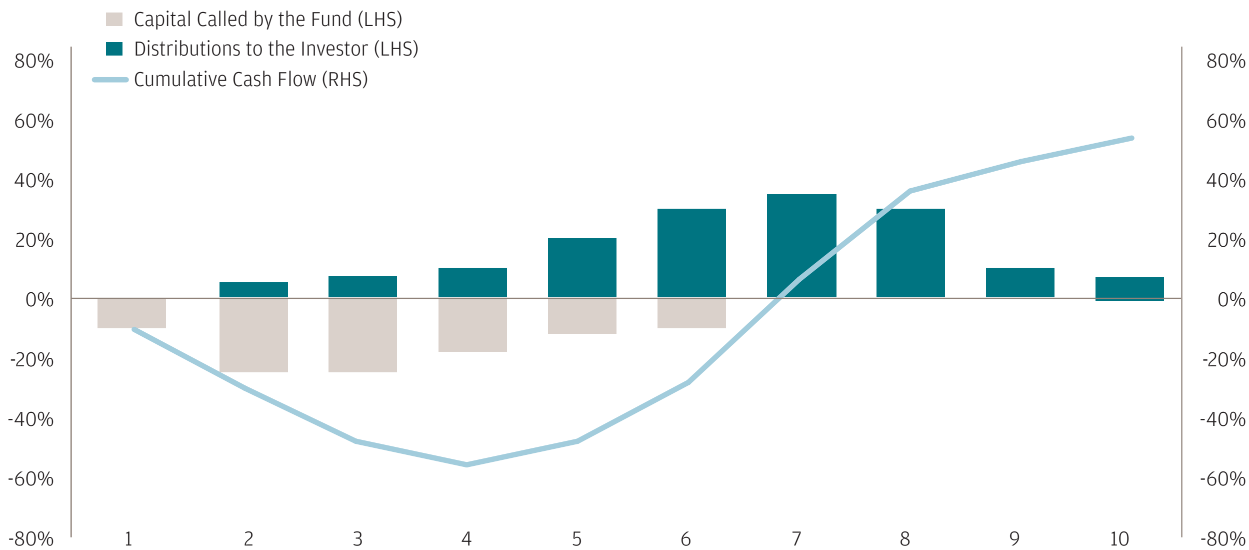


Source: Preqin. As of January 2020.

FIGURE 6: CAPITAL CALLS NORMALLY OCCUR EARLY IN A PRIVATE INVESTMENT FUND'S LIFECYCLE; DISTRIBUTIONS USUALLY BEGIN IN THE MID-TO-LATE YEARS, FORMING A "J-CURVE" PATTERN

The following example assumes a successful outcome; if a private investment fund is unsuccessful, the distributions and IRR could be significantly lower or negative.

HYPOTHETICAL ANNUAL CASH FLOWS



Note: For illustrative purposes only. There is no assurance a private investment fund will make any distributions or perform in a similar fashion. Assumes a 10-year investment cycle with a five-year investment period (typical fund terms) and a 15% Internal Rate of Return (IRR) and a 1.6 Multiple of Invested Capital (MOIC).

Private investments are subject to numerous risks. Please see page 10 for more information. There can be no assurance that the performance shown above will be consistent with the future performance of any individual private investment fund.

This process often begins in years three through five of a typical 10-year term, and continues until the fund realizes the full value of its portfolio investments. The resulting cash flow profile tends to follow a "J-curve" pattern (Figure 6), where investors are seldom fully drawn down at any one time, and may begin receiving distributions before the end of the initial investment period.

In many instances, early distributions from exited investments could mean that, on a net basis, the full amount of an investor's commitment to a private fund may never be fully drawn. For this reason, **institutional investors often utilize an overcommitment strategy to achieve a particular target allocation.** For example, an investor seeking to achieve a 10% allocation may consider making several commitments over a five- to seven-year period that total 14%. By overcommitting to private investment funds, investors have a higher likelihood of maintaining their targeted allocations as measured by their net asset values.

Making frequent, smaller commitments allows investors to improve their vintage year diversification as well as make finer adjustments to their allocations depending on the pace of activity in their existing funds. However, some investors may prefer to make less frequent, larger commitments (Figure 7). Once the strategic target is achieved, investors will need to make new commitments as investments are liquidated to maintain this exposure.

FIGURE 7: A FRAMEWORK FOR OVERCOMMITTING TO PRIVATE INVESTMENTS

OVERCOMMITTING BY 20% TO 40% MAY HELP YOU ACHIEVE YOUR DESIRED NET ASSET VALUE IN PRIVATE INVESTMENTS. AN INVESTOR SEEKING TO BUILD A 10% STRATEGIC TARGET TO PRIVATE INVESTMENTS MIGHT PURSUE COMMITMENTS OF 12%–14%

Strategic target	Strategic target with overcommitments of 20% to 40%		
	Commitments every year of:	Commitments every other year of:	Aggregate commitments over 5 years:
5.0%	1.2% to 1.4%	2.4% to 2.8%	6.0% to 7.0%
7.5%	1.8% to 2.1%	3.6% to 4.2%	9.0% to 10.5%
10.0%	2.4% to 2.8%	4.8% to 5.6%	12.0% to 14.0%
12.5%	3.0% to 3.5%	6.0% to 7.0%	15.0% to 17.5%
15.0%	3.6% to 4.2%	7.2% to 8.4%	18.0% to 21.0%

For illustrative purposes only. There is no guarantee that an overcommitment strategy may help an investor achieve his or her strategic target. See "Key risks of investing in private equity" on page 10.

The information provided herein is for general informational purposes only and is intended to inform you of certain investment products and services offered by J.P. Morgan's private banking business, part of JPMorgan Chase & Co. The information is not intended as a recommendation of, or an offer or solicitation to purchase or sell, any investment product or service, or as a recommendation of an investment manager. Investment products may not be suitable for all investors and are subject to investment risks. Certain opinions, estimates, investment strategies and views expressed in this document constitute our judgment based on current market conditions and are subject to change without notice. This material should not be regarded as research or as a J.P. Morgan research report. Investors may get back less than they invested.

PRIVATE INVESTMENTS AT J.P. MORGAN

J.P. Morgan Private Bank's Alternative Investments Group helps investors find the private investment managers that can best capture opportunities in the private markets.

What helps set our Alternative Investments Group apart is its ability to leverage J.P. Morgan's global resources to review a deep pool of high-quality private investment managers, each comprehensively evaluated by our dedicated team of due diligence specialists.

Constructing a diversified private investments portfolio requires deep due diligence capabilities and access to high-quality managers that have portfolios with enough scale to achieve the necessary diversity. As an example, in 2019, our diligence team conducted over 800 meetings with private investment fund managers around the world, including more than 175 with funds not currently on our platform. Our robust platform affords our clients increased access and transparency not available to many traditional institutional investors. We also have dedicated legal, tax and structuring resources responsible for analyzing and negotiating favorable terms for our private clients.

The Alternative Investments Group aims to select between 10 and 15 private investment funds each year, made available to clients individually or combined into one vehicle that represents a specific vintage year. Often, J.P. Morgan becomes the exclusive entry point for private clients to gain access to private investment offerings that might otherwise be available only to institutional investors. When necessary, we also partner with top asset managers to create customized offerings built to our clients' specifications.

The team remains actively involved in monitoring each fund's performance over the life of each investment. They interact regularly with managers, evaluate new transactions and exit activities, and host events designed to offer J.P. Morgan clients valuable access to managers. These capabilities are further supported by an Alternative Investments Investor Relations team that works directly with the managers, acting as a client advocate.

Since 2000, J.P. Morgan private clients have committed more than $52 billion to private equity, private credit and private real estate. To learn more about our experience in private investments, the timely opportunities we are identifying and the ways in which you can participate, please speak to your J.P. Morgan team.

APPENDIX

APPENDIX A. PRIVATE INVESTING DIFFERS FROM TRADITIONAL EQUITY ASSET MANAGEMENT

	Private equity[5]	Traditional equity asset management
Availability of company information	Greater access to information. Ability to base investment on nonpublic information (via nondisclosure and confidentiality agreements)	Access is limited to public information
Pace of capital deployment	Capital drawn from a limited partnership (LP) only as investments are identified; capital called only as needed	Investors fund 100% of their commitments upfront
Relationship with company management	Usually active: Fund managers may control or work closely with existing or new management to set strategy and improve operations	Typically passive
Tax treatment	Long-term capital gains; any income distributions are taxable as current income	Can be short- or long-term capital gains
Primary driver of manager compensation	Profitable realizations of portfolio companies (IPO, sale to strategic buyer, etc.)	Assets under management
Performance dispersion	Wide dispersion—approximately 15% between top and bottom quartiles[6]	Low dispersion—less than 3% between top and bottom quartiles[6]
Liquidity	Multi-year lock-ups, which allow for longer-term value enhancements and more opportunistic exits	May provide daily, monthly or quarterly liquidity

APPENDIX B. PRIVATE INVESTMENT MANAGERS EMPLOY DIFFERENT STRATEGIES TO DELIVER RETURNS

Core private equity	• Seek to acquire control positions in target companies by using a combination of equity and debt. • Frequently exert operational control to implement changes in management or operations or make acquisitions or divestitures to improve efficiencies and enhance profitability. • Some funds specialize in a particular geographic region, industry sector or market capitalization.
Growth equity and venture capital	• Typically provide expansion capital, generally through minority stakes, to high-growth companies with market-tested business plans. • May also provide industry expertise and guidance to drive changes, without having to pay a premium for corporate control.
Private credit	• Provide senior or subordinated debt financing, including mezzanine debt, to companies unable to obtain credit from other financing sources. • Aim to earn high current coupons.
Real assets	• Typical investment strategies focus on real estate, infrastructure, energy and commodities, and other assets, including water, agriculture, timber or transportation. • Investments focus on yield and often offer valuable diversification benefits, particularly low correlation to other asset classes in traditional asset portfolios.

ENDNOTES

[1] Please see below for index definition. The top quartile is the point where 25% of the sample is above and 75% below; the median is the point where half the sample is above and half below; the bottom quartile is the point where 75% of the sample is above and 25% below. There can be no assurance that J.P. Morgan will be able to select top-quartile private equity funds.

[2] These returns are not intended to, and do not, reflect the historical performance of investment opportunities in private equity funds offered by J.P. Morgan. Moreover, these returns do not take into account the origination and management fees, incentive compensation and expenses of the type incurred by "fund-of-funds" vehicles that invest in private equity funds, which would reduce returns.

[3] Please see "Key risks of investing in private equity" on page 10 for more information on the risks of using leverage.

[4] It is possible for investors to lose all or a portion of their investment.

[5] These characteristics, while typical, are not representative of all private investment funds, which may vary from one another.

[6] Mutual funds represent the dispersion between top- and bottom-quartile traditional asset managers utilizing five-year annualized data obtained from Lipper as of June 30, 2016. Cambridge Associates LLC as of June 30, 2016. Data for buyout and growth equity performance represents the dispersion of top- and bottom-quartile fund net IRRs based on data compiled from 1,930 global (U.S. and ex-U.S.) buyout and growth equity funds tracked by Cambridge Associates LLC. It is not possible to invest directly in an index.

Important notes on performance data

Note: While investments in private equity funds provide potential for attractive returns, access to opportunities not available in the public markets and diversification, they also present significant risks, including illiquidity, long-term time horizons, loss of capital, and significant execution and operating risks that are not typically present in public equity markets.

Past performance is not indicative of future results. The historical returns reflected for private investments throughout the paper are included solely for the purpose of contrasting returns within the private equity industry (i.e., top quartile versus bottom quartile) and for providing information regarding private equity industry returns and the MSCI All Country World Index over certain time periods. The performance shown includes both realized and unrealized investments and reflects the valuation of unrealized investments at estimated fair market value. The actual values and returns ultimately realized on unrealized investments may differ materially from the values and returns used in calculating IRR.

Definition of data:

The **Global Buyout & Growth Equity Index** represents data collected by Cambridge Associates LLC as of June 30, 2016, from 1,930 global (U.S. and ex-U.S.) buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2016. This does not necessarily include all private equity funds formed during this time period.

Cambridge Associates LLC uses both the since-inception internal rate of return and the end-to-end or horizon performance calculation in its benchmark reports. The since-inception internal rate of return ("SI IRR") is a since-inception calculation that solves for the discount rate, which makes the net present value of an investment equal to zero. The calculation is based on cash-on-cash returns over equal periods modified for the residual value of the partnership's equity or portfolio company's net asset value ("NAV"). The residual value attributed to each respective group being measured is incorporated as its ending value. Transactions are accounted for on a quarterly basis, and annualized values are used for reporting purposes. Please note that all transactions are recorded on the 45th day or midpoint of the quarter. Cambridge Associates uses the end-to-end or horizon internal rate of return calculation ("horizon IRR") to calculate the official quarterly, annual and multi-year index figures. The horizon IRR performance calculation is a money-weighted return similar to the SI IRR; however, it is measuring performance between two points in time. The calculation incorporates the beginning NAV (if any, treated as an inflow), interim cash flows and the ending NAV (if any, treated as an outflow). All interim cash flows are recorded on the mid-period date of the quarter. In order for a fund to be included in a horizon IRR calculation, the fund must have at least one quarterly contribution, distribution or NAV during the timeframe being measured. Similar to the SI IRR, the horizon IRR is annualized for timeframes greater than one year.

The **MSCI All Country World Index** ("MSCI ACWI") captures large and mid-cap representation across 23 Developed Markets ("DM") and 24 Emerging Markets ("EM") countries.* With 2,784 constituents, the index covers approximately 85% of the global investable equity opportunity set. The index is based on the MSCI Global Investable Indexes Methodology—a comprehensive and consistent approach to index construction that allows for meaningful global views and cross regional comparisons across all market capitalization size, sector and style segments and combinations. This methodology aims to provide exhaustive coverage of the relevant investment opportunity set with a strong emphasis on index liquidity, investability and replicability. The index is reviewed quarterly—in February, May, August and November—with the objective of reflecting change in the underlying equity markets in a timely manner, while limiting undue index turnover. During the May and November semiannual index reviews, the index is rebalanced, and the large and mid-capitalization cutoff points are recalculated.

The **MSCI All Country World Index PME** is a Cambridge Associates Modified Public Market Equivalent calculation, which is a private-to-public comparison that seeks to replicate private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and the mPME NAV (the value of the shares held by the public equivalent) is a function of mPME cash flows and public index returns. The mPME attempts to evaluate what return would have been earned had the dollars been deployed in the public markets instead of in private investments while avoiding the "negative NAV" issue inherent in some PME methodologies. "Value-Add" shows (in basis points) the difference between the actual private investment return and the mPME calculated return.

It is not possible to invest directly in an index.

* DM countries include: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom and the United States. EM countries include: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Poland, Russia, Qatar, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates.

The MSCI ACWI was launched on May 31, 1990. Data prior to the launch date is back-tested data (i.e., calculations of how the index might have performed over that time period had the index existed).

Glossary of private equity terminology

The following are some common terms that investors in private equity may encounter.

Carried Interest: The share of profits, typically 20% to the general partner, often subject to a 7%–8% Preferred Return to the limited partner and a catch-up to the general partner.

Catch-Up: A clause in the fund agreement between the general partner and the limited partners (investors) of a private equity fund. Once the limited partners have received a certain portion of their expected return, the general partner can then receive a majority of profits until the previously agreed-upon profit split is reached.

Closing Date: The date when a fund's legal documents are signed, the fund admits limited partners into the fund, and any required initial capital commitments from investors are contributed to the fund.

Default: Investors that do not meet capital call obligations will typically be subject to various penalties, including potential forfeiture of an investor's interest.

Exit Strategy: Intended means for liquidating a fund's investments to achieve the maximum possible return. These strategies may include selling or distributing the company's shares after an IPO, an outright sale of the company or a recapitalization.

Internal Rate of Return (IRR): Annualized rate of return, adjusted for timing of cash flows, normally used to gauge the return of funds that invest in illiquid and non-marketable assets, such as buyout, venture or closed-end real estate funds. IRR measures the performance of a portfolio or investment between two dates, taking into account the amount of capital invested during each time period. An IRR calculation gives greater weight to those time periods where more capital was invested, and takes into account both size of cash flows and length of time each cash flow affected the portfolio.

Investment Period: The period (typically five to six years from the final Closing Date) during which a limited partner has the obligation to fund the maximum amount agreed upon to invest in a fund.

J-Curve Effect: Refers to the cumulative net cash flow experience of investors in a typical private equity fund. The early years of a private equity fund are characterized by negative cash flows, and therefore negative returns, due to capital calls, management fees and the cost of investments. In later years, as distributions are made from investments and the fund stops calling capital, the cumulative net cash flows of investors become positive. This transition in cumulative net cash flows from negative to positive over the life of the fund is known as the J-curve effect. Please note that the J-curve effect is only a generalization of the cumulative net cash flows experienced by investors in many private equity funds.

Legal Structure of a Fund: Most commonly a limited partnership. Clients of J.P. Morgan Private Bank generally invest through "feeder funds" or "conduits" administered by J.P. Morgan.

Management Fee: A fee of 1.5% to 2% per annum of total commitments during the Commitment Period, usually paid semiannually in advance. Thereafter, the Management Fee is calculated based on the remaining cost basis of the fund's portfolio (net of dispositions and write-downs).

Preferred Return: A minimum return per annum that must be generated for a fund's limited partners before the general partner can begin receiving a Carried Interest (percentage of profits from investments).

Schedule K-1: A tax form filed with the U.S. Internal Revenue Service (IRS) to report an investor's share of income, deductions, credits and other items from pass-through entities such as private equity limited partnerships.

Term: Generally 10 years from final Closing Date, with the potential for two consecutive one-year wind-up extensions.

Vintage Year: The year in which a private equity manager activates a fund and makes its first investment; this term is used when comparing private equity funds or putting returns into context.

Key risks of investing in private equity

Please refer to the offering memorandum of a specific fund for a more detailed discussion of risks of investing in a specific fund. An investment in a particular fund entails substantial risks, including, but not limited to, those listed below.

Investment in alternative investment strategies is speculative, often involves a greater degree of risk than traditional investments, including limited liquidity and limited transparency among other factors, and should only be considered by sophisticated investors with the financial capability to accept the loss of all or part of the assets devoted to such strategies. While investments in private equity funds provide potential for attractive returns, access to opportunities not available in the public markets and diversification, they also present significant risks, including illiquidity, long-term time horizons, loss of capital, and significant execution and operating risks that are not typically present in public equity markets. Private equity funds typically have a 10–15 year term and will begin to monetize investments after holding them for 4–5 years.

General/Loss of capital. An investment in private equity funds involves a high degree of risk. There can be no assurance that (i) a private equity fund will be able to choose, make and realize investments in any particular company or portfolio of companies, (ii) the private equity fund will be able to generate returns for its investors or that the returns will be commensurate with the risks of investing in the type of companies and transactions that constitute the fund's investment strategy, or (iii) an investor will receive any distributions from the private equity fund. Accordingly, an investment in a private equity fund should only be considered by persons who can afford a loss of their entire investment due to its high degree of risk. Investors in the private equity fund could lose up to the full amount of their invested capital. The private equity fund's fees and expenses may offset the private equity fund's profits. **Past performance is not indicative of future results.**

Risks of certain investments. The securities of portfolio companies and the ability of such companies to pay debts could be adversely affected by interest rate movements, changes in the general economic or political climate, or the economic factors affecting a particular industry, changes in tax law or specific developments within such companies. The securities in which a private equity fund will invest generally will be among the most junior in the portfolio company's capital structure, and thus may be subject to the greatest risk of loss. Most of a private equity fund's investments will not have a readily available public market, and disposition of such investments may require a lengthy time period or may result in distributions in kind to investors. A private equity fund's manager generally has a limited ability to extend the term of the fund; therefore, the fund may have to sell, distribute or otherwise dispose of investments at a disadvantageous time as a result of dissolution.

Lack of information. Investors are reliant on the private equity fund's managers for the availability, quality and quantity of information. Information regarding investment strategies and performance may not be readily available to investors.

Limited liquidity. Investments in private equity funds typically have terms extending to 10–12 years and are intended for long-term investors who have the financial ability and willingness to accept the risks associated with making speculative and primarily illiquid investments. Interests in the private equity funds are generally not redeemable. An investor in such a fund may not freely transfer, assign or sell any interest without the prior written consent of the fund manager. An investor may not, save in particular circumstances, withdraw from a private equity fund. Interests in private equity funds will not be registered under the U.S. Securities Act of 1933, as amended, or any other securities laws in any jurisdiction. There is no liquid market for such interests, and none is expected to develop. Consequently, a commitment may be difficult to sell or realize.

Dependence on manager. Performance is dependent on manager-specific skills, rather than broad exposure to a particular market.

Event risk. Given certain funds' niche specialization (e.g., in an industry or a region), market dislocations can affect some strategies more adversely than others.

Potential conflicts of interest. Investors should be aware that there will be occasions when a private equity fund's general partner and its officers and affiliates may encounter potential conflicts of interest in connection with the fund. Fund professionals may work on other matters and, therefore, conflicts may arise in the allocation of management resources. The payment of carried interest to the general partner may create an incentive for the general partner to cause the private equity fund to make riskier or more speculative investments than it would in the absence of such incentive. In addition, the manager will generally pay J.P. Morgan a placement fee and/or a servicing fee in connection with its placement agent and/or administrative role.

Valuation. Because of overall size or concentration in particular markets of positions held by the private equity fund or other reasons, the value at which its investments can be liquidated may differ, sometimes significantly, from the interim valuations arrived at by the private equity fund.

Leverage. The capital structures of many portfolio companies typically include substantial leverage. In addition, investments may be consummated through the use of significant leverage. Leveraged capital structures and the use of leverage in financing investments increase the exposure of a company to adverse economic factors such as rising interest rates, downturns in the economy or deteriorations in the condition of the company or its industry, and make the company more sensitive to declines in revenues and to increases in expenses.

Taxation considerations. An investment in a private equity fund may involve complex tax considerations, which may differ for each investor. Investors are advised to consult their own tax advisors. Changes in applicable tax laws could affect, perhaps adversely, the tax consequences of an investment.

Additional risks. There may be additional risks inherent in the underlying investments within funds. Investments in a large number of private equity funds would skew the appropriate balance in a portfolio, increase risk and adversely impact portfolio liquidity overall. It may, therefore, be inappropriate for certain investors to invest in more than a limited number of such funds.

IMPORTANT INFORMATION

Key Risks
This presentation does not constitute an offering of any security, product, service or fund, for which an offer can be made only by the applicable offering documents and only to qualified investors in those jurisdictions permitted by law. No investment should be made based solely on this presentation. Past performance is not indicative of future performance.

Private investments are subject to special risks. Individuals must meet specific suitability standards before investing. This information does not constitute an offer to sell or a solicitation of an offer to buy. As a reminder, hedge funds (or funds of hedge funds), private equity funds, real estate funds often engage in leveraging and other speculative investment practices that may increase the risk of investment loss. These investments can be highly illiquid, and are not required to provide periodic pricing or valuation information to investors, and may involve complex tax structures and delays in distributing important tax information. These investments are not subject to the same regulatory requirements as mutual funds; and often charge high fees. Further, any number of conflicts of interest may exist in the context of the management and/or operation of any such fund. For complete information, please refer to the applicable offering memorandum. Securities are made available through J.P. Morgan Securities LLC, member FINRA and SIPC, and its broker-dealer affiliates.

While investments in private equity funds provide potential for attractive returns, access to opportunities not available in the public markets and diversification, they also present significant risks, including illiquidity, long-term time horizons, loss of capital and significant execution and operating risks that are not typically present in public equity markets. Private equity funds typically have a 10–15 year term and will begin to monetize investments after holding them for 4–5 years.

This material is for information purposes only, and may inform you of certain products and services offered by J.P. Morgan's wealth management businesses, part of JPMorgan Chase & Co. ("JPM"). **Please read all Important Information.**

General Risks & Considerations
Any views, strategies or products discussed in this material may not be appropriate for all individuals and are subject to risks. **Investors may get back less than they invested, and past performance is not a reliable indicator of future results**. Asset allocation/diversification does not guarantee a profit or protect against loss. Nothing in this material should be relied upon in isolation for the purpose of making an investment decision. You are urged to consider carefully whether the services, products, asset classes (e.g., equities, fixed income, alternative investments, commodities, etc.) or strategies discussed are suitable to your needs. You must also consider the objectives, risks, charges, and expenses associated with an investment service, product or strategy prior to making an investment decision. For this and more complete information, including discussion of your goals/situation, contact your J.P. Morgan representative.

Non-Reliance
Certain information contained in this material is believed to be reliable; however, JPM does not represent or warrant its accuracy, reliability or completeness, or accept any liability for any loss or damage (whether direct or indirect) arising out of the use of all or any part of this material. No representation or warranty should be made with regard to any computations, graphs, tables, diagrams or commentary in this material, which are provided for illustration/reference purposes only. The views, opinions, estimates and strategies expressed in this material constitute our judgment based on current market conditions and are subject to change without notice. JPM assumes no duty to update any information in this material in the event that such information changes. Views, opinions, estimates and strategies expressed herein may differ from those expressed by other areas of JPM, views expressed for other purposes or in other contexts, and **this material should not be regarded as a research report**. Any projected results and risks are based solely on hypothetical examples cited, and actual results and risks will vary depending on specific circumstances. Forward-looking statements should not be considered as guarantees or predictions of future events.

Nothing in this document shall be construed as giving rise to any duty of care owed to, or advisory relationship with, you or any third party. Nothing in this document shall be regarded as an offer, solicitation, recommendation or advice (whether financial, accounting, legal, tax or other) given by J.P. Morgan and/or its officers or employees, irrespective of whether or not such communication was given at your request. J.P. Morgan and its affiliates and employees do not provide tax, legal or accounting advice. You should consult your own tax, legal and accounting advisors before engaging in any financial transactions.

Legal Entity, Brand & Regulatory Information
In the **United States**, bank deposit accounts and related services, such as checking, savings and bank lending, are offered by **JPMorgan Chase Bank, N.A.** Member FDIC.

JPMorgan Chase Bank, N.A. and its affiliates (collectively **"JPMCB"**) offer investment products, which may include bank-managed investment accounts and custody, as part of its trust and fiduciary services. Other investment products and services, such as brokerage and advisory accounts, are offered through **J.P. Morgan Securities LLC ("JPMS")**, a member of FINRA and SIPC. JPMCB and JPMS are affiliated companies under the common control of JPM. Products not available in all states.

In **Luxembourg**, this material is issued by **J.P. Morgan Bank Luxembourg S.A. (JPMBL)**, with registered office at European Bank and Business Centre, 6 route de Treves, L-2633, Senningerberg, Luxembourg. R.C.S Luxembourg B10.958. Authorized and regulated by Commission de Surveillance du Secteur Financier (CSSF) and jointly supervised by the European Central Bank (ECB) and the CSSF. J.P. Morgan Bank Luxembourg S.A. is authorized as a credit institution in accordance with the Law of 5th April 1993. In the **United Kingdom**, this material is issued by **J.P. Morgan Bank Luxembourg S.A., London Branch**. Prior to Brexit (Brexit meaning that the United Kingdom leaves the European Union under Article 50 of the Treaty on European Union, or, if later, loses its ability to passport financial services between the United Kingdom and the remainder of the EEA), J.P. Morgan Bank Luxembourg S.A., London Branch is subject to limited regulation by the Financial Conduct Authority and the Prudential Regulation Authority. Details about the extent of our regulation by the Financial Conduct Authority and the Prudential Regulation Authority are available from us on request. In the event of Brexit, in the United Kingdom, J.P. Morgan Bank Luxembourg S.A., London Branch is authorized by the Prudential Regulation Authority, subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Details about the extent of our regulation by the Prudential Regulation Authority are available from us on request. In **Spain**, this material is distributed by **J.P. Morgan Bank Luxembourg S.A., Sucursal en España**, with registered office at Paseo de la Castellana, 31, 28046 Madrid, Spain. J.P. Morgan Bank Luxembourg S.A., Sucursal en España is registered under number 1516 within the administrative registry of the Bank of Spain and supervised by the Spanish Securities Market Commission (CNMV). In **Germany**, this material is distributed by **J.P. Morgan Bank Luxembourg S.A., Frankfurt Branch**, registered office at Taunustor 1 (TaunusTurm), 60310 Frankfurt, Germany, jointly supervised by the Commission de Surveillance du Secteur Financier (CSSF) and the European Central Bank (ECB), and in certain areas also supervised by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin). In **Italy**, this material is distributed by **J.P. Morgan Bank Luxembourg S.A., Milan Branch**, registered office at Via Catena Adalberto 4, Milan 20121, Italy and regulated by Bank of Italy and the Commissione Nazionale per le Società e la Borsa (CONSOB). In the **Netherlands**, this material is distributed by **J.P. Morgan Bank Luxembourg S.A., Amsterdam Branch**, with registered office at World Trade Centre, Tower B, Strawinskylaan 1135, 1077 XX, Amsterdam, The Netherlands. J.P. Morgan Bank Luxembourg S.A., Amsterdam Branch is authorized and regulated by the Commission de Surveillance du Secteur Financier (CSSF) and jointly supervised by the European Central Bank (ECB) and the CSSF in Luxembourg; J.P. Morgan Bank Luxembourg S.A., Amsterdam Branch is also authorized and supervised by De Nederlandsche Bank (DNB) and the Autoriteit Financiële Markten (AFM) in the Netherlands. Registered with the Kamer van Koophandel as a branch of J.P. Morgan Bank Luxembourg S.A. under registration number 71651845. In **Denmark**, this material is distributed by **J.P. Morgan Bank Luxembourg, Copenhagen Br, filial af J.P. Morgan Bank Luxembourg S.A.** with registered office at Kalvebod Brygge 39-41, 1560 København V, Denmark. J.P. Morgan Bank Luxembourg, Copenhagen Br, filial af J.P. Morgan Bank Luxembourg S.A. is authorized and regulated by Commission de Surveillance du Secteur Financier (CSSF) and jointly supervised by the European Central Bank (ECB) and the CSSF. J.P. Morgan Bank Luxembourg, Copenhagen Br, filial af J.P. Morgan Bank Luxembourg S.A. is also subject to the supervision of Finanstilsynet (Danish FSA) and registered with Finanstilsynet as a branch of J.P. Morgan Bank Luxembourg S.A. under code 29009. In **Sweden**, this material is distributed by **J.P. Morgan Bank Luxembourg S.A., Stockholm Bankfilial**, with registered office at Hamngatan 15, Stockholm, 11147, Sweden. J.P. Morgan Bank Luxembourg S.A., Stockholm Bankfilial is authorized and regulated by Commission de Surveillance du Secteur Financier (CSSF) and jointly supervised by the European Central Bank (ECB) and the CSSF. J.P. Morgan Bank Luxembourg S.A., Stockholm Bankfilial is also subject to the supervision of Finansinspektionen (Swedish FSA). Registered with Finansinspektionen as a branch of J.P. Morgan Bank Luxembourg S.A. In **France**, this material is distributed by **JPMorgan Chase Bank, N.A. ("JPMCB"), Paris branch**, which is regulated by the French banking authorities Autorité de Contrôle Prudentiel et de Résolution and Autorité des Marchés Financiers. In **Switzerland**, this material is distributed by **J.P. Morgan (Suisse) SA**, which is regulated in Switzerland by the Swiss Financial Market Supervisory Authority (FINMA).

In Hong Kong, this material is distributed by JPMCB, Hong Kong branch. JPMCB, Hong Kong branch is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission of Hong Kong. In Hong Kong, we will cease to use your personal data for our marketing purposes without charge if you so request. In Singapore, this material is distributed by JPMCB, Singapore branch. JPMCB, Singapore branch is regulated by the Monetary Authority of Singapore. Dealing and advisory services and discretionary investment management services are provided to you by JPMCB, Hong Kong/Singapore branch (as notified to you). Banking and custody services are provided to you by JPMCB Singapore Branch. The contents of this document have not been reviewed by any regulatory authority in Hong Kong, Singapore or any other jurisdictions. You are advised to exercise caution in relation to this document. If you are in any doubt about any of the contents of this document, you should obtain independent professional advice. For materials which constitute product advertisement under the Securities and Futures Act and the Financial Advisers Act, this advertisement has not been reviewed by the Monetary Authority of Singapore. JPMorgan Chase Bank, N.A. is a national banking association chartered under the laws of the United States, and as a body corporate, its shareholder's liability is limited.

With respect to countries in Latin America, the distribution of this material may be restricted in certain jurisdictions. We may offer and/or sell to you securities or other financial instruments which may not be registered under, and are not the subject of a public offering under, the securities or other financial regulatory laws of your home country. Such securities or instruments are offered and/or sold to you on a private basis only. Any communication by us to you regarding such securities or instruments, including without limitation the delivery of a prospectus, term sheet or other offering document, is not intended by us as an offer to sell or a solicitation of an offer to buy any securities or instruments in any jurisdiction in which such an offer or a solicitation is unlawful. Furthermore, such securities or instruments may be subject to certain regulatory and/or contractual restrictions on subsequent transfer by you, and you are solely responsible for ascertaining and complying with such restrictions. To the extent this content makes reference to a fund, the Fund may not be publicly offered in any Latin American country, without previous registration of such fund's securities in compliance with the laws of the corresponding jurisdiction. Public offering of any security, including the shares of the Fund, without previous registration at Brazilian Securities and Exchange Commission—CVM is completely prohibited. Some products or services contained in the materials might not be currently provided by the Brazilian and Mexican platforms.

JPMorgan Chase Bank, N.A. (JPMCBNA) (ABN 43 074 112 011/AFS Licence No: 238367) is regulated by the Australian Securities and Investment Commission and the Australian Prudential Regulation Authority. Material provided by JPMCBNA in Australia is to "wholesale clients" only. For the purposes of this paragraph the term "wholesale client" has the meaning given in section 761G of the Corporations Act 2001 (Cth). Please inform us if you are not a Wholesale Client now or if you cease to be a Wholesale Client at any time in the future.

JPMS is a registered foreign company (overseas) (ARBN 109293610) incorporated in Delaware, U.S.A. Under Australian financial services licensing requirements, carrying on a financial services business in Australia requires a financial service provider, such as J.P. Morgan Securities LLC (JPMS), to hold an Australian Financial Services Licence (AFSL), unless an exemption applies. JPMS is exempt from the requirement to hold an AFSL under the Corporations Act 2001 (Cth) (Act) in respect of financial services it provides to you, and is regulated by the SEC, FINRA and CFTC under U.S. laws, which differ from Australian laws. Material provided by JPMS in Australia is to "wholesale clients" only. The information provided in this material is not intended to be, and must not be, distributed or passed on, directly or indirectly, to any other class of persons in Australia. For the purposes of this paragraph the term "wholesale client" has the meaning given in section 761G of the Act. Please inform us immediately if you are not a Wholesale Client now or if you cease to be a Wholesale Client at any time in the future.

This material has not been prepared specifically for Australian investors. It:

- May contain references to dollar amounts which are not Australian dollars;
- May contain financial information which is not prepared in accordance with Australian law or practices;
- May not address risks associated with investment in foreign currency denominated investments; and
- Does not address Australian tax issues.

References to "J.P. Morgan" are to JPM, its subsidiaries and affiliates worldwide. "J.P. Morgan Private Bank" is the brand name for the private banking business conducted by JPM. This material is intended for your personal use and should not be circulated to or used by any other person, or duplicated for non-personal use, without our permission. If you have any questions or no longer wish to receive these communications, please contact your J.P. Morgan representative.