PRIVATE EQUITY REVIEW

SAN BERNARDINO COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

SBcera San Bernardino County Employees' Retirement Association

August 13, 2019

BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

INTRODUCTION

NEPC, LLC

ASSET CLASS ASSIGNMENTS AND STRATEGIC ALLOCATION

Asset Class	Policy Target as of 7/1/2019	Actual Allocation 6/30/2019	Consultant
US Equities	13%	10.2%	NEPC
International Equities	15%	18.2%	NEPC
US Core Fixed Income	2%	0.2%	NEPC
US Credit Fixed Income	13%	13.5%	NEPC
Non-US Core Fixed Income	1%	-4.0%	NEPC
Non-US Credit	11%	13.5%	NEPC
Emerging Market Debt	8%	6.1%	NEPC
Real Estate	7%	4.1%	NEPC
Private Equity	**16%**	**16.1%**	**NEPC**
Real Assets	5%	4.6%	NEPC
Absolute Return	7%	11.9%	NEPC
Cash	2%	5.5%	NEPC

CURRENT INVESTMENT PROGRAM

- **SBCERA has a long-term strategic target allocation of 16% to private equity with a permitted range of 6% to 21%**
- **Current exposure to private equity is as follows:**
  - Approximately $1.68 billion net asset value as of June 30, 2019 (16% of total plan assets), which is within the policy range
  - Approximately $1.05 billion in unfunded capital commitments (10.5% of total plan assets)

- **Private Equity Plan Data ($ Millions)**
  - Historical PE IRR of 8.47%*

Commitment*	Paid In Capital *	Capital to be Funded*	Cumulative Distributed *	Current Valuation (NAV)
$3,935	$2,776	$1,054	$2,762	$1,374

Total Value*	Net Benefit*	Call Ratio*	DPI Ratio*	TVPI Ratio*
$4,136	$1,355	71%	0.99x	1.49x

* Data as of September 30, 2018 from 2019 Pacing Plan

DEFINING PRIVATE EQUITY

What is Private Equity?

- Private Equity is a source of investment capital provided by institutions and individuals for the purposes of acquiring ownership interests in companies that are 'privately owned' rather than 'publicly owned'.

A large investable universe; $3 -to- 4 trillion in assets under management, including portfolio value and un-invested capital

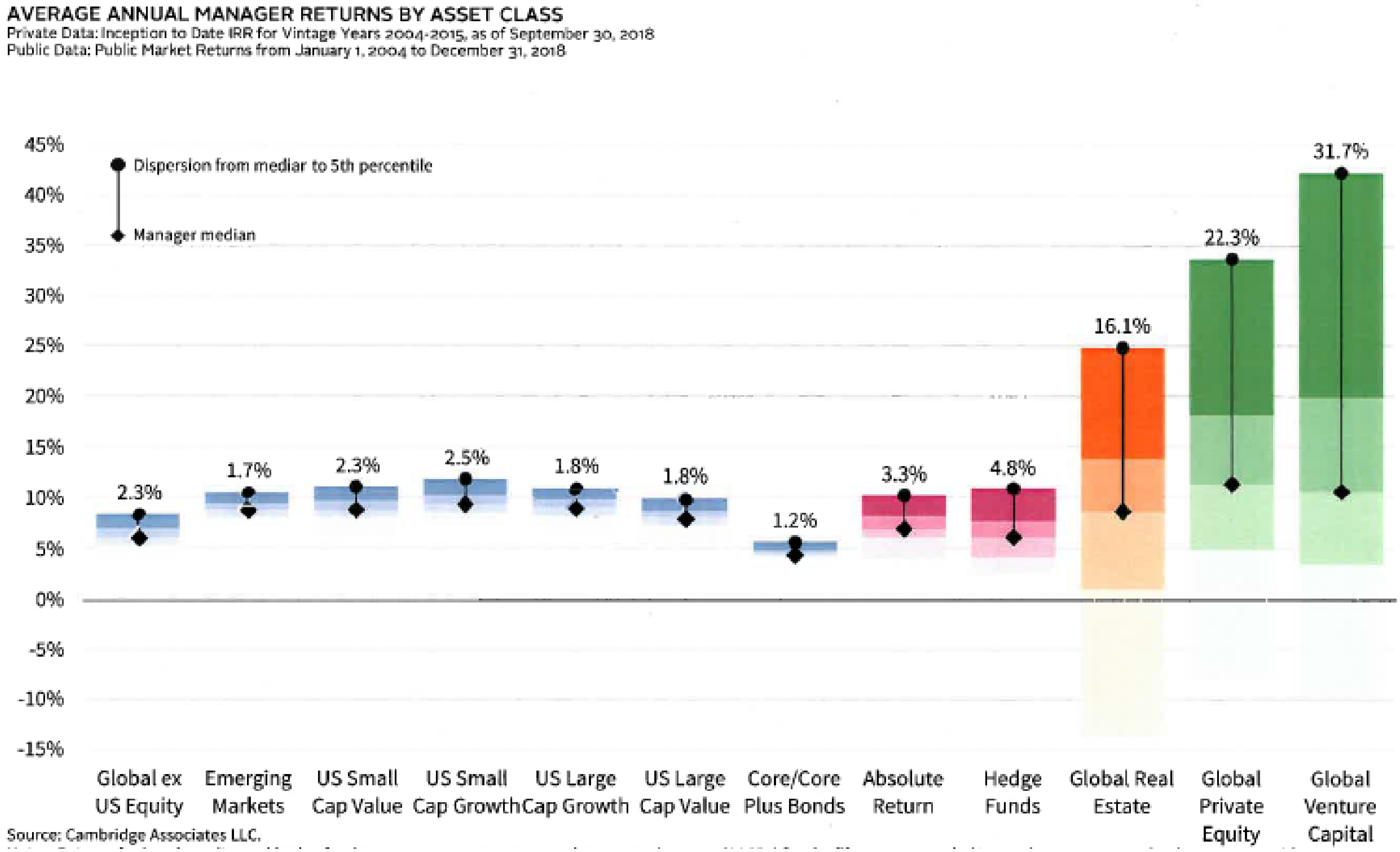
Why allocate?

- Higher return expectation; earn a premium for taking liquidity risk and complexity risk.
- Equity growth diversification; not 100% correlated to public markets and access to a variety of PE sub-strategies.
- Higher probability of consistent manager value-add (Peersistence of performance)

Private Equity Strategy Types

Strategy	Description
Venture Capital	Early stage innovative / start-up companies
Growth Equity	Expansion capital for small, growing established businesses; commonly non-control investments
Buyouts	Investments to restructure or expand established companies; commonly control investments
Special Situations	Investments in mature businesses that may be profitable or unprofitable
Secondaries	Purchases of Limited Partnership interests in established private equity partnerships from other investors
Energy	Exploration, production, transmission, storage of energy sources and related industry services

ALTERNATIVE ASSET RETURNS



HOW PRIVATE EQUITY IS DIFFERENT FROM PUBLIC EQUITY

Public Equity

- Daily liquidity
- Invested immediately
- Daily valuations
- Market pricing
- Fees as a % of NAV
- Regulated reporting
- Benchmark managed
- Some activism

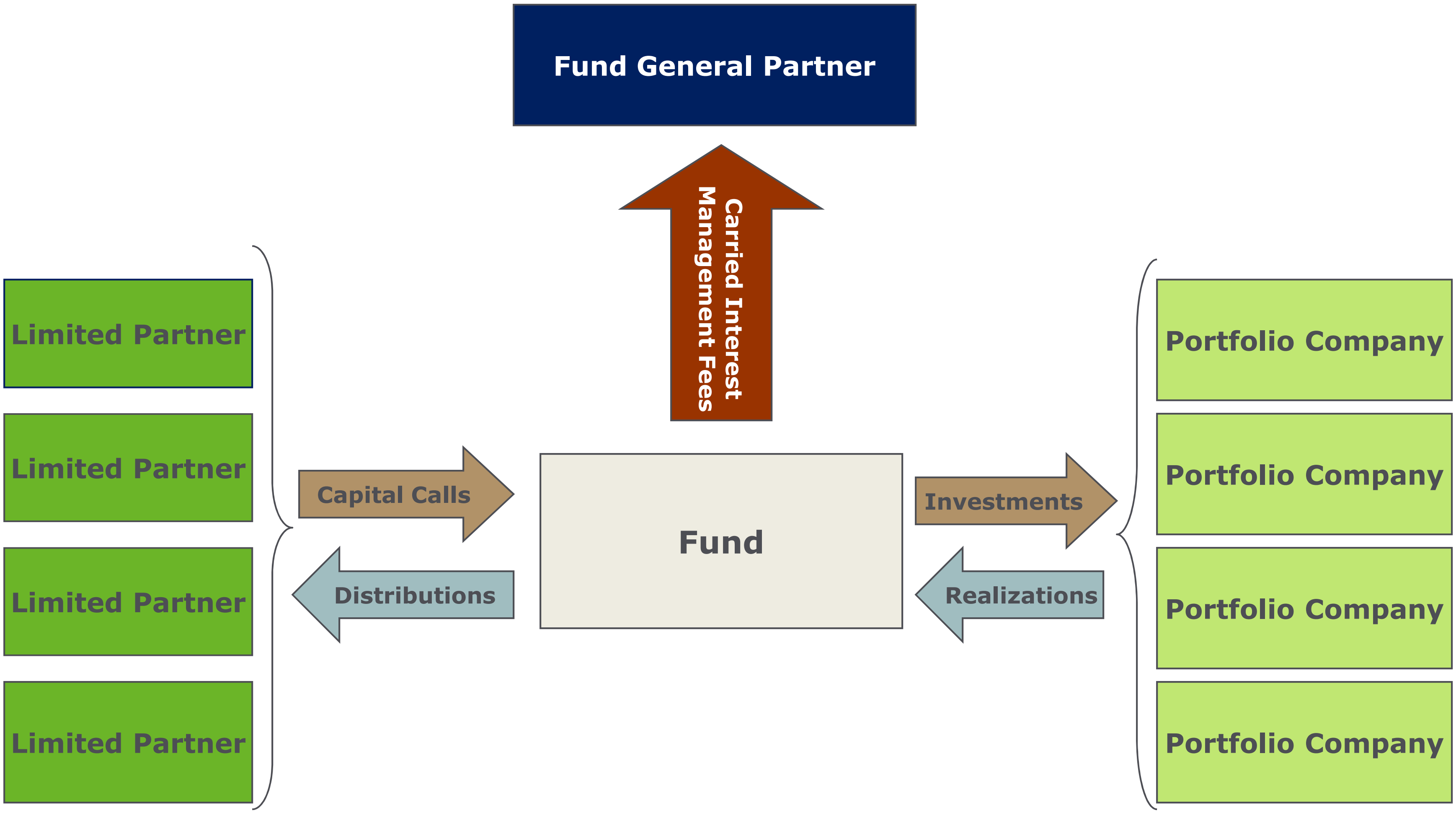
Private Equity

- Illiquid, 10+ year funds
- Invested over time
- Quarterly valuations
- Estimated fair value
- Fees frequently as % of commitment + profit share
- Transparency varies
- Managed for alpha
- Active value creation

NEPC

MECHANICS OF INVESTING IN A PRIVATE EQUITY FUND

- **Rather than buying shares on an exchange, an investment company ('Fund') is formed to own private businesses (portfolio companies).**

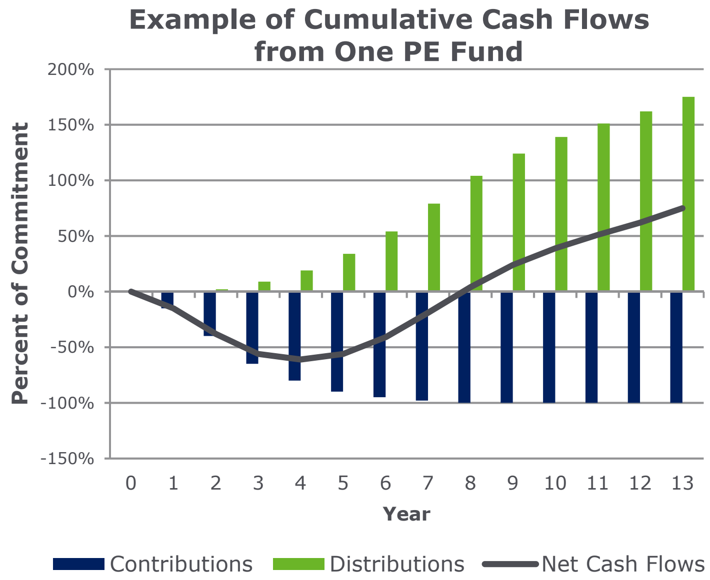


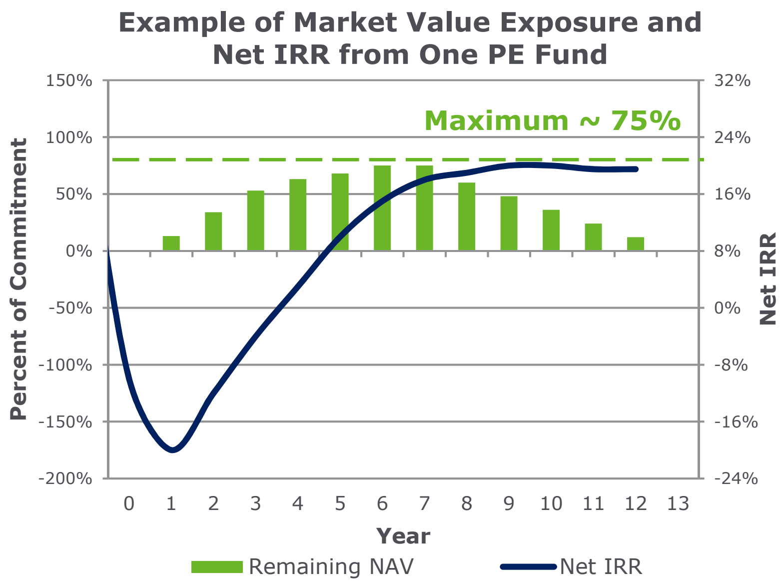
PRIVATE EQUITY CLOSED-END FUND LIFECYCLE

- **Fundraising, (0 – 2 years)**
  - The time period that managers uses to raise sufficient funds for the strategy
  - Limited Partners make an initial "Commitment" to a fund
- **Investing (years 1 – 5)**
  - The time period that managers use to source investment opportunities. This "Investment Period," generally lasts the first four or five years of a fund's life
  - Business plans are put into place. If investments do not meet expectations managers will take steps to mitigate the impact of losses
  - Current income may be paid out during the Investment Period (depending on the strategy), though early distributions may be recalled
  - Limited Partners fund their initial commitments as capital is called over time
- **Harvesting (years 4 – 8)**
  - The time period that managers use to exit the investments through asset sales, portfolio company sales, IPOs, and other exit opportunities
  - The proceeds of the realizations are distributed to fund investors according to a pre-determined schedule, or "Distribution Waterfall", which includes the payment of carried interest to the manager (if applicable)
- **Liquidating (years 7 – 12)**
  - The managers use this time to exit the remaining investments in the portfolio
  - If the fund life is extended beyond its initial term (as stated in fund legal documents), management fees may be negotiated lower or waived

THE "J-CURVE" OF PRIVATE EQUITY CASH FLOWS AND RETURNS

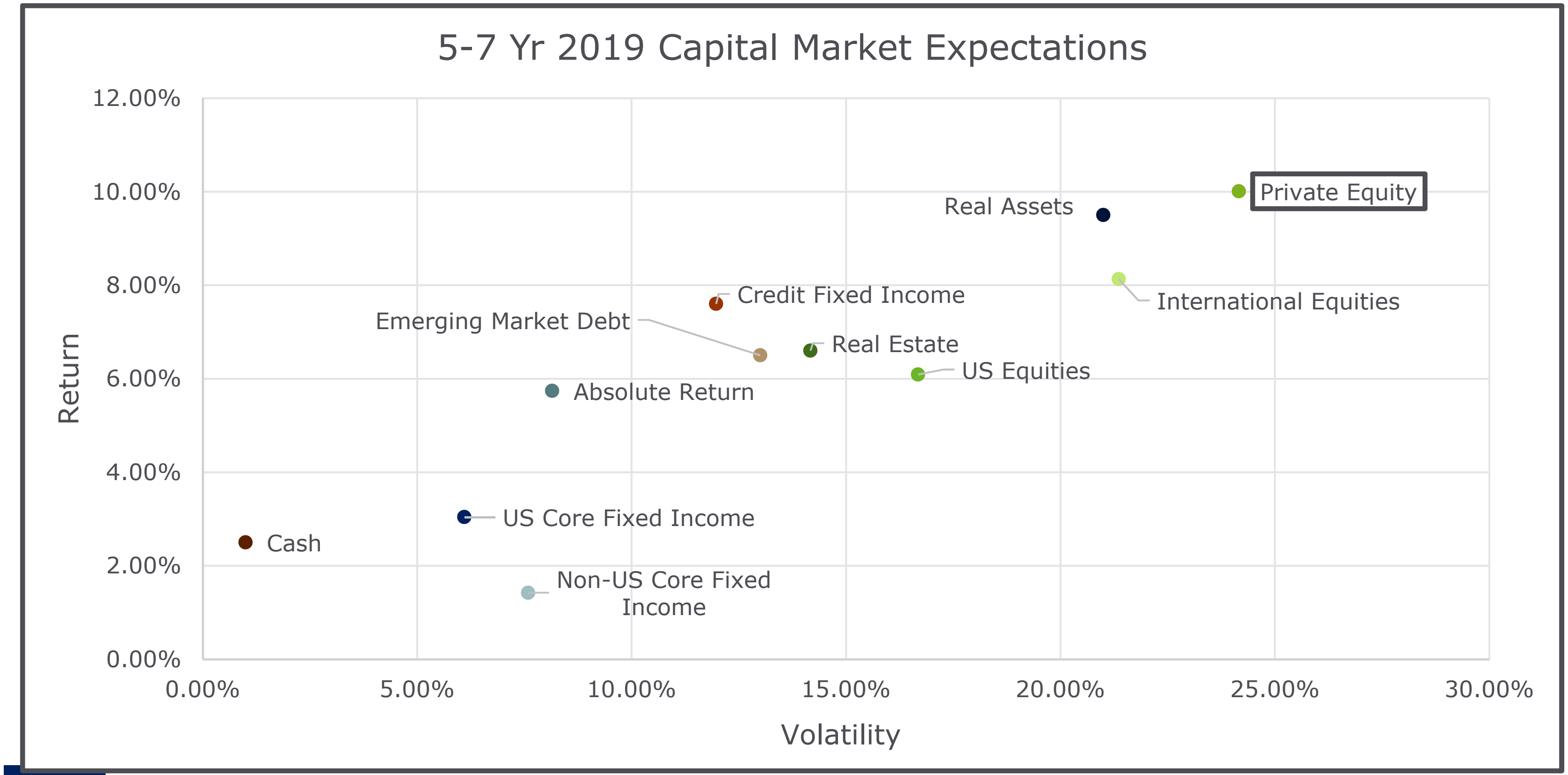
- **Cash flow pattern of investing in private equity**
  - **Years 1-3 returns are negative**, little income is generated, management fees are collected on committed (not invested) base, business plans established but improvements not yet impacting valuations
  - **Years 3-5 returns flatten out and gradually turn positive** as notable improvement in company financials justify valuation increases, debt refinancing may generate distributions and some income is received
  - **Years 5-10 returns spike** as many assets are sold and accumulated increases in value are reflected, and income is received
  - **Years 11-13 flatten out** as residual assets are liquidated
  - **All years combined** leads to what has been termed the "**J-Curve**."





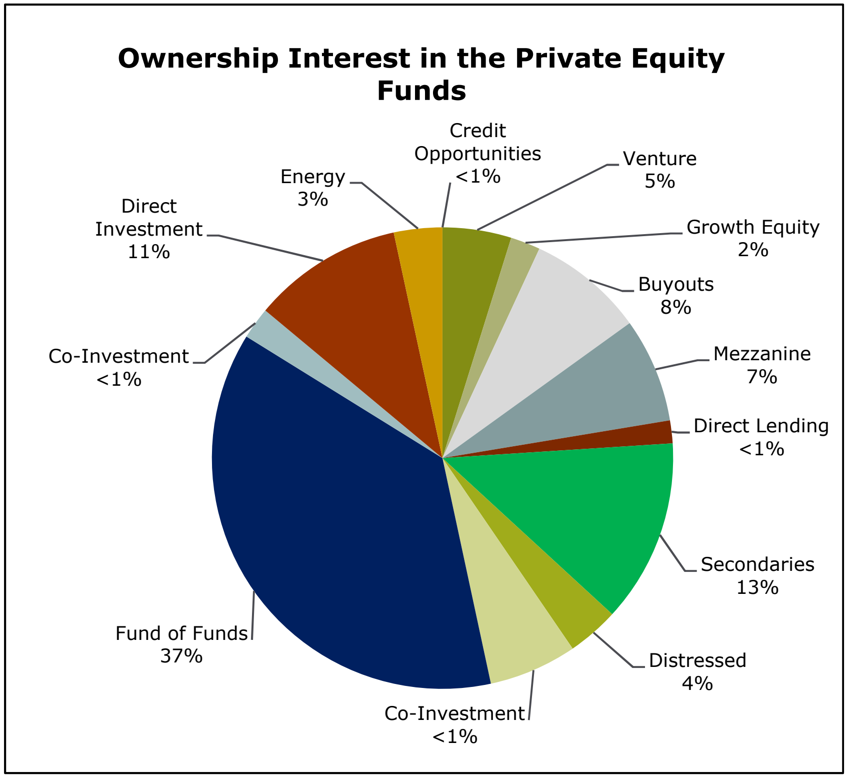
THE ROLE OF PRIVATE EQUITY IN THE PLAN

- **Higher expected returns over other investment options**
- **Higher probability of consistent manager value-add (Persistence of performance)**
- **Diversification; GPs have multiple levers to create value:**
  - Growing EBITDA (through organic revenue growth, cost cutting, making acquisitions, influencing management policies and restructuring)
  - Using leverage

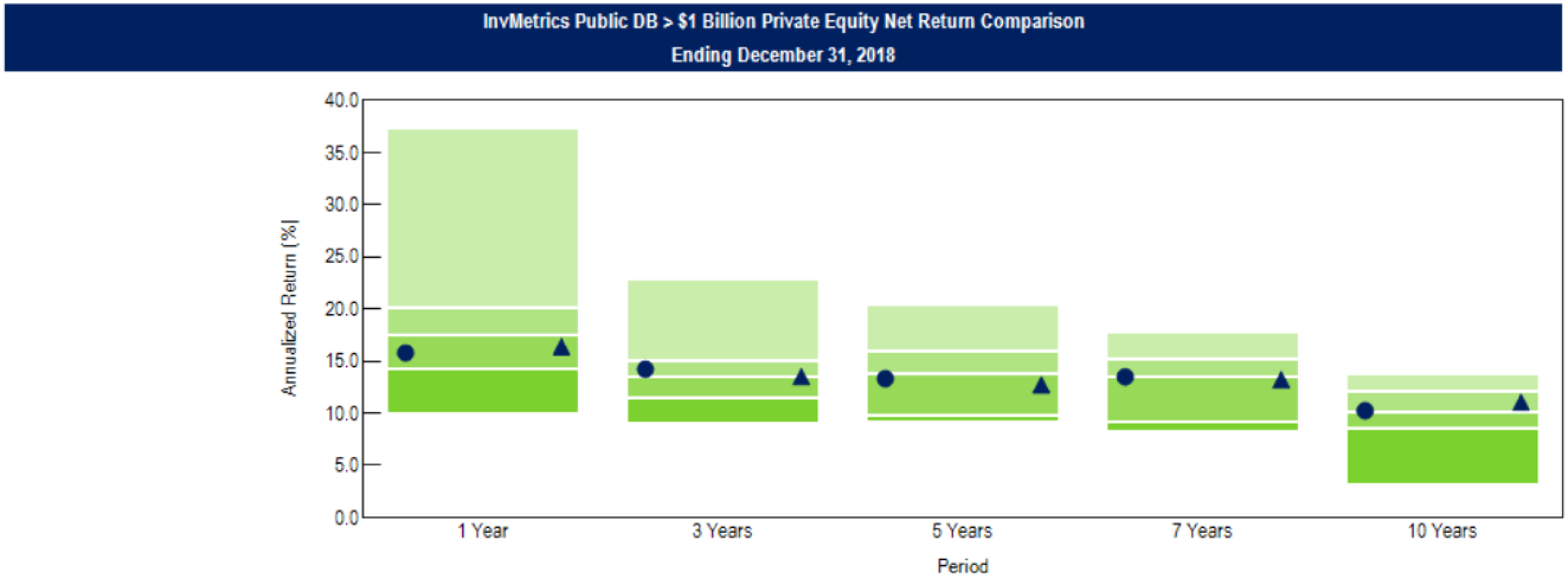


CURRENT PRIVATE EQUITY STRUCTURE

Diversified	Partners Group SMA (MCA)
	Pathway Capital SMA (MCA)
	Pathway PE Fund VII LLC
	SL Capital European Strategic Partners 2004
	SL Capital European Strategic Partners 2008
Buyout Funds	Aurora Equity Partners IV
	Kayne Partners Fund IV LP (MCA)
	Partners Group Direct Equity 2016 (MCA)
	Partners Group Direct Investments 2012 LP
	Partners Group European Buyout 2005 (A) LP (MCA)
	Waterfall Sentinel Fund (MCA)
Venture Funds	Industry Ventures Direct LP (MCA)
	Industry Ventures Fund V LP (MCA)
	Industry Ventures Fund VI LP (MCA)
	Industry Ventures MCA
	Industry Ventures Partnership Holdings II LP (MCA)
	Industry Ventures Partnership Holdings III LP (MCA)
	Industry Ventures Partnership Holdings III-A LP (MCA)
	Industry Ventures Partnership Holdings IV LP (MCA)
	Industry Ventures Special Opportunities Fund II-A LP (MCA)
Secondary Funds	Aberdeen Standard Secondary Opportunities Fund IV
	Industry Ventures Secondary VII LP (MCA)
	Industry Ventures Secondary VIII LP (MCA)
	Lexington Capital Partners VI
	Lexington Capital Partners VII
	Lexington Middle Market Investors I
	Lexington Middle Market Investors II
	Partners Group Secondary 2004 LP
	Partners Group Secondary 2008 LP
	SL Capital Secondary Opportunities Fund I
	SL Capital Secondary Opportunities Fund II
	SL Capital Secondary Opportunities Fund III
Sector Specific Funds	Kayne Anderson Energy Fund VII LP
	Tennenbaum Energy Opportunities Fund LP (MCA)



PRIVATE EQUITY UNIVERSE COMPARISON (TWR)



Return (Rank)	1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	37.24		22.86		20.35		17.67		13.64	
25th Percentile	20.19		15.14		16.05		15.27		12.14	
Median	17.62		13.50		13.81		13.49		10.15	
75th Percentile	14.31		11.49		9.82		9.32		8.59	
95th Percentile	9.96		9.03		9.26		8.38		3.30	
# of Portfolios	27		27		26		23		18	
● Private Equity Composite	15.80	(58)	14.23	(35)	13.33	(53)	13.49	(51)	10.25	(49)
▲ Cambridge Associates Global All PE (Qtr Lag	16.41	(53)	13.53	(48)	12.74	(55)	13.22	(54)	11.06	(38)

PRIVATE EQUITY PERFORMANCE

Internal Rate of Return IRR, Since Inception (April 2005)	Internal Rate of Return IRR, Since Inception (April 2005)
8.89%	8.89%

Public Market Equivalent (Russell 3000 Index)	IRR ICM	IRR Spread
(Kaplan-Schoar PME)	Russell 3000 Index	
1.11	6.21%	2.68%

Since Incpetion Quartile Returns					
	Top 5%	Upper Quartile	Median	Lower Quartile	Bottom 5%
Cambridge US Private Equity & VC Index	59.89	20.51	10.31	0.45	-20.94
Cambridge Global Private Equity & VC Index	61.79	20.53	10.04	0.62	-21.12

	1 Year IRR	3 Year IRR	5 Year IRR
Total SBCERA Private Equity	13.28	12.24	12.48
Cambridge US Private Equity & VC Index	14.09	13.49	13.48
Cambridge Global Private Equity & VC Index	11.82	13.57	12.57

	1 Year	3 Year	5 Year
Total SBCERA Private Equity (TWR)	15.8	14.23	13.33

Data is final audited data as of December 31, 2018. Returns expressed as IRR unless otherwise noted.

PRIVATE EQUITY: FUNDRAISING & MARKET THOUGHTS

NEPC, LLC

PRIVATE EQUITY THOUGHTS

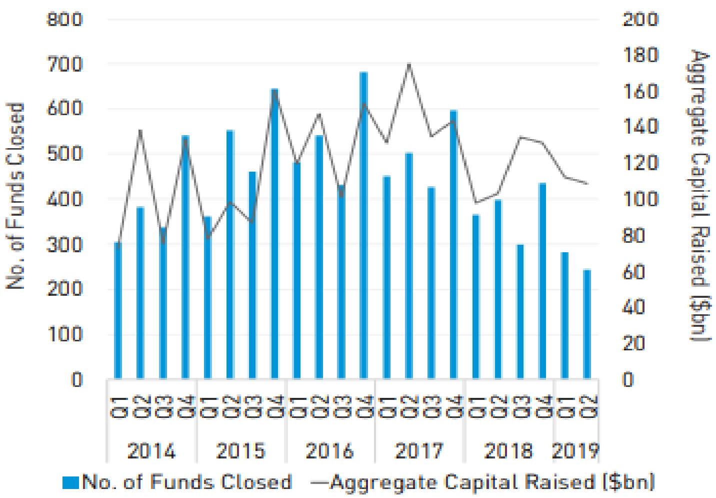
Private Markets Thoughts

- **Fundraising has continued to be robust and efficient—and early**
- **Valuations are still at cyclical highs, but capital put to work in 2019 vintage funds may see better buying opportunities**
- **Rising rates, deteriorating credit quality and overall credit levels portend a riskier future for performing credit**
- **Late cycle commitments often outperform mid-cycle ones that have not had the opportunity to de-risk**

PRIVATE EQUITY FUNDRAISING ENDED Q2 2019

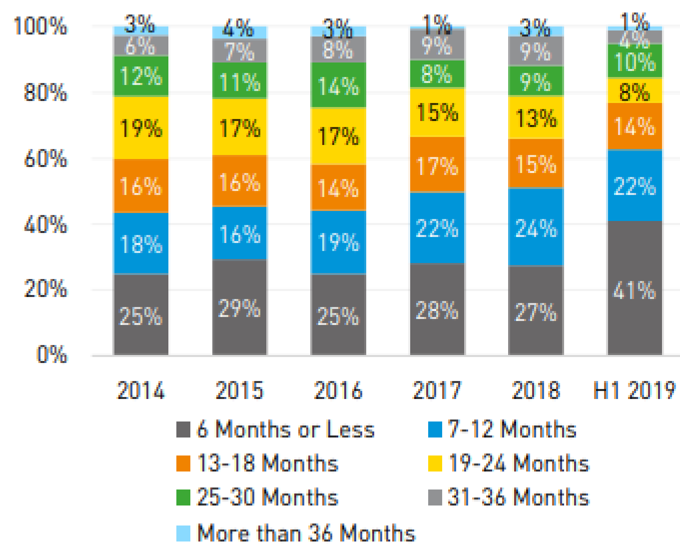
- **Total fundraising year-to-date, reached a total of approximately $220 billion.**
  - The number of funds raising capital and totals raised has slowed significantly versus prior years.
- **Only 19% of funds closed in 2019 did not meet their funding goals.**
- **High demand from investors is resulting in speedy fund raising timelines**
  - 40% of funds closed in 2019 were in the market for six months or less.
  - 60% raised their funds in less than a year.

Fig. 1: Global Quarterly Private Equity Fundraising, Q1 2014 - Q2 2019



Source: Preqin Pro

Fig. 3: Average Time Spent in Market by Private Equity Funds Closed, 2014 - H1 2019



CURRENT (2019) PACING PLAN

DEC. 2018 APPROVED PRIVATE EQUITY/ MCA RECOMMENDATION

- **NEPC recommended committing approximately $500 million to private equity and MCA obligations during 2019. Historical and expected MCA commitments are shown below.**

Manager	2017 Total Commitments	2018 Total Commitments	2018 New Commitments	2018 Total Commitments	2019 New Total Estimate*
Total PE Budget	**$400**	**$500**		**$500**	**$500**
Aberdeen Standard SOF IV	-	-	$40	$40	-
Alcentra (Kneiff Tower)	$50	$25	-	$25	-
Ares MCA	$25	$25	($10)	$15	$15
Crestline Portfolio Financing Fund	-	-	$50	$50	-
Gramercy MCA	$50	$50	$20	$70	$25
Industry Ventures MCA	$60	$75	-	$75	$100
Kayne Anderson MCA	$30	$30	-	$30	$30
Partners Group MCA	$60	$40	-	$40	-
Pathway Capital MCA	$70	$40	-	$40	$70
Tennenbaum MCA	$50	$50	-	$50	$30
Waterfall MCA	-	-	$65	$65	-
Allocated PE Budget	**$395**	**$335**	**$165**	**$500**	**$270**
Unallocated PE Budget	**$5**	**$165**		**$0**	**$230**

- **The allocations will continue to be biased toward strategies with stronger early distribution characteristics. The $500 million target will allow SBCERA to maintain target exposure while investing in private assets across all the sub-strategies including but not limited to distressed debt, direct lending, mezzanine debt, equity buyout, growth equity, and venture capital.**

- **These recommendations are intended to be used as a directional guideline based on market conditions and revisited annually.**

* Actual 2019 commitments are not shown.

FUND OVERVIEW AND ASSUMPTIONS

($ in millions)

General Plan Assumptions

Total Program Assets	$10,376
Total Private Equity Assets	$1,374
Private Equity Capital to be Funded	$1,059
Total Private Equity Exposure	$2,434
Total Private Equity Assets / Total Plan Assets	13.2%
Total Private Equity Exposure / Total Plan Assets	23.5%
Target Private Equity Allocation % (Current Target)	16.0%

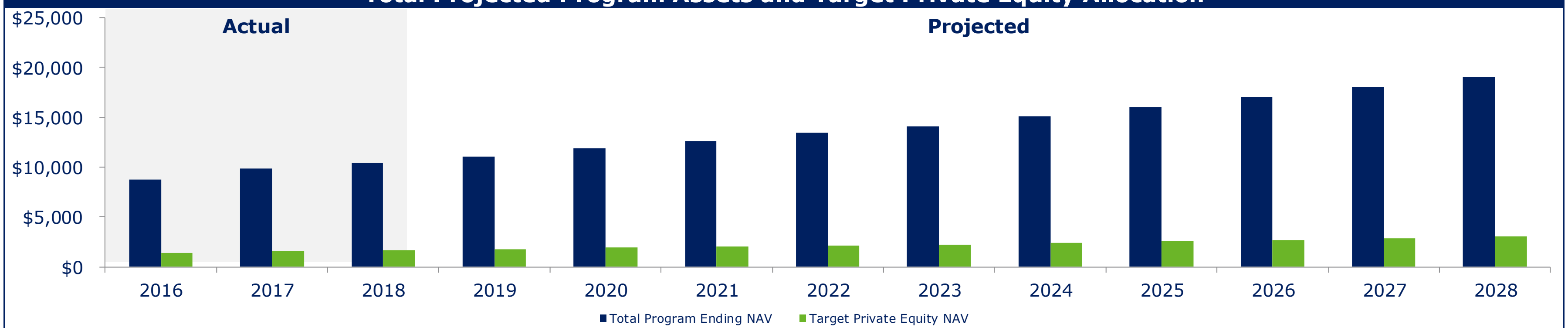
Program Return Assumptions	2019	2020	2021
Target Investment Return %	7.6%	7.6%	7.6%
Contributions %	5.2%	4.9%	4.6%
Payouts %	5.7%	5.7%	5.6%
Expenses %	0.1%	0.1%	0.1%
Reserve for Expenses %	0.0%	0.0%	0.0%
Net Program Growth Rate %	7.0%	6.8%	6.5%

Program Data as of: 9/30/2018
Private Equity Data as of: 3/31/2018

Total Projected Plan Assets

	Actual			Projected									
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Total Program Net Growth Rate	9.7%	11.9%	5.4%	7.0%	6.8%	6.5%	6.2%	5.4%	6.6%	6.3%	6.2%	6.0%	5.8%
Total Program Beginning NAV	$8,017	$8,796	$9,845	$10,376	$11,107	$11,861	$12,630	$13,413	$14,142	$15,081	$16,031	$17,032	$18,052
Yearly Net Growth	$780	$1,048	$532	$730	$754	$769	$783	$730	$939	$950	$1,000	$1,020	$1,043
Total Program Ending NAV	$8,796	$9,845	$10,376	$11,107	$11,861	$12,630	$13,413	$14,142	$15,081	$16,031	$17,032	$18,052	$19,095
Target Private Equity Allocation	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%
Target Private Equity NAV	$1,407	$1,575	$1,660	$1,777	$1,898	$2,021	$2,146	$2,263	$2,413	$2,565	$2,725	$2,888	$3,055

Total Projected Program Assets and Target Private Equity Allocation

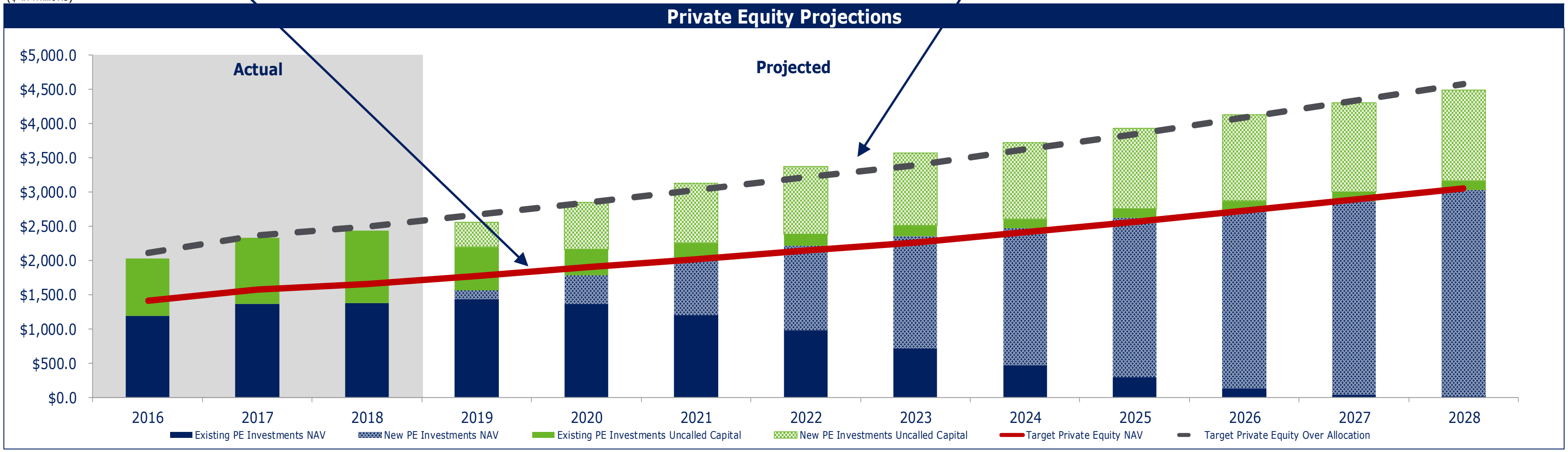


Analysis based on 9/30/2018 plan data and 3/31/18 fund data.
Target Investment Return is calculated based on NEPC's return assumptions from the asset allocation analysis.
Contributions, Payouts, and Expenses are based on the actuarial assumptions for the Plan.

DEC. 2018 APPROVED PACING PLAN: FUND PROJECTIONS

- **Red line** is the 16% target private equity allocation based on projected plan total NAV; **Black dashed line** is the 1.5x over-commitment.
- Goal is to keep private equity NAV (**blue bar**) plus uncalled capital commitments (**green bar**), between red line and black dashed line.

($ in millions)



	Actual			Projected									
Year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Private Equity NAV	$1,194	$1,362	$1,374	$1,563	$1,784	$2,017	$2,211	$2,361	$2,470	$2,618	$2,738	$2,872	$3,027
Uncalled Capital Commitments	$838	$972	$1,059	$994	$1,064	$1,116	$1,157	$1,205	$1,255	$1,320	$1,393	$1,437	$1,461
Private Equity NAV + Uncalled Capital Commitments	$2,032	$2,334	$2,434	$2,557	$2,847	$3,134	$3,368	$3,566	$3,725	$3,937	$4,131	$4,309	$4,488
Target Private Equity NAV	$1,407	$1,575	$1,660	$1,777	$1,898	$2,021	$2,146	$2,263	$2,413	$2,565	$2,725	$2,888	$3,055
Over-Commitment Pace	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x	1.50x
Target Private Equity Over Allocation	$2,111	$2,363	$2,490	$2,666	$2,847	$3,031	$3,219	$3,394	$3,620	$3,848	$4,088	$4,332	$4,583
Private Equity Percent of Total Program Assets													
Private Equity NAV	13.6%	13.8%	13.2%	14.1%	15.0%	16.0%	16.5%	16.7%	16.4%	16.3%	16.1%	15.9%	15.9%
Private Equity Uncalled Capital Commitments	9.5%	9.9%	10.2%	8.9%	9.0%	8.8%	8.6%	8.5%	8.3%	8.2%	8.2%	8.0%	7.6%
NAV + Uncalled Capital Commitments	23.1%	23.7%	23.5%	23.0%	24.0%	24.8%	25.1%	25.2%	24.7%	24.6%	24.3%	23.9%	23.5%
Target Private Equity Allocation	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%

Analysis based on 9/30/2018 plan data and 3/31/18 fund data.

PRIVATE EQUITY COMMITMENTS

($ in millions)

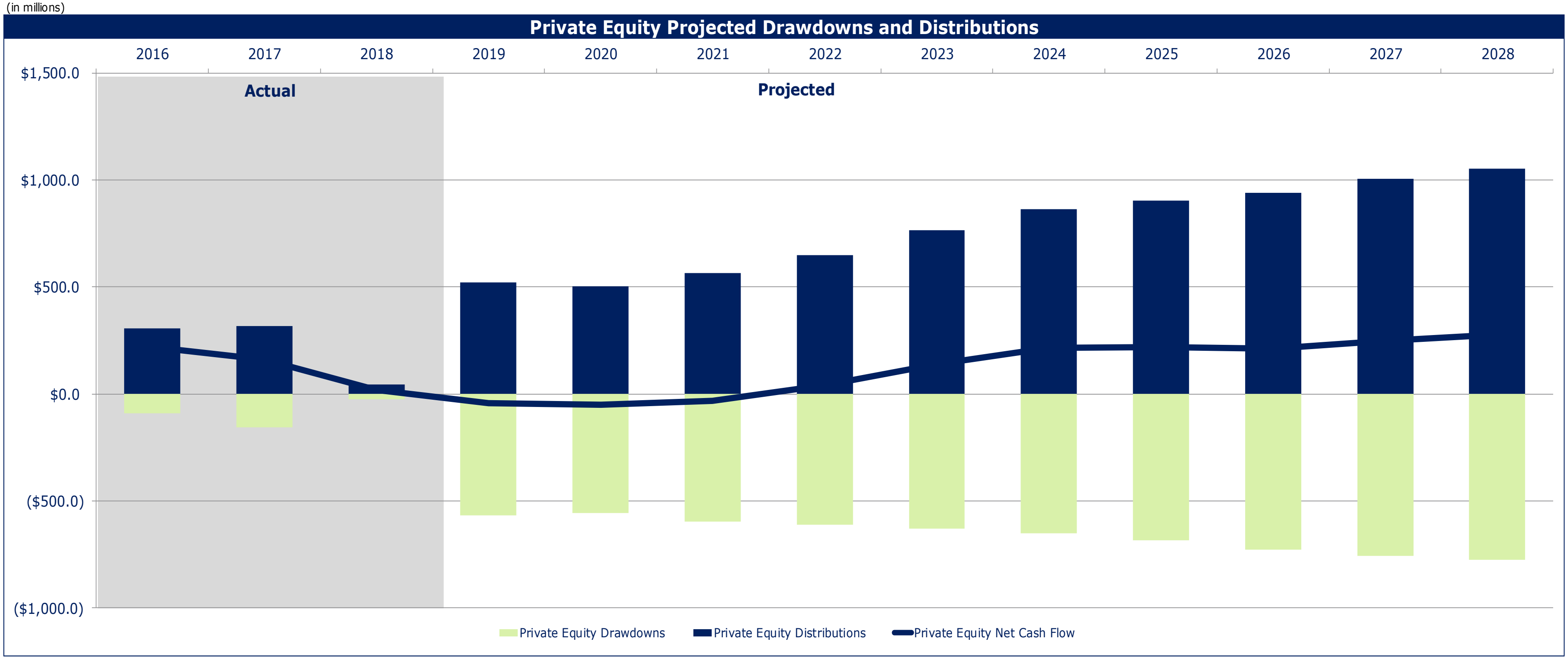
Private Equity Commitments by Vintage Year

	Actual			More Certain			Less Certain						
Year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Total Commitments	$380	$395	$500	$500	$625	$650	$650	$675	$700	$750	$800	$800	$800

Analysis based on 9/30/2018 plan data and 3/31/18 fund data.

PRIVATE EQUITY CASH FLOWS

(in millions)



	Actual			Projected									
Year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Private Equity Drawdowns	($89)	($154)	($25)	($567)	($555)	($597)	($609)	($628)	($650)	($685)	($727)	($756)	($776)
Private Equity Distributions	$307	$316	$45	$523	$503	$567	$650	$766	$865	$904	$940	$1,006	$1,053
Private Equity Net Cash Flow	$218	$162	$20	($44)	($52)	($31)	$41	$139	$216	$219	$213	$250	$277

Analysis based on 9/30/2018 plan data and 3/31/18 fund data.
Actual cash flow for 2018 is through 3/31/18.

GLOSSARY OF TERMS

- **Commitment Amount** – The amount an investor has committed to invest with the General Partner
- **Paid In Capital** – The amount an investor has contributed for investments and management fees
- **Capital to be Funded** – The remaining amount an investor contractually has left to fund its commitments
- **Additional Fees** – Fees that are outside the capital commitment, also includes interest paid/received due from subsequent closings of the fund
- **Cumulative Distributions** – The amount an investor has received from realized and partially realized investments
- **Valuation** – Sum of the fair market value of all investments plus cash
- **Call Ratio** – Calculated by dividing Amount Funded by Capital Committed
- **DPI Ratio** - Calculated by dividing Amount Distributed by Amount Funded
- **Market Exposure** – Calculated by adding Reported Value plus Unfunded Commitments
- **Total Value** – Calculated by adding Amount Distributed and Reported Value. Represents the total amount an investor should expect to receive from their investments
- **Net Benefit** – Calculated by subtracting Total Value by Capital to be Funded plus Additional Fees
- **Total Value to Paid In Capital Ratio** – Calculated by dividing Total Value by Amount Funded. Represents the multiple of the overall cash invested that an investor is expected to receive
- **IRR** - The calculation of the IRR (Internal Rate of Return) takes into consideration the timing of cash contributions and distributions to and from the partnerships, the length of time the investments have been held and the sum of the Reported Value
- **Index Comparison Method (ICM**) – represents the hypothetical IRR of a private investment program that is computed by assuming the fund flows were invested in and out of a publicly traded index. The resulting hypothetical market value of the program is then used with the program's actual cash flows to compute a hypothetical IRR. This hypothetical IRR can be compared with the actual IRR to determine whether the private investment program outperformed the publicly traded index
- **Valuation ICM** – The valuation equivalent that ICM calculates for the public market is called valuation ICM
- **KS PME** – The Kaplan Schoar Public Markets Equivalent is a ratio of the future value of all distributions divided by the future value of all contributions using the index return as the discount rate. The ending valuation is treated as a distribution in this method
- **IRR ICM** – The IRR equivalent that ICM calculates for the public market is called IRR ICM