Board Education Workshop

Private Markets Overview

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Von began his career at Goldman, Sachs & Co. in New York as an Associate in the Mergers & Acquisitions Group and then as a Vice President in the Equity Capital Markets Group. He received his JD from Harvard Law School, where he was selected as an editor of the *Harvard Law Review;* his MPP from the John F. Kennedy School of Government at Harvard University; and he holds a BA in Philosophy (cum laude) from Yale University.

Von is a trustee of the Greenwich Roundtable, a non-profit research and educational organization for investors allocating to alternative investments. Von is a trustee of the National Association of Investment Companies, a Washington, DC-based trade association that serves as the largest network of diverse-owned and emerging private equity firms and hedge funds. He is also a trustee of Northside Center for Child Development, a Harlem-based non-profit organization that provides early childhood development services in the NYC area.

Table of Contents

Section One:	Public Market vs. Private Market	4
Section Two:	Private Markets Overview	8
Section Three:	Private Market Segments	17
	Private Equity	18
	Real Assets	26
	Private Debt	32

Public Market vs. Private Market

What is a Public Market?

- Typically refers to a market where securities are publicly-traded – i.e. available for sale and purchase by the general public
  - Examples: NYSE or NASDAQ
- Companies that choose to “go public”
  - Register securities with a financial authority (SEC)
  - Allowed to raise capital from the general public, but
  - Must comply with substantial disclosure requirements
  - Subject to an array of rules and regulations
- Issuer advantages of public market financing: traditionally the largest and deepest pool of capital; lowest cost way to raise large amounts of financing; risk sharing; public share is acquisition currency

What is a Private Market?

- “Private” market is first and foremost not “public,” i.e. not open to all investors
- Private markets are generally only open to “accredited” investors (Regulation D)*
  - “Accredited” i.e. investors allowed to deal in securities not registered with financial authorities
  - Limited to institutional and High Net Worth investors
- Major private markets include:
  - Private equity
  - Real assets
  - Private debt

*The Securities Act of 1933 requires that any offer to sell securities must be registered with the SEC to meet certain qualifications for exemptions. Regulation D, 47 C.F.R §230.501 et seq., provides the rules for exemption from registration. Rule 201 of Regulation D “accredited investors”, includes high-net-worth individuals, banks, insurance companies, employee benefit plans, trusts(>$5 million), financial institutions, and large companies.

Defining Characteristics of Private Markets

- Less heavily regulated than public markets
- Reporting requirements are limited
- Valuation – established at a point in time, not continuously, may not be affected by new information
- Illiquid – hard to sell due to lack of ready buyers, expense, or other reason; high transaction costs

Private Markets Overview

Why Invest in Private Markets

- Return enhancement
  - Illiquidity premium
  - Manager skill
  - Investment focus
  - General Partner (GP)/Limited Partner (LP) alignment
- Risk reduction
- Interest rate hedge
- Inflation protection
- Characteristics consistent with long-term pension goals
- Broader exposure to economy than just public markets
- Public markets simply less attractive

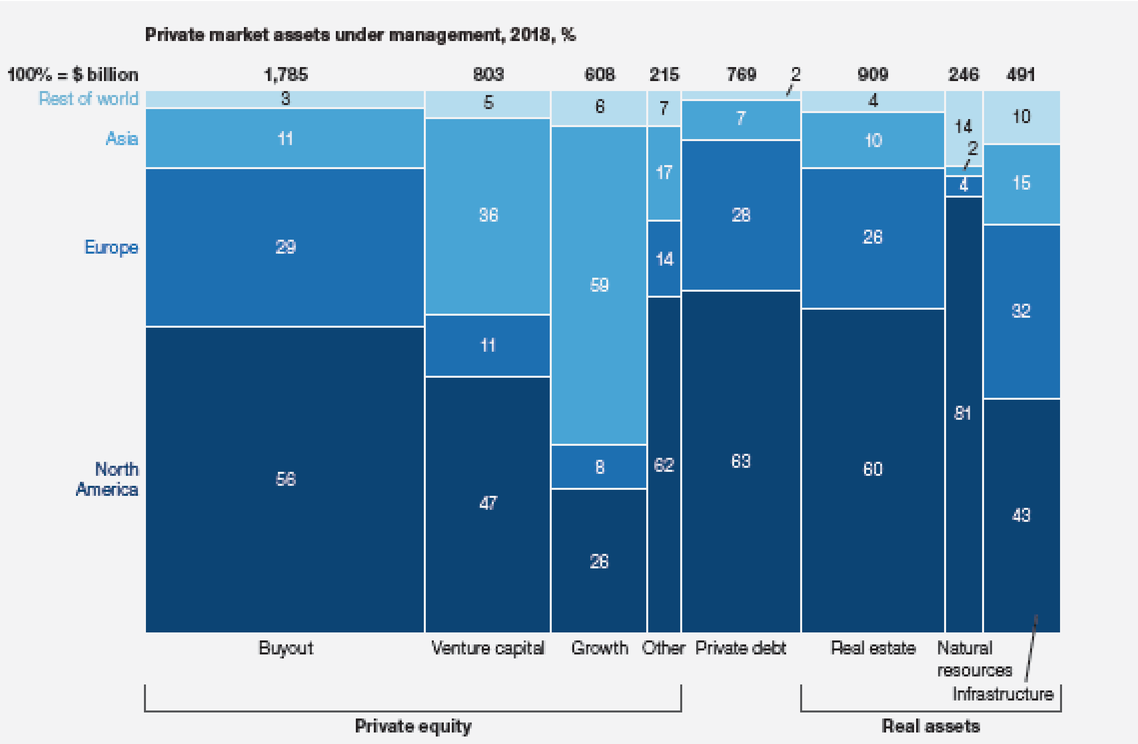
Private Market Considerations

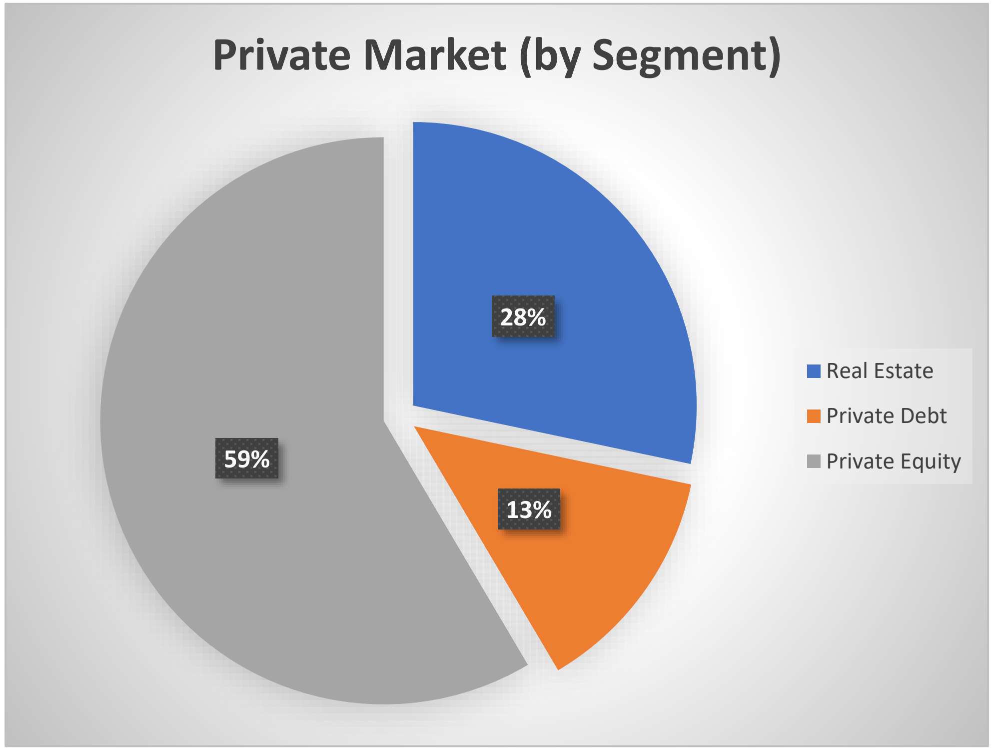
- Higher fees/compensation structure
- Illiquidity
- GP/LP alignment
- Management/talent dependent

Major Private Markets

Private Equity	Real Assets	Private Debt/Credit
Buy Out	Real Estate	Direct Lending
Growth Equity	Infrastructure	Mezzanine Debt
Credit Related	Natural Resources	Distressed Debt
Opportunistic		Special Situations
Venture Capital		Venture Debt

Private Markets: Global Snapshot

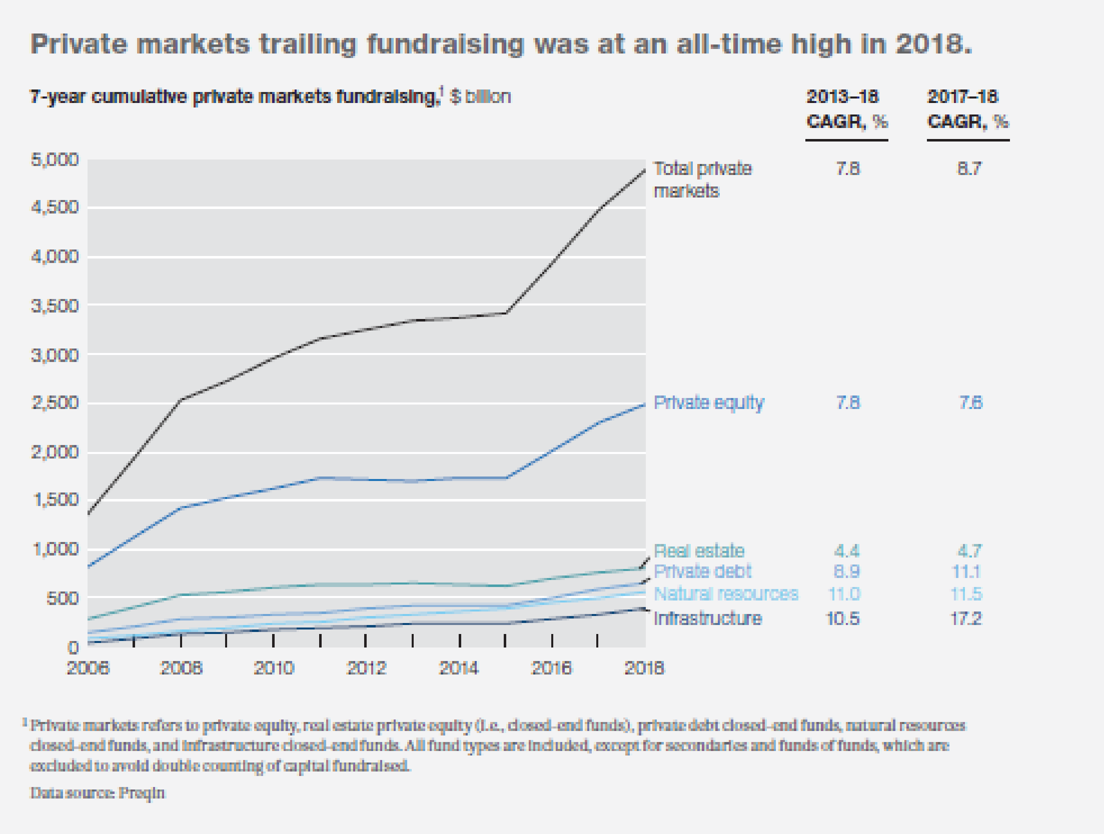




Total AUM $5.8 Trillion

Source: “Private Markets Come of Age,” McKinsey Global Private Markets Review, McKinsey & Company (February 2019). Real estate figures understated AUM because excludes asset owner direct/separate accounts and many open-end vehicles.

Recent Growth of Private Markets

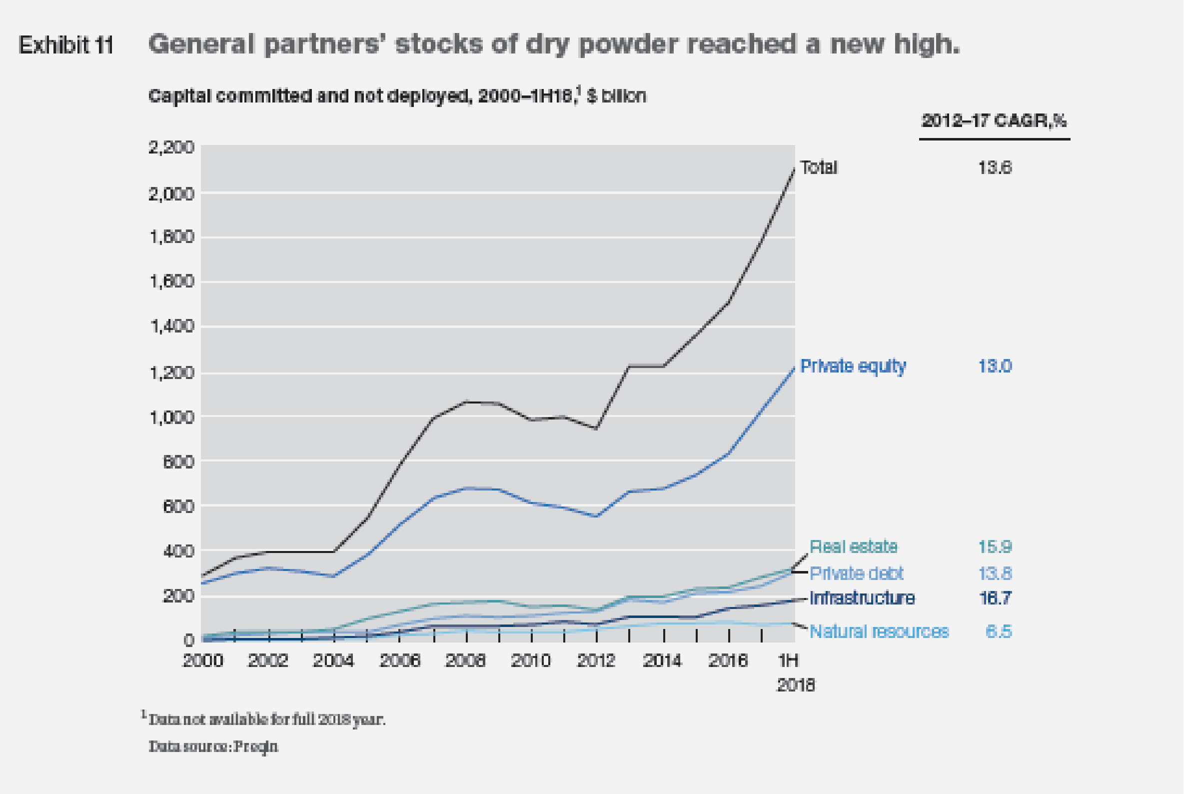


- Fundraising has grown by about 8% annually since 2013
- Private equity demand drives private market growth
- Private debt, natural resources, and infrastructure have grown disproportionately faster than private markets as a whole since 2013
- Real estate growth (4.4%) only partial picture (excl. direct, separate accts, open-ended vehicles) with open-ended funds capturing market share

Source: “Private Markets Come of Age,” McKinsey Global Private Markets Review, McKinsey & Company (February 2019).

CalPERS

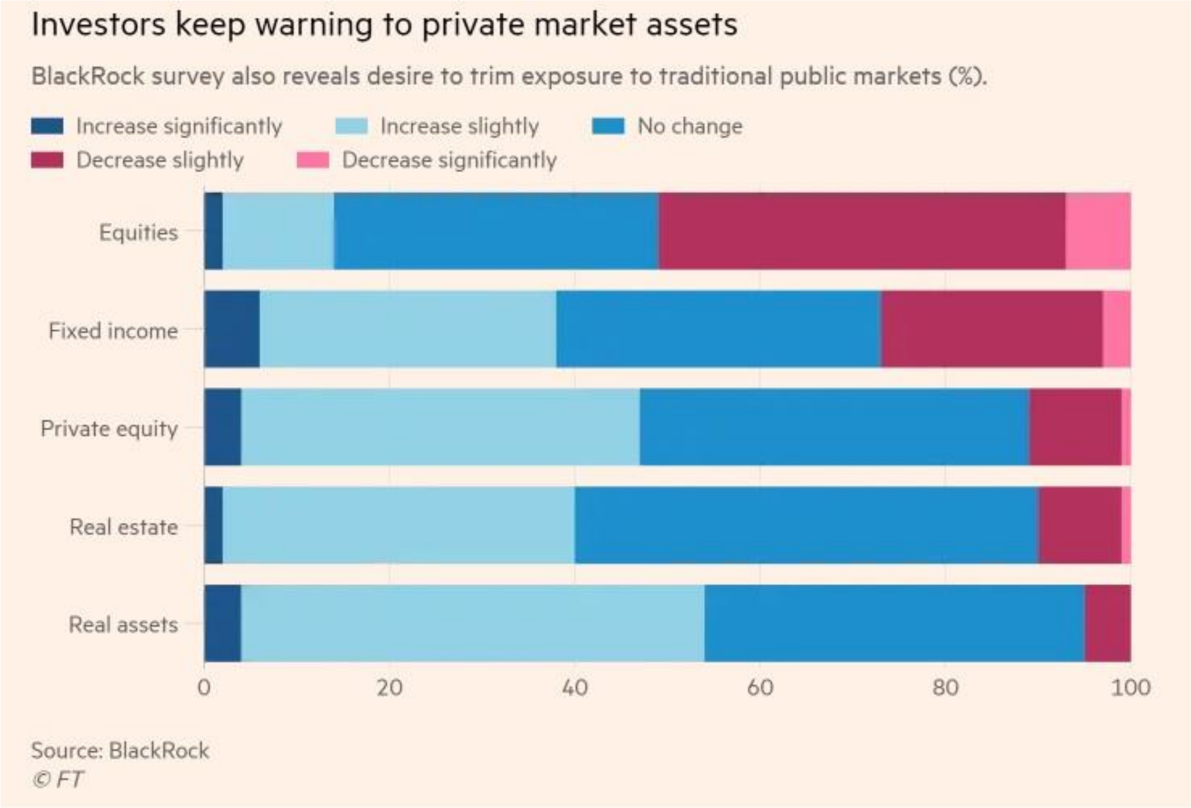
Private Markets “Dry Powder”



- Record high $2.1T in H1 2018
- Since 2012, grown at 13.6% rate
- What does it really mean?
  - Competition
  - Valuation
  - Fundraising
- Private market bubble?

Source: “Private Markets Come Of Age,” McKinsey Global Private Market Review, McKinsey & Company (2019).

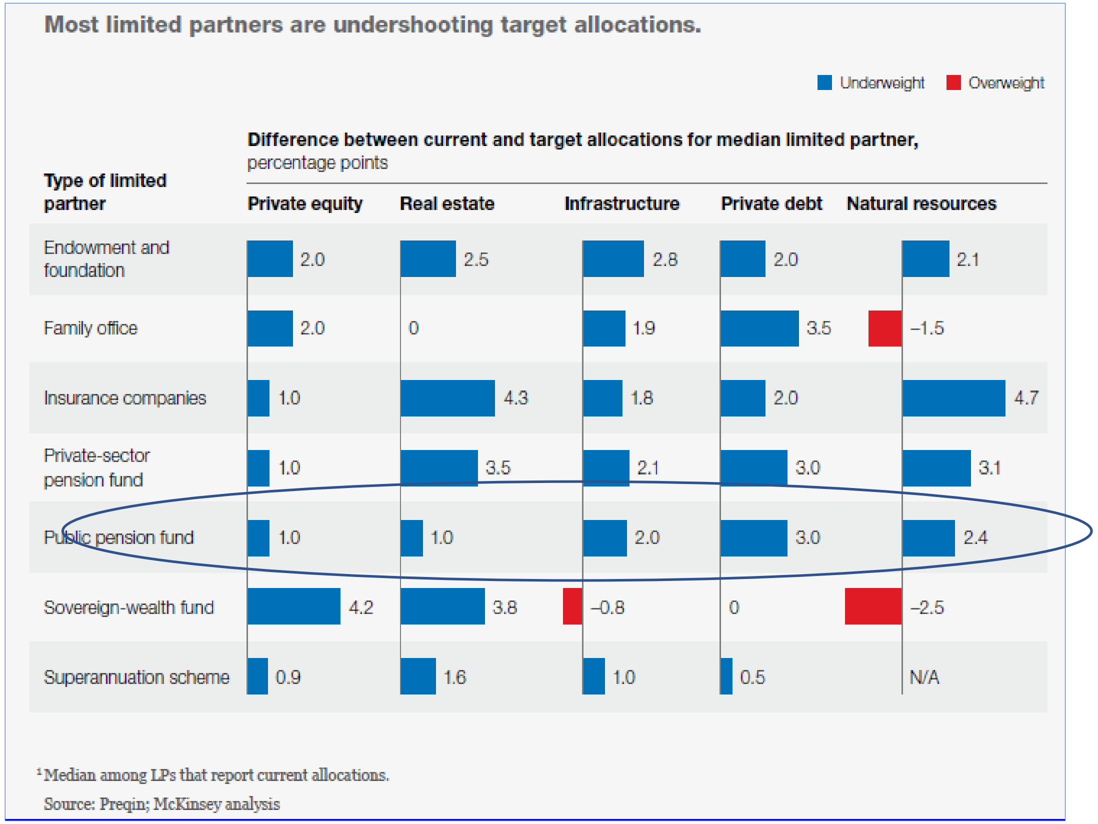
Private Market Growth Will Continue



- Institutional investors, in general, remain bullish on private markets
- Investor interest will continue to drive private market growth and sustain high level of “dry powder”
- Greatest expected increase in real estate and real assets
- Increase in private markets coming primarily from a decrease in traditional equities and fixed income

Source: “The Private Markets Battle,” by Leo Kolivakis, *Pension Pulse* (February 11, 2019).

Public Pensions Underweight Private Market



- Public pensions, specifically, will continue to add to the demand for private markets
- Globally, public pensions are, on average, underweight current target allocations to all segments of private markets
- Public pensions are nearest their target allocations in private equity and real estate, furthest from their target private debt allocations

Chart Source: “A Routinely Exceptional Year,” McKinsey Global Private Markets Review, McKinsey & Company (February 2017).

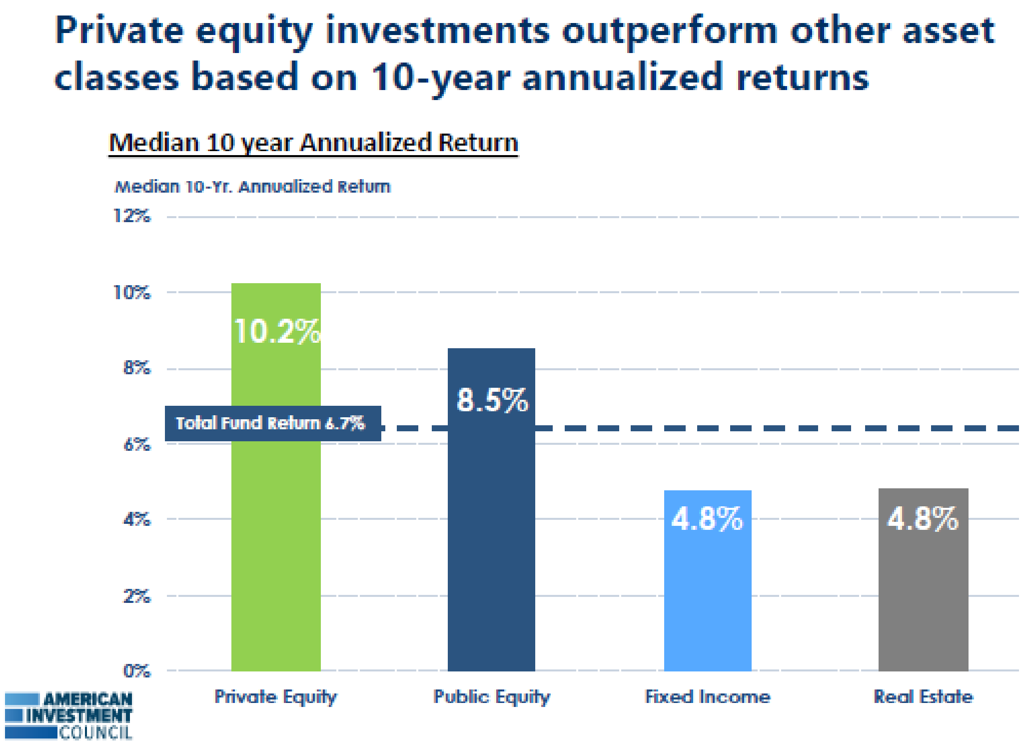
Private Market Segments

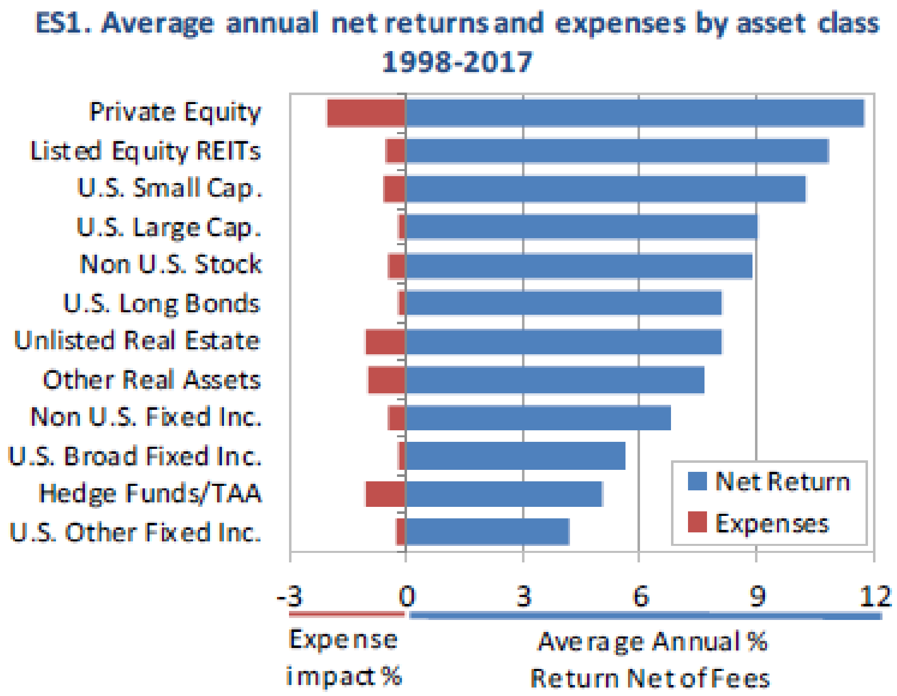
Private Equity

Investing In Private Equity

Potential Benefits	Potential Risks
• Enhanced return - Illiquidity premium - Manager skill - GP/LP alignment • Risk reduction - Equity correlation w/o short-term volatility • Diversification • Alignment with public pension long-term goals	• Liquidity risk • Funding risk • Manager selection risk • Market risk (general and specific) • Capital risk

Public Equity Returns





Sources: “Public Pension Study,” American Investment Council (July 2019); “Asset Allocation and Fund Performance of Defined Benefit Pension Funds in the United States, 1998-2017,” by Alexander D. Beath and Chris Flynn, CEM Benchmarking (October 2019).

Private Equity: Market Segments

Type	Description
Buyout	Acquisition of controlling interests (>50%) in companies. If the stake is bought by the company's management, then the acquisition is called a management buyout (MBO). A leveraged buyout (LBO) occurs when extensive amounts of debt are used to fund the buyout (and enhance the rate of return). Buyouts and LBOs typically target mature companies/businesses.
Growth	Targets relatively mature companies that are looking for capital to buildout (ex. acquisition or new market), or restructure operations or balance sheet (ex. reduce leverage). Growth funds typically take a minority, not controlling, stake in companies. Companies seeking growth capital are less capable of raising additional debt from a bank either because of low earnings or existing debt.
Credit Related	see Private Debt
Opportunistic	Investing in assets where the owners are motivated to sell when there are few willing buyers. Targets companies and assets where events may have created price/value dislocations, with no change in fundamental value. Companies or assets typically bought at substantial discounts -- often a contrarian investment approach. Opportunistic investments generally either event-driven (unique, not repeatable, time sensitive) or sustainable (repeatable, systematic)
Venture Capital	Typically invest in small, early stage (i.e. start-up) and emerging businesses, with no track record of profitability. VC targets young companies expected to have high growth potential, but currently limited access to other forms of capital. VC investments are made with the goal of outsized returns by identifying the most promising companies and successfully exiting.

How to Invest in Private Market

(1of 2)

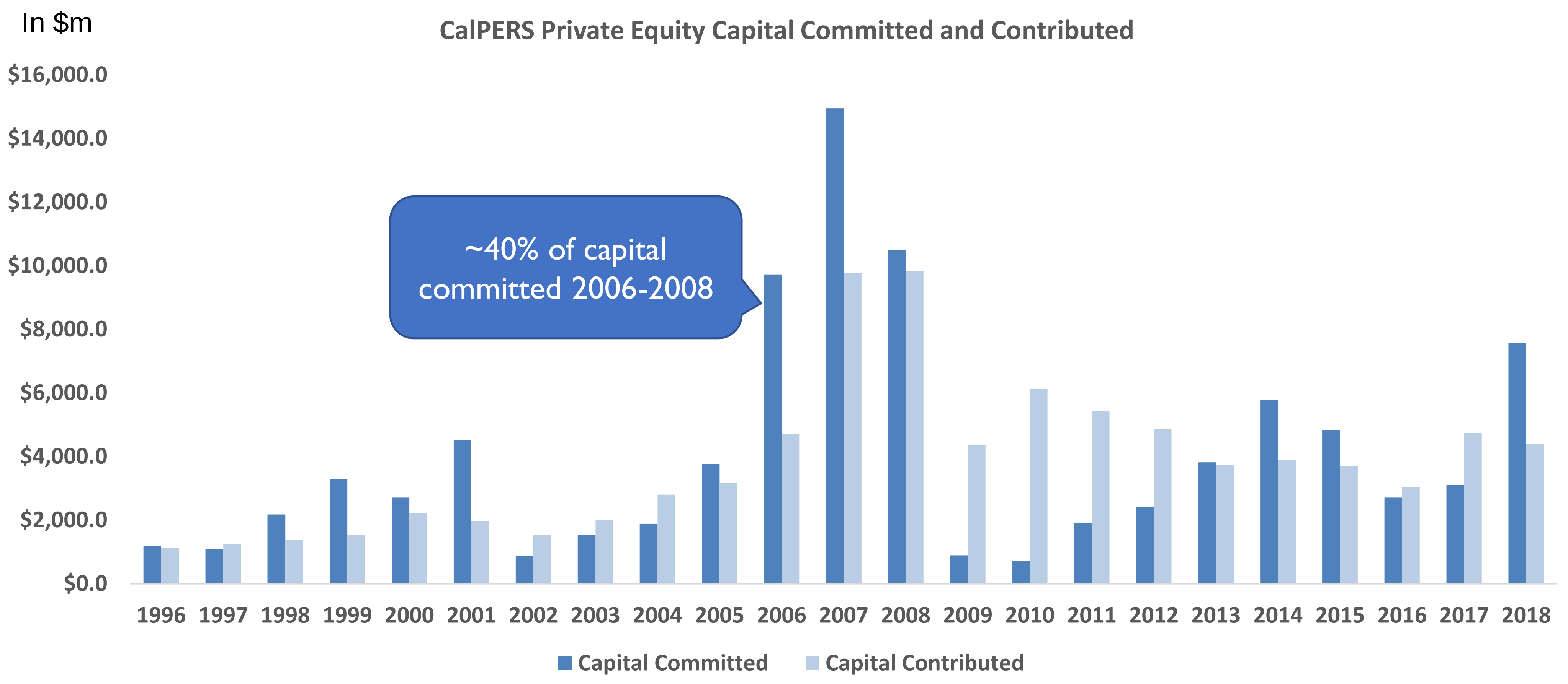
Type	Description
Commingled Funds	A fund that consists of assets from various investors (limited partners or “LPs”) professionally managed by an asset manager (general partner or “GP”). Commingled funds are a type of, and often called a pooled vehicle. However, each investor’s (LP) exposure is *limited* to the assets only they invested in the fund. Commingled funds offer investors professional management, diversification, lower fees and expenses, and economies of scale compared to separately managed accounts.
Separately Managed Account (SMA)	An account owned by a single investor and overseen by a professional money or asset manager (subadvisor) hired by that investor. Separate accounts allow investors to customize their portfolio/exposures and enjoy better governance, liquidity, and control over their assets. However, separate accounts typically involve higher fees and set-up expenses; greater risk and volatility; and more investor due diligence and active oversight.
Co-Investment	An investment made directly into an opportunity/company/asset alongside the financial sponsor of the deal. The investor investing alongside the financial sponsor is typically an existing LP in a fund that the financial sponsor is the GP -- this pre-existing LP-GP relationship distinguishes a co-investment from a direct investment. Unlike an investment in the existing fund, a co-investor rarely pays management fees or carried interest on an individual investment. Co-investment opportunities may offer existing LPs enhanced returns, added control over capital deployment, and create stronger GP relationships. Common concerns include resource intensity, adverse deal selection, and higher portfolio concentration.

How to Invest in Private Market

(2 of 2)

Type	Description
Direct Investment	Investment made directly into a company/firm/asset/opportunity, and not through a fund (commingled or separate account) or alongside a financial sponsor. A direct investor is wholly responsible for the investment, has control over it, reaps all the investment reward, and assumes all of the investment risk. Direct investment requires the greatest resource commitment (upfront due diligence, deal execution, and ongoing monitoring) in exchange for potentially the highest net return of these approaches.
Secondary Funds	A secondary fund is a partnership that specializes in acquiring assets and securities through the secondary market, rather than a primary market. In other words, a secondary fund is composed of assets that have been purchased directly from other investors, rather than from the underlying company itself. Secondary funds can allow an investor to often acquire assets at a discount, gain exposure to a fund that has been closed to additional investors, and exit investments prematurely, if needed.
Fund of Funds (FOF)	A FOF is a pooled investment vehicle that invests in other funds. In other words, its portfolio contains different underlying portfolios of other funds. As such, a FOF is also known as a multi-manager investment. The aim of a FOF is to achieve broad diversification and minimal risk. Such goals can come with higher operating cost, including an additional layer of manager fees and the risk of overlapping holding/positions.

Since 1996, CalPERS has committed $92 billion and contributed $87.6 billion in capital to private equity



Note: Data reported by CalPERS, 1996 – December 2018

Top 10 Public Pension Funds in Private Equity

Rank	Public Pension Fund	Members	Private Equity Investment (Bil.)	Allocation
1	California Public Employees' Retirement System	1,962,935	$27.19	8%
2	Teacher Retirement System of Texas	1,591,955	$21.24	14%
3	Washington State Investment Board	572,279	$20.92	15%
4	California State Teachers' Retirement System	949,370	$18.32	7%
5	New York State Common Retirement Fund	1,122,626	$17.50	8%
6	Oregon Public Employees Retirement System	360,029	$14.31	19%
7	New York City Public Pension Funds	572,755	$12.00	6%
8	The Florida Retirement System	N/A	$11.43	7%
9	State of Michigan Retirement System	530,000	$11.08	15%
10	Ohio Public Employees Retirement System	1,340,488	$9.30	9%

Source: "Public Pension Study," American Investment Council (July 2019). Allocation (%) based on most recent publicly-available AUM from plan website.

Real Assets

Investing In Real Assets

Potential Benefits

- Enhanced, risk-adjusted returns
  - Low correlation to public markets
- Portfolio diversification
- Inflation protection

Potential Risks

- Idiosyncratic risk (deal specific)
  - Structure/credit/leverage/operational
- Liquidity risk
- Regulatory/political risk
- Climate/environmental risk
- Technological risk

Real Assets: Market Segments

Type	Description
Real Estate	Investing that involves the purchase, ownership, management, rental, and/or sale of real estate for profit. The goal of real estate investing is to build up tax-deferred profit through property price appreciation. Investment is capital intensive and highly cash-flow dependent (net operation income, tax offsets, equity build-up, capital appreciation). Strategies include core (low to moderate risk/low return, predictable cash flow), value-added, (medium to high risk/return, targeting properties in need of improvement or with operational/management issues), and opportunistic (high risk/return) in properties that require massive enhancements.
Infrastructure	Investing in basic physical structures that undergird the operation of our society, like transportation facilities, telecommunication networks, sewage, water, and electrical systems. Large scale infrastructure is usually produced by the public sector or publicly-regulated monopolies. Infrastructure investments can be categorized as “soft” (based on human capital…healthcare systems, governmental systems, education systems), “hard” (physical systems…roads, highways, bridges), or “critical” (essential…facilities for telecommunication, public health).

Risk Classifications Across Real Assets

Range of opportunities across the real assets risk / return spectrum including core, value-add, opportunistic / development[1] strategies

INVESTMENTS IN PRIVATELY HELD REAL ASSETS EQUITY

Risk

Opportunistic
11% - 15% returns
>70% leverage

- Equity investments in real estate related assets, including:
- *De novo* development/greenfield, distressed properties, and major turnarounds.
- Seeks to capitalize upon financial and market dislocation.

- Return profile can follow private equity "J-Curve" with little to no current income
- Higher correlation to equities and typically less correlation to inflation
- Expected volatility greater than 15%

Value-Add
7% - 11% returns
50-70% leverage

- Equity investments in existing non-stabilized investments
- Income is typically less than 50% of total return

- Initial or near-term vacancy
- Higher capital expense
- Higher volatility due to leverage +/- 12% to 15%.

Core
5% - 7% returns
<35% leverage

- Equity investments in stabilized, income producing properties
- Long-term risk premium in excess of treasuries 3%-5%
- Income typically represents 70% or more of total return over the long term

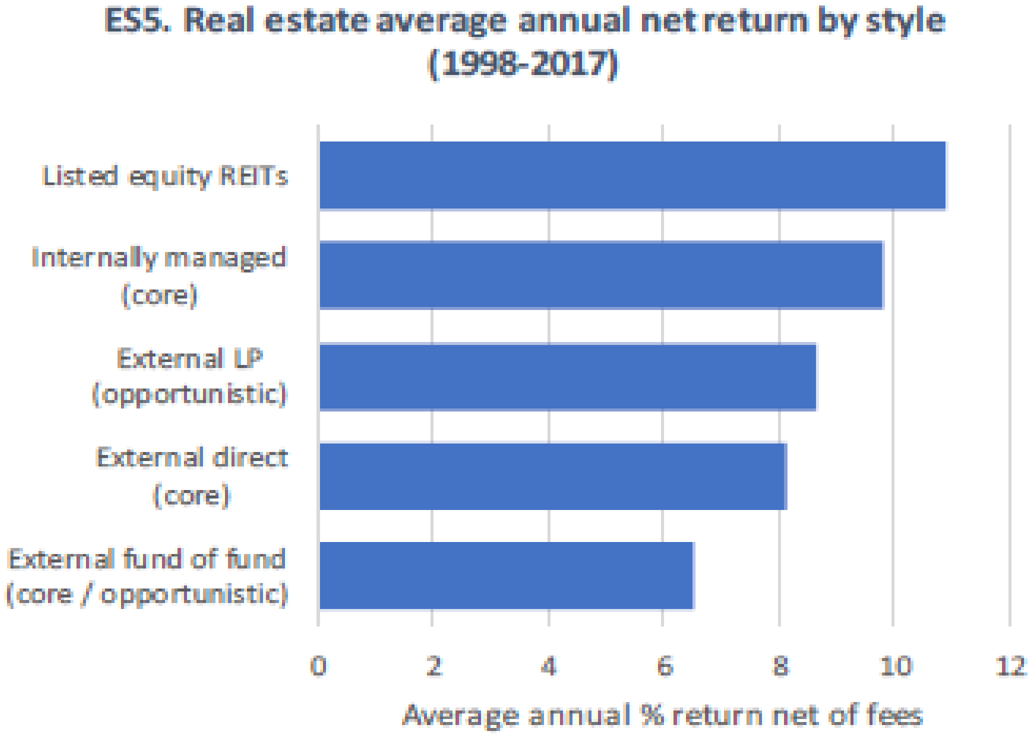
- Modest amount of tenant turnover/leasing risk or significant capital expense.
- Purest diversification benefits with lower correlation to equities/bonds
- Volatility/Risk of <10%

Reward

CalPERS

Source: DWS and CalPERS Investment Policy for Real Assets Program (effective December 17, 2018) Note: For illustrative purposes only. There can be no assurance that objectives will be achieved.
(1) Within CalPERS Real Assets investment Policy, development assets will have a limit of 10% of the Program and each portfolio. All Development assets will be assigned the "opportunistic" risk classification.

Real Estate Average Annual Net Return By Style



- Internally managed real estate has consistently outperformed externally managed
- Opportunistic best externally manage strategy
- Listed REITs outperformed private markets (less diversification benefit with increased public market correlation; return typically enhanced by greater leverage)

Source: "Asset Allocation and Fund Performance of Defined Benefit Pension Funds in the United States, 1998-2017," by Alexander D. Beath and Chris Flynn, CEM Benchmarking, Inc. (October 2019). Leverage levels may vary across strategies which make return comparisons more difficult.

Top 10 U.S. Public Pension Real Estate Investors

Rank	Public Plan	AUM ($BN)	Allocation ($BN)	%
1.	CalPERS	$355.8	$33.4	9.4
2.	CalSTRS	$223.8	$28.7	12.8
3.	Teacher Retirement System of Texas	$193.1	$18.3	12.0
4.	Washington State Investment Board	$128.2	$18.1	14.1
5.	New York State Common	$207.4	$14.2	6.8
6.	Ohio STRS	$ 79.9	$ 9.8	12.3
7.	Oregon PERS	$ 75.0	$ 8.4	11.2
8.	Ohio PERS	$ 81.1	$ 8.1	10.0
9.	Virginia Retirement System	$ 75.8	$ 7.6	10.0
10.	Illinois Teachers Retirement Systems	$ 49.9	$ 7.4	14.8

Source: “Preqin Special Report: The Real Estate Top 100,” Preqin Ltd. (2017).

Private Debt

Private Debt: Market Segments

Type	Description
Direct Lending	Corporate debt in which a lender other than a bank makes a loan to a company without intermediaries such as an investment bank, broker, or private equity firm. In direct lending the borrowers are often small to midsized companies. Direct lending tends to be senior secured debt at the top of a company's capital structure, and can take the form of first lien, second lien, or unitranched loan.
Mezzanine Debt	Subordinated debt with embedded equity instruments (i.e. warrants), increasing the value of the debt. Mezzanine debt is hybrid in that it has both debt and equity features. Mezzanine debt is often used in LBOs to prioritize new owners ahead of existing owners in bankruptcy.
Distressed Debt	Debt securities of companies or governments undergoing financial or operational distress, default, or bankruptcy. It includes all credit instruments that are trading at a significant discount and have a spread substantially wider than the industry average. Mainly involves purchase of securities in the secondary market, rather than new origination of debt structured equity.
Special Situations	Debt or structured equity investments made based on a compelling special situation rather than underlying fundamentals. Typically arise from merger and acquisitions, spinoffs, tender offers, litigation, activism, capital structure dislocations, etc.… Special situations can include trading in the secondary market, direct origination, or distressed debt with price dislocation.
Venture Debt	Debt financing extended to companies (small, start-up, emerging) with venture capital backing, typically to fund working capital or capital expenses. Venture debt providers combine their loans with warrants or options to compensate for the higher risk of default.

Investing In Private Debt

Potential Benefits

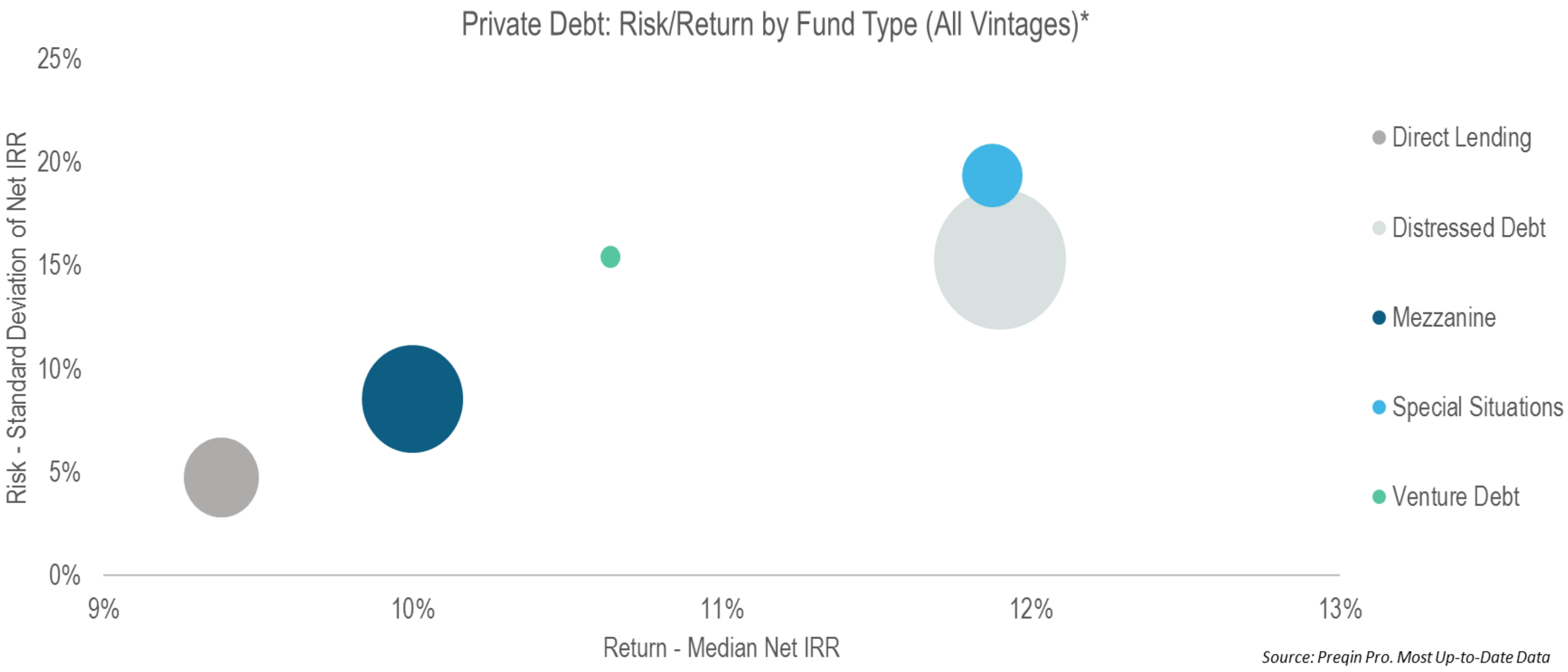
- Enhanced returns
- High risk adjusted and absolute return
- Regular income flow (interest/repayment)
- Portfolio diversification
- Capital preservation
- Less correlation to public equities market
- Volatility reduction

Potential Risks

- Credit risk
- Default and restructuring risk
- Liquidity risk
- Manager selection risk
- Quality of collateral risk

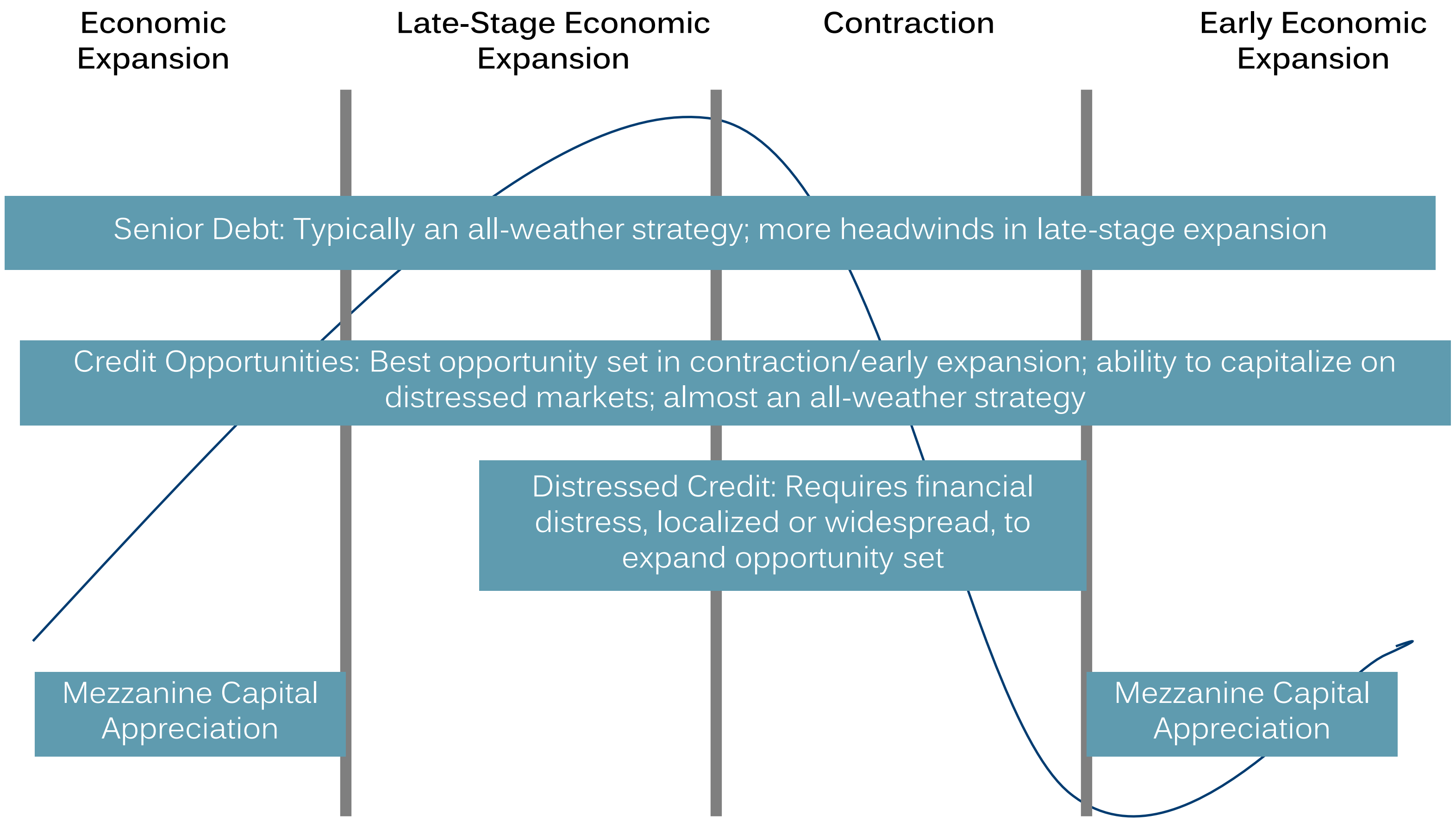
Private Debt– Historical Performance

Strong risk-adjusted returns across private debt strategies



Source: "Presentation on Private Debt" given by Tom Carr, Head of Private Debt, Prequin, at The Real Deal UK Mid Market Debt Conference in London. Preqin Ltd. (September 2019)

Private Debt Across Economic Cycles



Source: Cambridge Associates LLC. Notes: Illustration does not take into account relative value across credit, or relative value between credit and other asset classes. Specialty finance strategies will have different experiences during the credit cycle depending on the type of asset in which they are invested. Committing to draw-down strategies requires a longer investment horizon than investing in open-ended strategies that allow for immediate capital deployment and regular liquidity.

References

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CalPERS