



INVESTMENT GROUP

# San Jose Federated City Employees' Retirement System

Fourth Quarter 2019

Private Markets Program  
**PUBLIC**

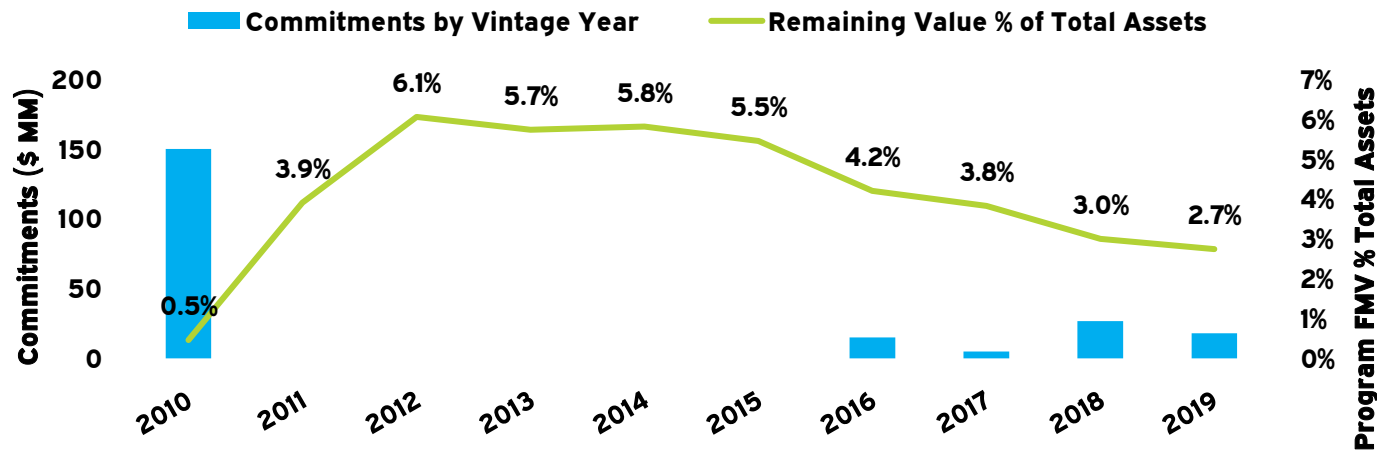
### Snapshot

#### By Account

Account Type	Inception Year	Committed (\$ MM)	Contributed (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	TVPI (X)	IRR (%)	PME IRR (%)
Legacy Private Equity	2004	174.3	152.3	188.1	38.1	1.48	7.5	6.7
NB Fund of One	2017	261.7	89.5	2.3	99.8	1.14	14.7	12.9
Private Debt	2010	214.6	216.6	182.9	60.8	1.13	4.0	6.6
Real Estate	2005	207.2	160.0	143.8	60.3	1.28	6.1	7.9
Real Assets	2016	35.2	23.5	3.2	23.1	1.12	6.8	10.5
<b>Total</b>		<b>893.0</b>	<b>642.0</b>	<b>520.2</b>	<b>282.2</b>	<b>1.25</b>	<b>6.4</b>	<b>NA</b>

### Introduction

As of December 31, 2019, the San Jose Federated City Employees' Retirement System had committed \$214.6 million to six private debt partnerships and two co-investments. The reported fair value of the aggregate Private Debt Program was \$60.8 million at December 31, 2019, which equates to 2.7% of the overall Retirement System, versus a 4.0% policy target as of year-end 2019, which was reduced to 3.0% in April 2020.



### Program Status

No. of Investments	8
Committed (\$ MM)	214.6
Contributed (\$ MM)	216.6
Distributed (\$ MM)	182.9
Remaining Value (\$ MM)	60.8

### Performance Since Inception

	Program	Benchmark
DPI	0.84x	0.58x
TVPI	1.13x	1.29x
IRR	4.0%	9.4%

### Commitments

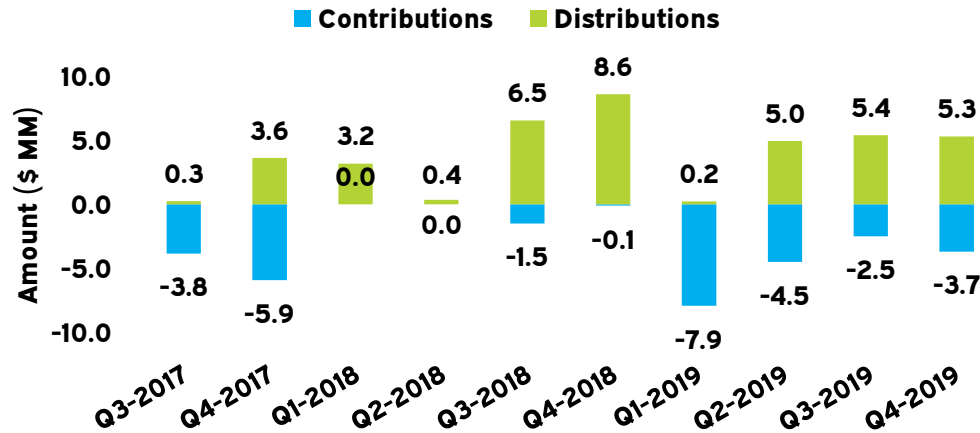
#### Commitments This Quarter

Fund	Strategy	Region	Amount (MM)
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None to report.

### Cash Flows

#### Recent Quarterly Cash Flows



#### Largest Contributions This Quarter

Fund	Vintage	Region	Amount (\$MM)
Cross Ocean ESS III	2019	Western Europe	3.48
GSO Direct Lending	2010	North America	0.12
White Oak DL	2010	North America	0.09

#### Largest Distributions This Quarter

Fund	Vintage	Region	Amount (\$MM)
Medley II	2010	North America	2.58
Cross Ocean ESS II	2016	Western Europe	2.18
Octagon CLO III	2018	North America	0.27

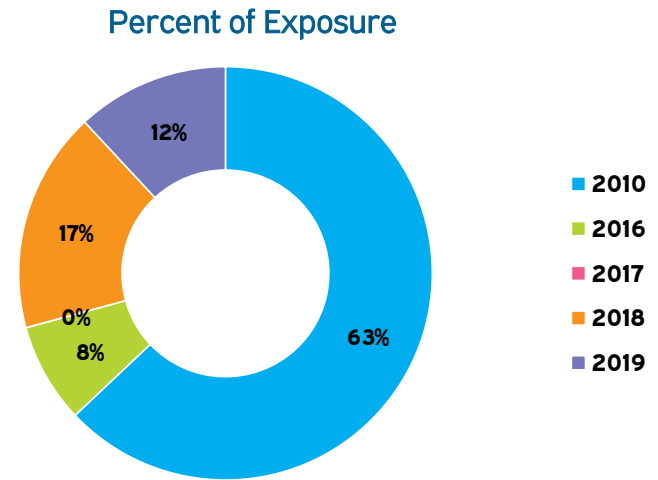
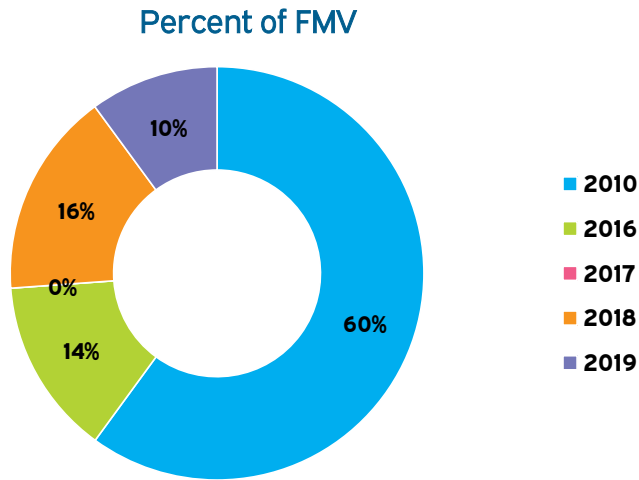
#### By Vintage

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
2010	3	150.0	183.1	58.3	170.2	36.5	94.8	0.93	1.13	3.7
2016	1	15.0	12.0	3.4	5.9	8.4	11.8	0.49	1.19	8.6
2017	1	5.0	5.0	0.0	6.1	0.0	0.0	1.22	1.22	12.9
2018	2	26.6	10.3	16.3	0.6	9.8	26.1	0.06	1.01	NM
2019	1	18.0	6.2	11.8	0.0	6.1	17.9	0.00	0.99	NM
<b>Total</b>	<b>8</b>	<b>214.6</b>	<b>216.6</b>	<b>89.7</b>	<b>182.9</b>	<b>60.8</b>	<b>150.6</b>	<b>0.84</b>	<b>1.13</b>	<b>4.0</b>

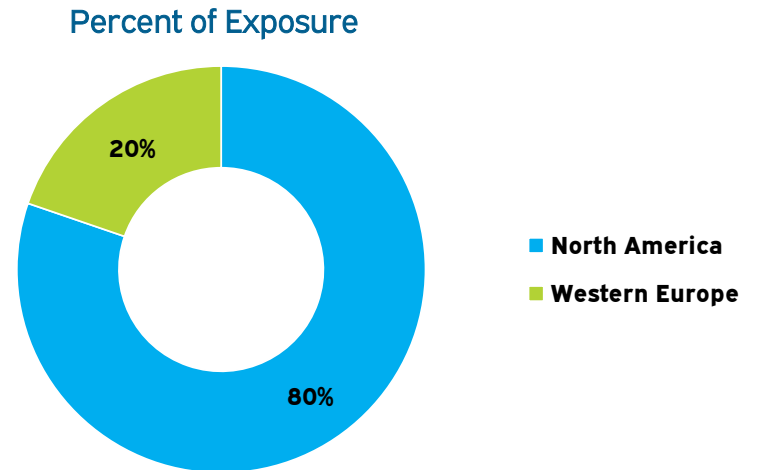
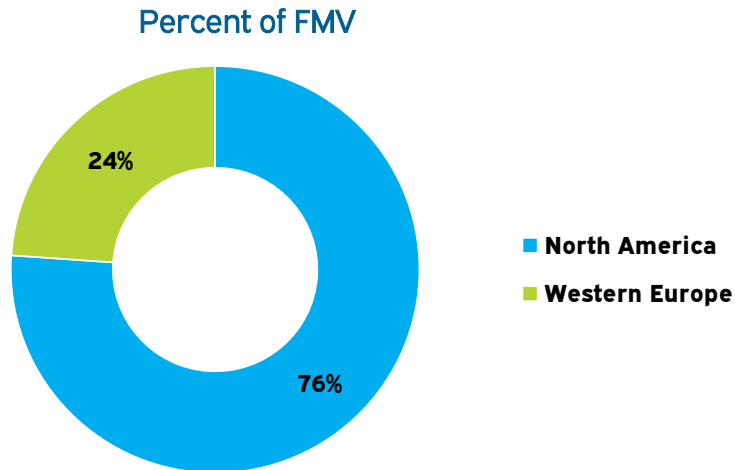
### Fund Performance: Sorted By Vintage

By Investment	Vintage	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
GSO Direct Lending	2010	50.0	43.0	29.3	45.0	6.5	1.20	1.32	6.1	10.3
Medley II	2010	50.0	51.7	1.7	43.6	16.9	1.17	1.32	3.3	10.3
White Oak DL	2010	50.0	88.3	27.3	81.7	13.1	1.07	1.32	2.8	10.3
Cross Ocean ESS II	2016	15.0	12.0	3.4	5.9	8.4	1.19	1.19	8.6	10.3
ArrowMark Sep Acct	2017	5.0	5.0	0.0	6.1	0.0	1.22	1.15	12.9	11.2
Crestline Co-Invest	2018	1.6	1.6	0.0	0.0	1.7	1.12	1.11	NM	NM
Octagon CLO III	2018	25.0	8.8	16.3	0.6	8.1	0.99	1.11	NM	NM
Cross Ocean ESS III	2019	18.0	6.2	11.8	0.0	6.1	0.99	0.97	NM	NM
<b>Total</b>		<b>214.6</b>	<b>216.6</b>	<b>89.7</b>	<b>182.9</b>	<b>60.8</b>	<b>1.13</b>	<b>1.29</b>	<b>4.0</b>	<b>9.4</b>

#### By Vintage

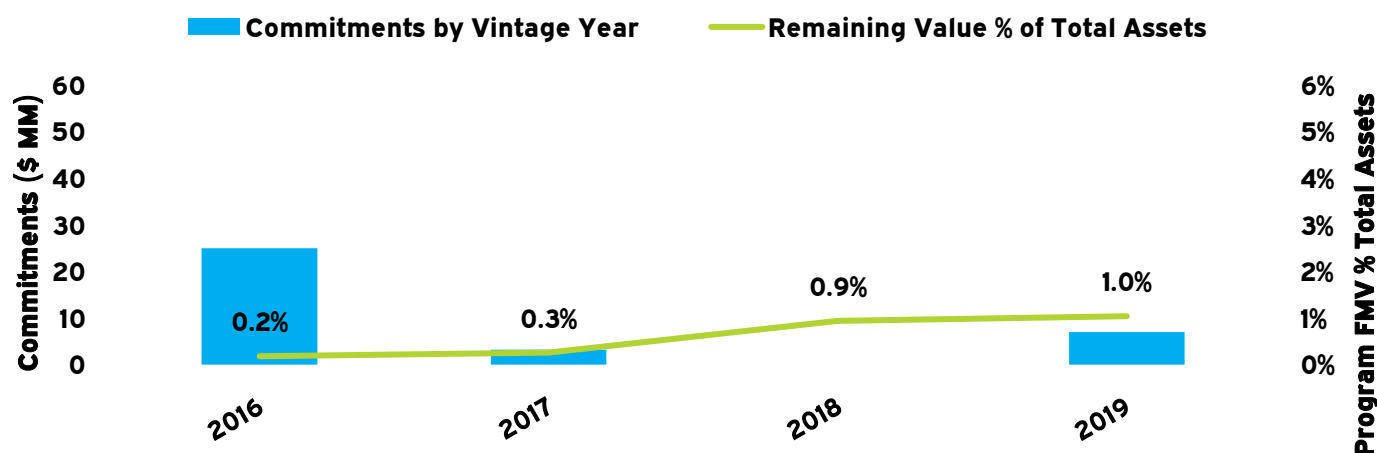


#### By Geographic Focus



### Introduction

As of December 31, 2019, the System had committed \$35.2 million to four real assets funds. The total reported fair value of real assets investments was \$23.1 million at December 31, 2019, which equates to 1.0% of the overall Retirement System, versus a 3.0% policy target.



### Program Status

No. of Investments	4
Committed (\$ MM)	35.2
Contributed (\$ MM)	23.5
Distributed (\$ MM)	3.2
Remaining Value (\$ MM)	23.1

### Performance Since Inception

	Program	Benchmark
DPI	0.14x	0.25x
TVPI	1.12x	1.17x
IRR	6.8%	7.5%



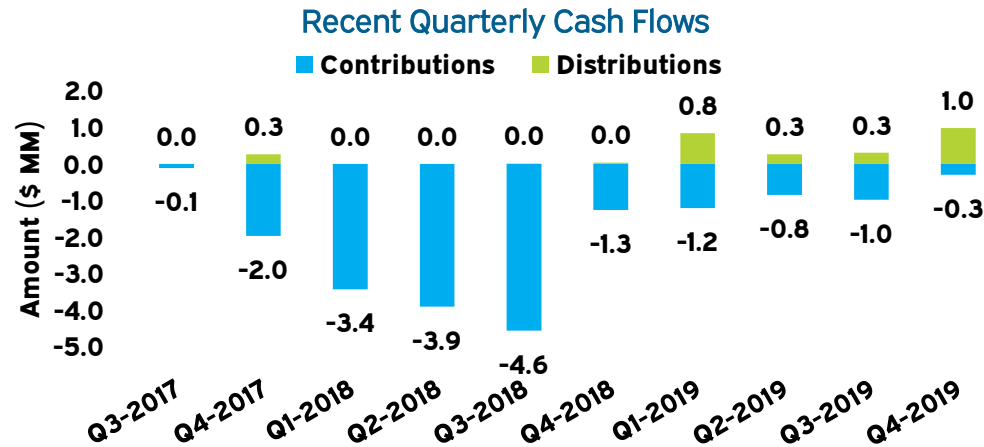
### Commitments

#### Commitments This Quarter

Fund	Strategy	Region	Amount (MM)
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None to report.

### Cash Flows



#### Largest Contributions This Quarter

Fund	Vintage	Region	Amount (\$MM)
Lime Rock VIII	2017	North America	0.16
Kimmeridge Energy V	2019	North America	0.16
GIP III	2016	Global: Developed	0.02

#### Largest Distributions This Quarter

Fund	Vintage	Region	Amount (\$MM)
GIP III	2016	Global: Developed	0.98

#### By Vintage

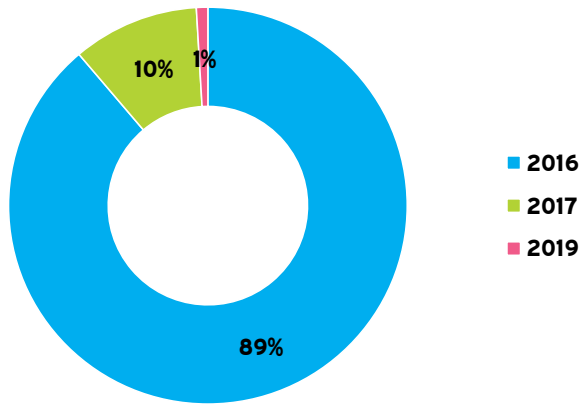
Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
2016	1	25.0	20.9	4.6	3.2	20.5	25.1	0.15	1.14	7.2
2017	1	3.2	2.2	1.0	0.0	2.4	3.4	0.00	1.07	NM
2019	2	7.0	0.4	6.6	0.0	0.2	6.8	0.00	0.57	NM
<b>Total</b>	<b>4</b>	<b>35.2</b>	<b>23.5</b>	<b>12.2</b>	<b>3.2</b>	<b>23.1</b>	<b>35.3</b>	<b>0.14</b>	<b>1.12</b>	<b>6.8</b>

#### Fund Performance: Sorted By Vintage And Strategy

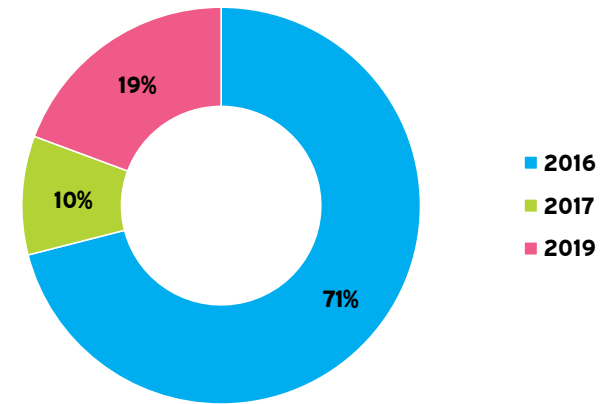
By Investment	Vintage	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
GIP III	2016	25.0	20.9	4.6	3.2	20.5	1.14	1.11	7.2	5.9
Lime Rock VIII	2017	3.2	2.2	1.0	0.0	2.4	1.07	1.10	NM	NM
Kimmeridge Energy V	2019	3.8	0.3	3.5	0.0	0.2	0.68	0.99	NM	NM
GIP IV	2019	3.2	0.1	3.1	0.0	NM	NM	NM	NM	NM
<b>Total</b>		<b>35.2</b>	<b>23.5</b>	<b>12.2</b>	<b>3.2</b>	<b>23.1</b>	<b>1.12</b>	<b>1.17</b>	<b>6.8</b>	<b>7.5</b>

#### By Vintage

Percent of FMV

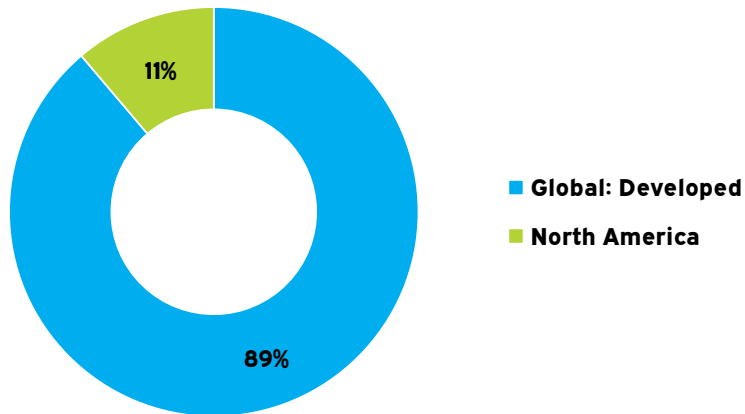


Percent of Exposure

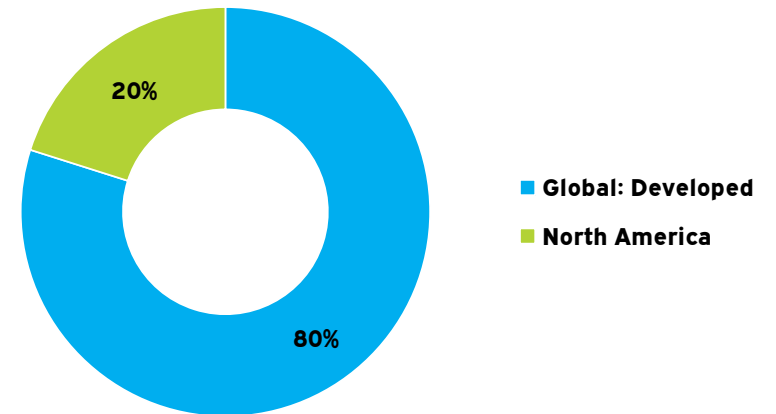


#### By Geographic Focus

Percent of FMV

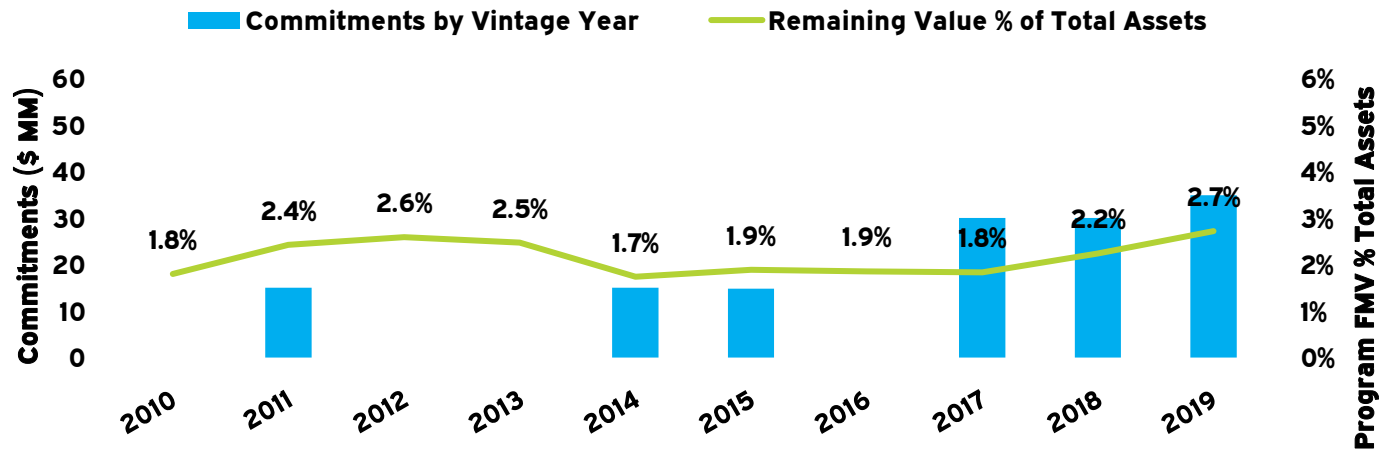


Percent of Exposure



### Introduction

As of December 31, 2019, the Retirement System had committed a total of \$207.2 million to 14 closed-end real estate funds. The Real Estate Program's reported fair value of real estate investments was \$60.3 million at December 31, 2019, which equates to 2.7% of the overall Retirement System, versus a 3.0% policy target.



### Program Status

No. of Investments	14
Committed (\$ MM)	207.2
Contributed (\$ MM)	160.0
Distributed (\$ MM)	143.8
Remaining Value (\$ MM)	60.3

### Performance Since Inception

	Program	Benchmark
DPI	0.90x	0.83x
TVPI	1.28x	1.22x
IRR	6.1%	4.6%

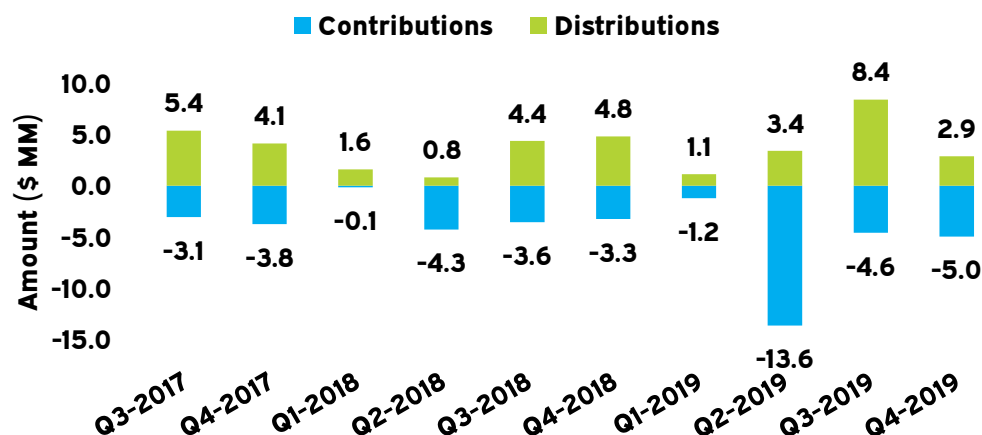
### Commitments

#### Commitments This Quarter

Fund	Region	Amount (MM)
Exeter V	North America	5.50
Rockpoint VI	North America	6.50

### Cash Flows

#### Recent Quarterly Cash Flows



#### Largest Contributions This Quarter

Fund	Vintage	Region	Amount (\$MM)
Torchlight VI	2017	North America	4.50
DRA VIII	2014	North America	0.33
DRA IX	2017	North America	0.10

#### Largest Distributions This Quarter

Fund	Vintage	Region	Amount (\$MM)
DRA VIII	2014	North America	1.23
DRA IX	2017	North America	0.63
EPISO 4	2015	Western Europe	0.59

#### By Vintage

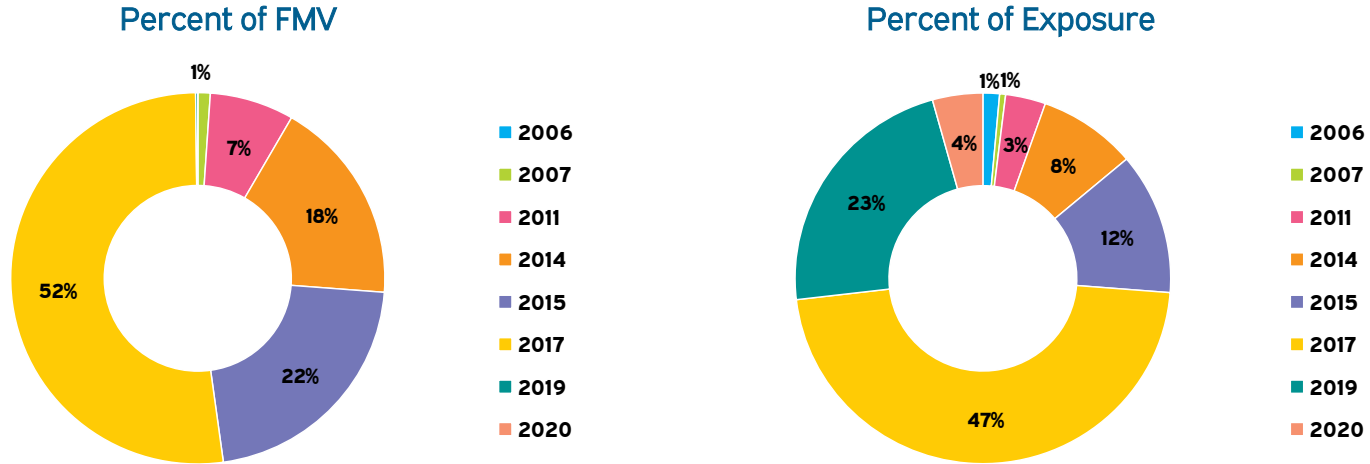
Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
2005	1	20.0	30.5	0.0	40.3	0.0	0.0	1.32	1.32	5.3
2006	1	20.0	18.2	1.8	8.8	0.0	1.8	0.48	0.48	-10.9
2007	2	27.6	28.4	0.0	40.7	0.6	0.6	1.43	1.46	8.9
2011	1	15.0	16.3	0.0	30.8	4.4	4.4	1.89	2.16	21.2
2014	1	15.0	18.2	0.0	13.1	10.8	10.8	0.72	1.31	11.0
2015	1	14.8	12.0	2.8	1.6	13.0	15.8	0.13	1.22	10.5
2017	3	60.0	36.0	28.2	8.5	31.4	59.6	0.24	1.11	13.2
2019	3	29.4	0.3	29.0	0.0	0.1	29.1	0.00	0.32	NM
2020	1	5.5	0.0	5.5	0.0	0.0	5.5	0.00	NM	NM
<b>Total</b>	<b>14</b>	<b>207.2</b>	<b>160.0</b>	<b>67.4</b>	<b>143.8</b>	<b>60.3</b>	<b>127.7</b>	<b>0.90</b>	<b>1.28</b>	<b>6.1</b>

### Fund Performance: Sorted By Vintage And Strategy

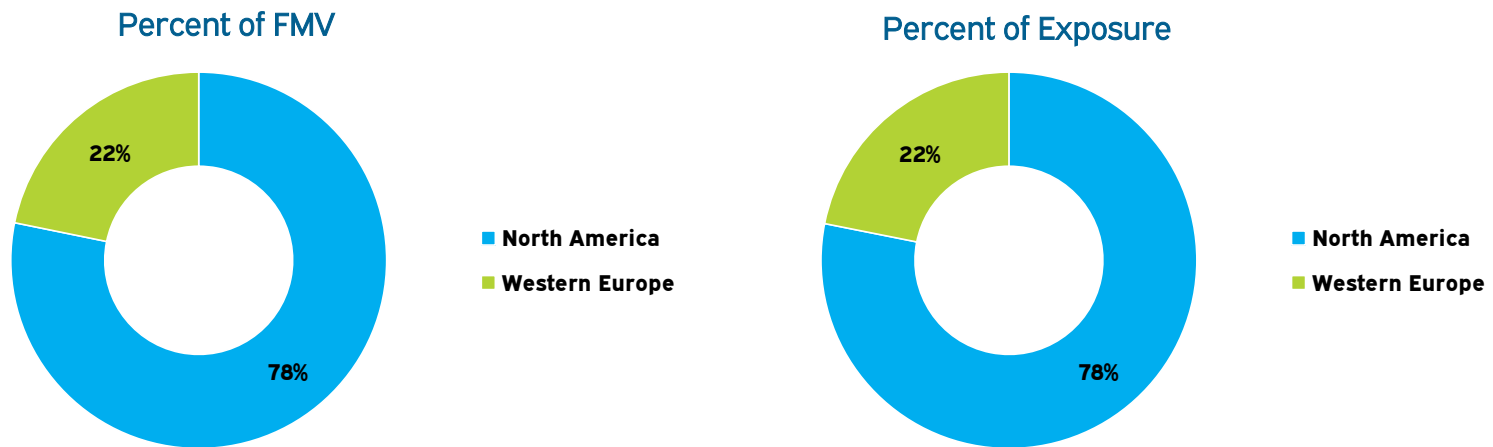
By Investment	Vintage	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
DRA V	2005	20.0	30.5	0.0	40.3	0.0	1.32	1.02	5.3	0.5
GEAM Value Add	2006	20.0	18.2	1.8	8.8	0.0	0.48	1.03	-10.9	0.4
DRA VI	2007	9.7	10.6	0.0	17.0	0.6	1.67	1.19	10.7	3.3
Fidelity RE III	2007	17.9	17.9	0.0	23.7	0.0	1.33	1.19	7.3	3.3
DRA VII	2011	15.0	16.3	0.0	30.8	4.4	2.16	1.56	21.2	15.6
DRA VIII	2014	15.0	18.2	0.0	13.1	10.8	1.31	1.38	11.0	11.9
EPISO 4	2015	14.8	12.0	2.8	1.6	13.0	1.22	1.37	10.5	12.9
GEM VI	2017	10.0	2.5	7.6	0.6	1.8	0.99	1.13	-1.3	11.6
DRA IX	2017	20.0	19.3	2.6	4.9	17.7	1.17	1.13	14.2	11.6
Torchlight VI	2017	30.0	14.3	18.1	3.0	11.8	1.04	1.13	NM	NM
Rockpoint VI	2019	6.5	0.0	6.5	0.0	0.0	NM	NM	NM	NM
DRA X	2019	10.0	0.0	10.0	0.0	0.0	NM	NM	NM	NM
EPISO 5	2019	12.9	0.3	12.5	0.0	0.1	0.32	0.83	NM	NM
Exeter V	2020	5.5	0.0	5.5	0.0	0.0	NM	NM	NM	NM
<b>Total</b>		<b>207.2</b>	<b>160.0</b>	<b>67.4</b>	<b>143.8</b>	<b>60.3</b>	<b>1.28</b>	<b>1.22</b>	<b>6.1</b>	<b>4.6</b>



#### By Vintage



#### By Geographic Focus

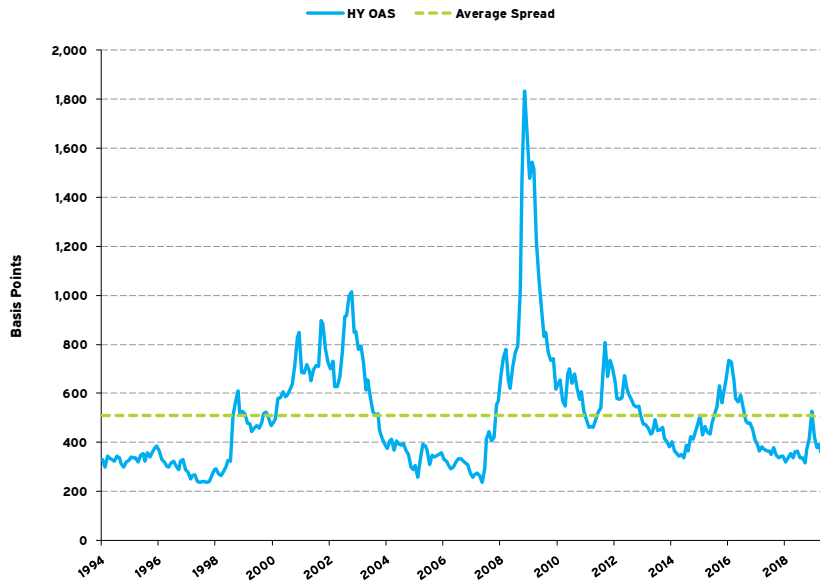


### Private Debt

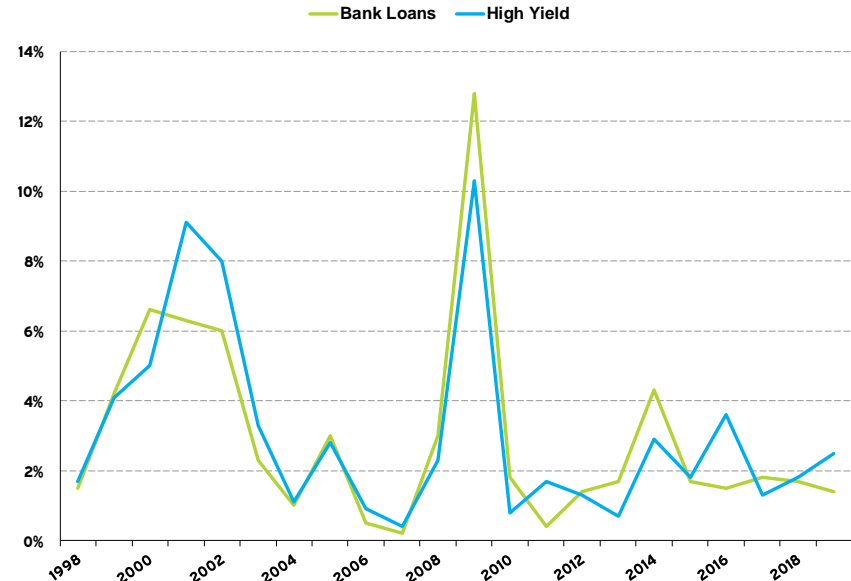
The fourth quarter was a continuation of strong credit markets performance from the first three quarters of the year. While both bank loans and high yield had very strong absolute returns, cracks began to show in the pricing of lower rated debt. Default rates and distressed ratios remained low, but distressed market activity appeared poised to increase as traditional credit investors became more wary of refinancing companies perceived to have more credit risk.

High yield spreads and the bank loan yields continued to fall in the fourth quarter leading to lower forward expected returns in public markets. New issuance yields in the private lending market remained stable though resulting in a larger premium for illiquid credit.

**U.S. Corporate High Yield Spread<sup>1</sup>**



**U.S. Corporate Default Rate<sup>2</sup>**



<sup>1</sup> Source: Barclays Capital

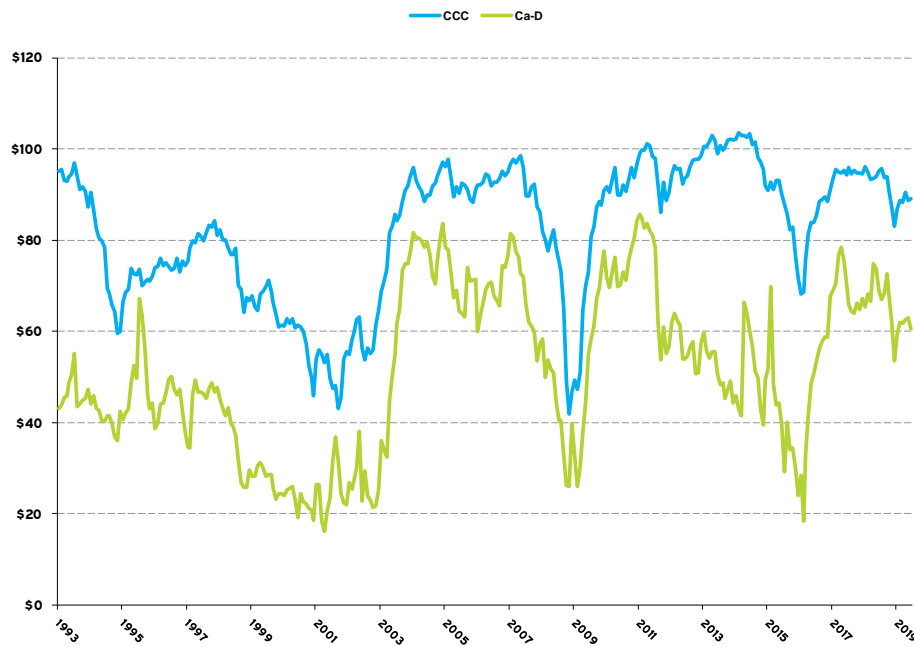
<sup>2</sup> Source: JP Morgan

### Distressed & Opportunistic Debt

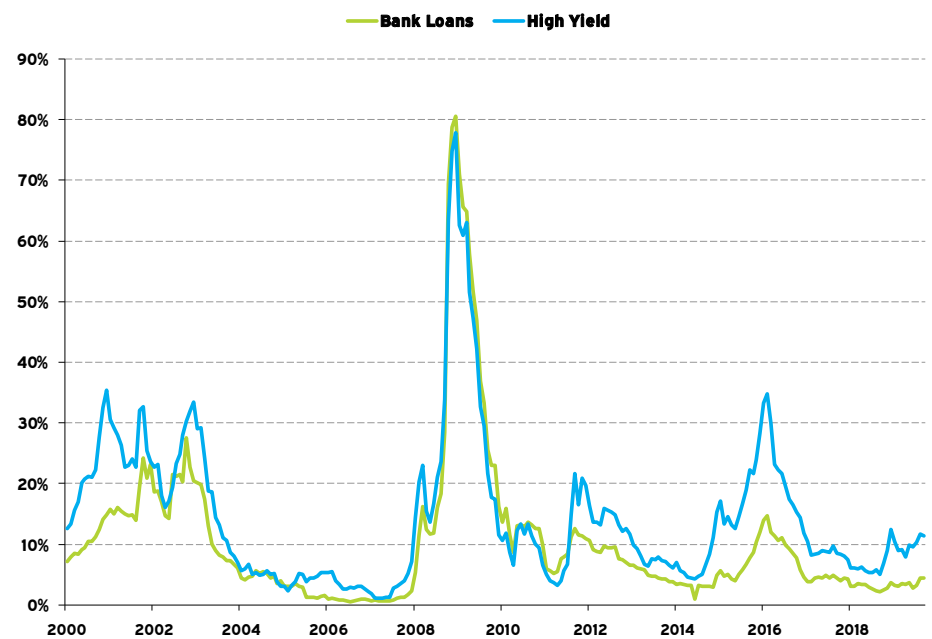
On the surface, the distressed opportunity appeared to be limited as the result of a low default environment. However, evaluating the distressed opportunity by looking at the overall market pricing and performance would not accurately show the opportunity set. In 2019, higher quality debt rallied but lower quality debt struggled to keep up and even exhibited negative performance. This bifurcation was seen in the increased distressed ratio with the backdrop of a market rally.

Recovery values for high yield and bank loans each fell approximately 15% from 2018 levels signaling that patience will be crucial for distressed investors that are targeting restructurings. The average recovery for first lien bank debt fell to 48%, which equaled historical annual lows. Also distressed exchanges increased markedly in 2019 from 2018 levels.

Lower Rated Debt Pricing<sup>1</sup>



Distressed Ratio<sup>2</sup>



<sup>1</sup> Source: Barclays Capital

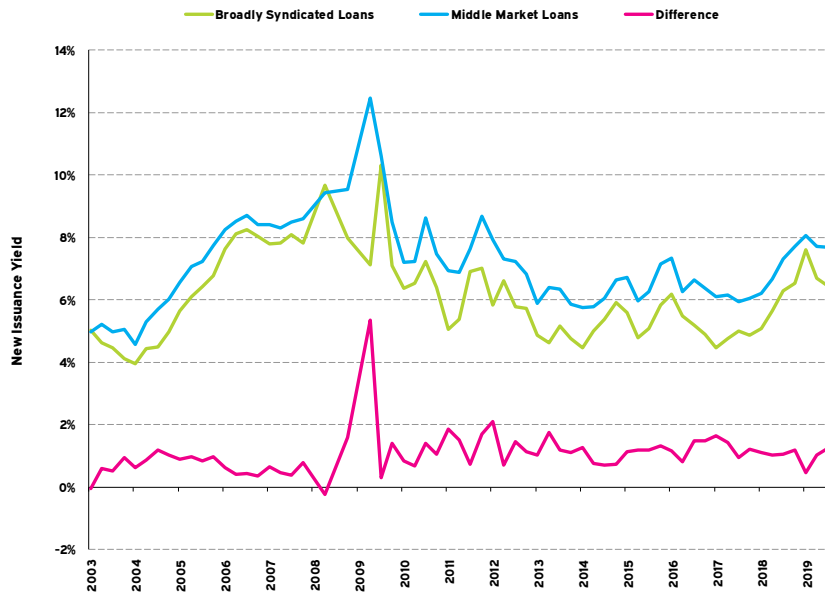
<sup>2</sup> Source: Bank Loans trading below \$80, Credit Suisse; High Yield trading at spread of more than 1,000bps, Deutsche Bank.

### Private Senior & Subordinated Debt

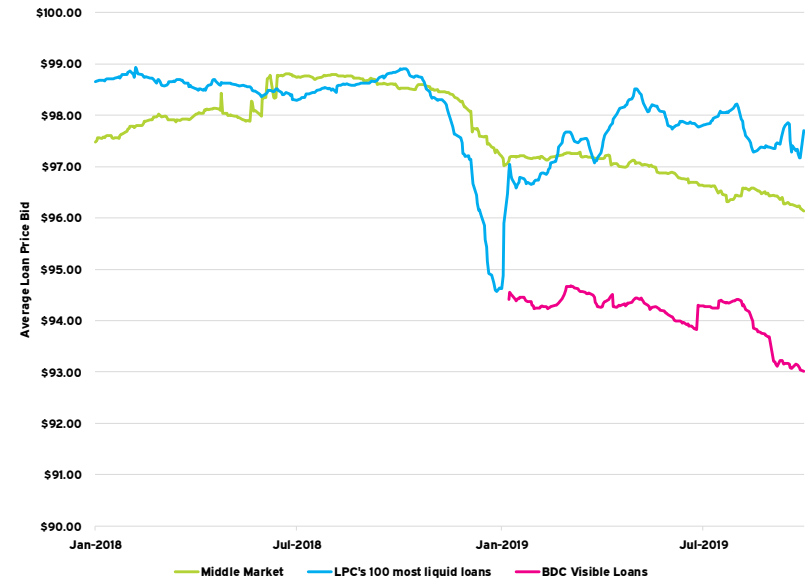
The spread between new issuance yields for direct lending loans and larger liquid loan yields widened during the quarter as liquid market yields compressed and the middle market remained stable. Secondary pricing in the middle market, as evidenced by the LPC middle market and BDC visible yields also declined further pushing up all-in yields. The distressed component of BDC loans steadily increased in 2019 and finished the year just over 10%

Privately issued subordinated debt volumes, measured by second lien and mezzanine activity, were down in the fourth quarter and for the full year in 2019. Unitranche debt continues to be the financing type of choice for private non-bank lending. New issue pricing for unitranche has come down from 2012-2016 levels but remained stable in 2019.

**Senior Loan New Issue Yields<sup>1</sup>**



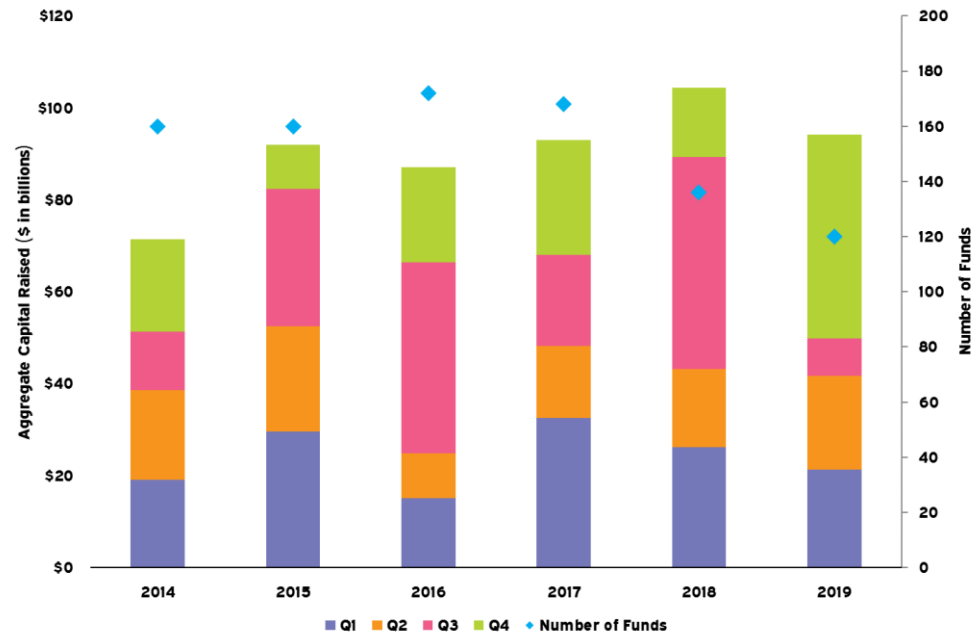
**Senior Loan Secondary Market Pricing<sup>2</sup>**



<sup>1</sup> Source: Refinitiv LPC

<sup>2</sup> Source: Refinitiv LPC

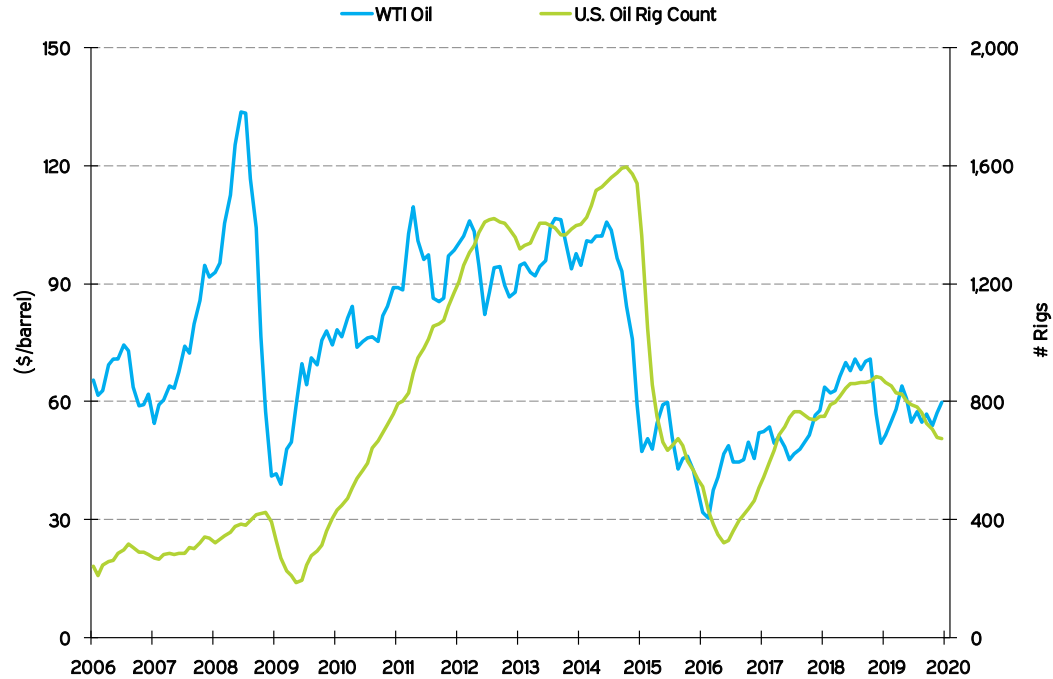
**Global Quarterly Unlisted Natural Resource Fundraising<sup>1</sup>**



Capital raised during the fourth quarter of 2019 was substantially greater than prior quarters, representing an increase of approximately 130% relative to the total amount raised during the fourth quarter of 2018. There was also a significant increase in the number of vehicles raised during the quarter with 41 funds reaching final close. The average size of vehicles raised during the quarter was \$1.1 billion, exceeding the 2019 quarterly average of \$800 million. As of December 31, 2019, Preqin reported a total of 277 unlisted natural resources funds with a combined fundraising target of approximately \$139 billion. The majority of natural resources managers fundraising during the fourth quarter were focused on North America, accounting for approximately 45% of cumulative targeted capitalization in the market.

<sup>1</sup> Source: Preqin Private Capital Fundraising Update, Q4 2019.

**Extracted Resources**  
**Oil Price vs. Active U.S. Rigs**

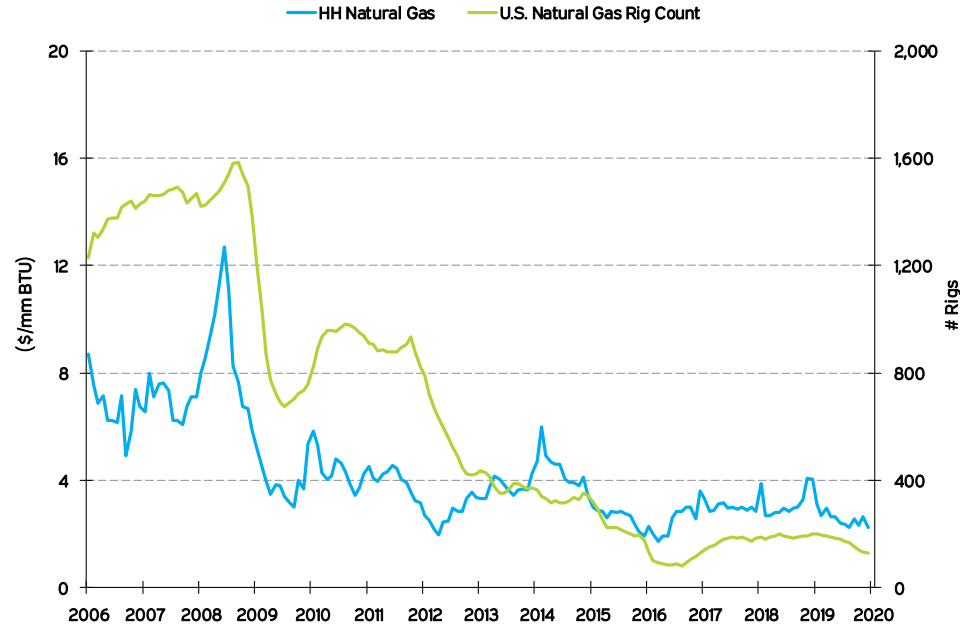


China and the U.S. agree, in principal, for the framework of a trade pact raising the prospect of increased global activity by the two largest economies. Further, the U.S. launches airstrikes in Iraq that kills an Iranian General. West Texas Intermediate (“WTI”) and Brent oil prices increased by 5% to \$60 and 7% to \$67 per barrel, respectively, during the fourth quarter. During the fourth quarter, the U.S. produced over 12.2 million barrels of oil equivalent per day. The U.S. oil rig count fell by 53 over the quarter, bringing total rigs to 673. U.S. gasoline prices for regular blend decreased by 2% to \$2.74 during the fourth quarter, representing a 6% increase from one year prior.

<sup>1</sup> Source: EIA and Baker Hughes.

### Extracted Resources

#### Natural Gas Price vs. Active U.S. Rigs <sup>1</sup>



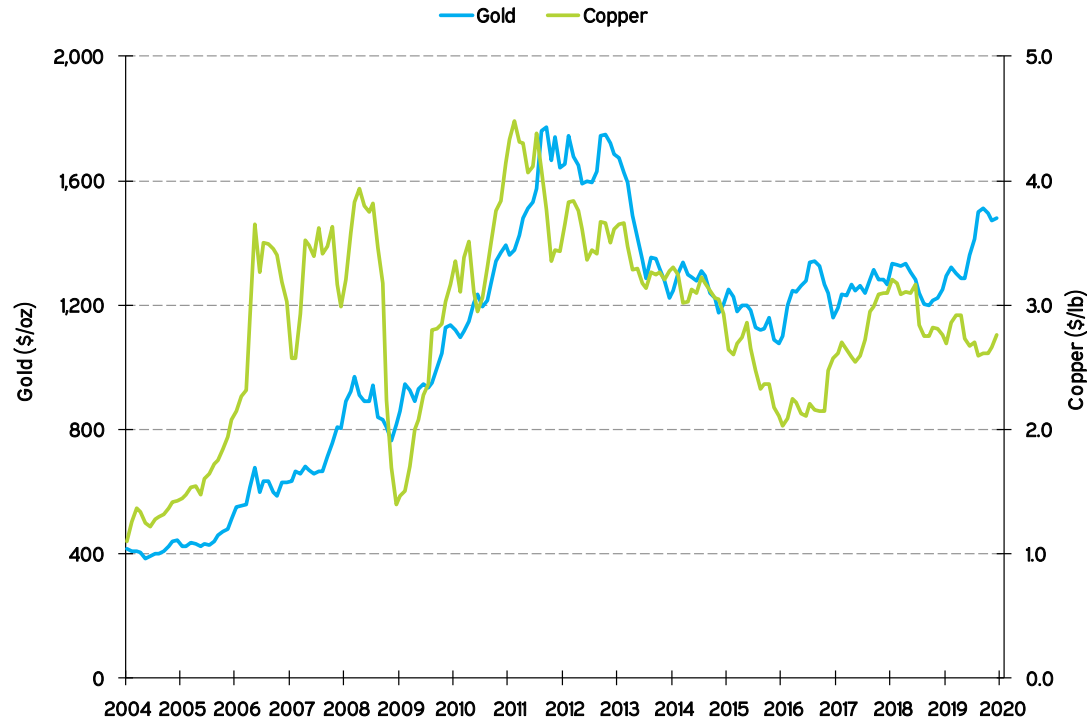
Henry Hub natural gas spot prices ended the quarter at approximately \$2.22/MM BTU, representing a 13% decrease relative to the prior quarter. A meaningful basis differential continues to exist between Henry Hub, the primary U.S. benchmark, and other natural gas markets. Continued build out of midstream infrastructure is expected to narrow the spread over time. Despite a reduction in rig count of 27 to 128 over the quarter, U.S. natural gas production continued to grow with daily production reaching more than 103 billion cubic feet from operational improvements and increasing associated gas production from oil wells.

During the quarter, UPS announced plans to purchase 6,000 natural gas trucks in two years. Additionally, India announced \$60 billion of gas infrastructure investment to include pipelines and LNG import terminals.

<sup>1</sup> Source: EIA and Baker Hughes.

**Extracted Resources**

**Metals Prices**

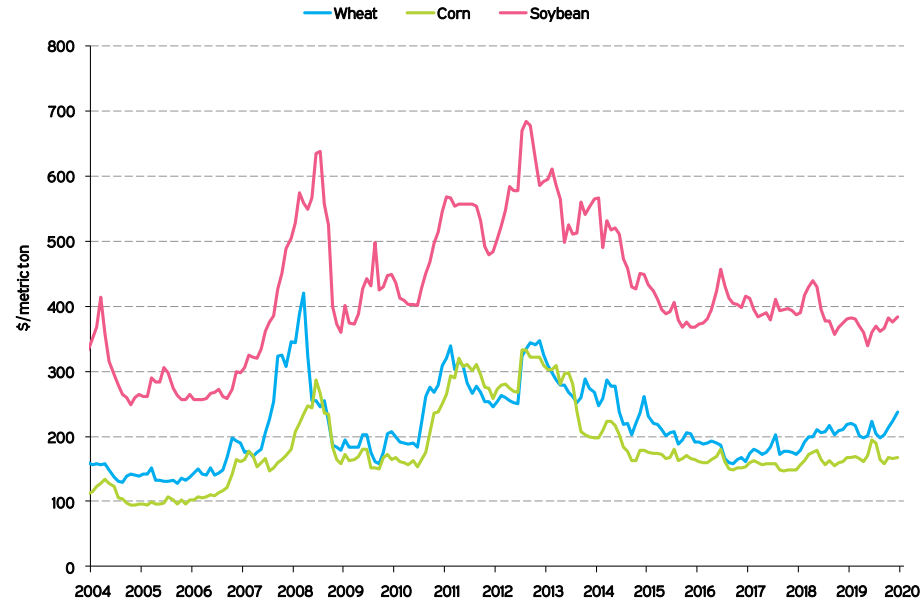


Significant geopolitical volatility extended through the fourth quarter in connection with ongoing global trade wars, prospects of a trade war truce, declining bond yields, and economic uncertainty impacted global demand for certain base, industrial, and other metals. Copper prices increased by 6% to \$2.76 per ounce while gold prices fell by 2% to \$1,479 per ounce during the fourth quarter. Relative to one year prior, copper prices have remained unchanged while gold prices experienced an increase of 18%.

<sup>1</sup> Source: World Bank



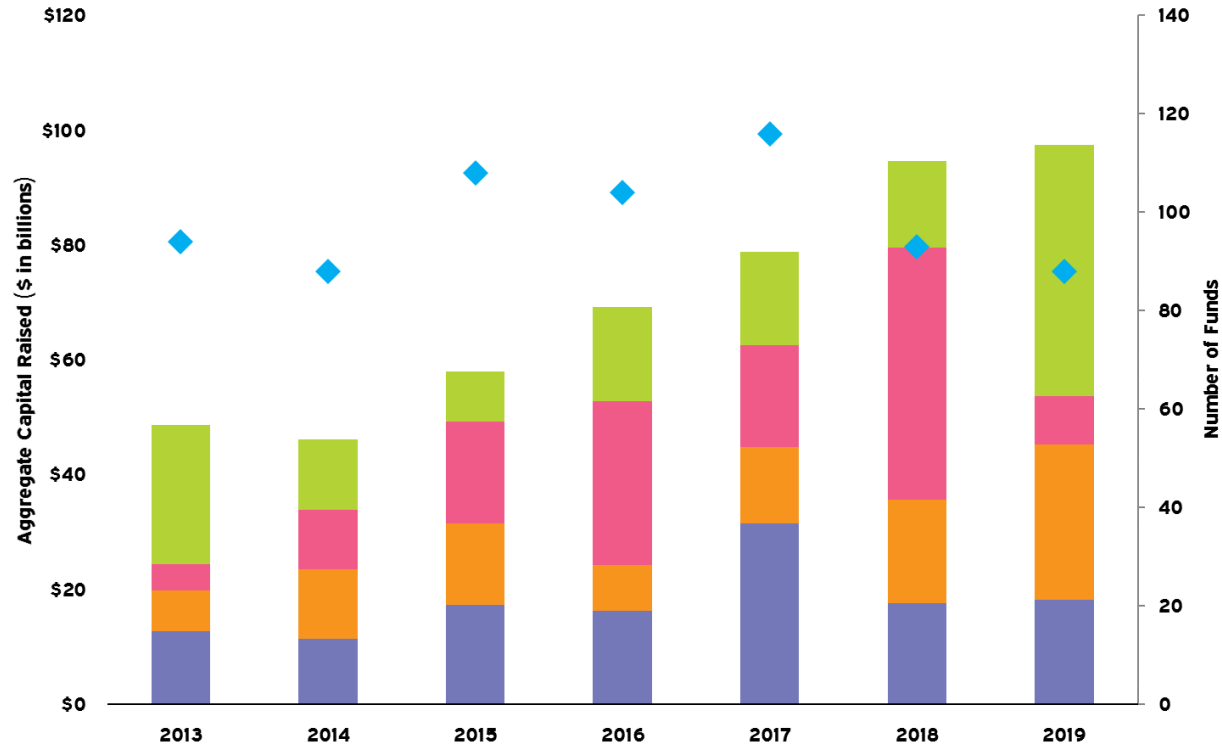
### Harvested Resources Wheat, Corn, & Soybean



While ongoing global trade disputes have been a primary source of volatility within U.S. agricultural markets, progress has been made which may increase product demand. A potential trade agreement between the U.S. and China may lead to \$50 billion of agriculture exports from the U.S. over time. Further, the U.S. also reached a trade agreement with Japan which lowers or eliminates tariffs on U.S. agricultural products. Weather had a material impact to global food production: excessive rainfall across the U.S. Midwest and Southeast regions led to reduced or delayed crop plantings; additionally, massive wildfires across Australia disrupted food supply chains across the region. During the quarter, wheat and corn prices increased by 18% and 6%, respectively, while soybean prices increased by 5%. During the fourth quarter, the NCREIF Farmland index experienced a 2.3% increase primarily driven by income gains of 2.2%. The NCREIF Timberland index remained unchanged over the quarter as income gains of 0.6% were offset by depreciation.

<sup>1</sup> Source: World Bank

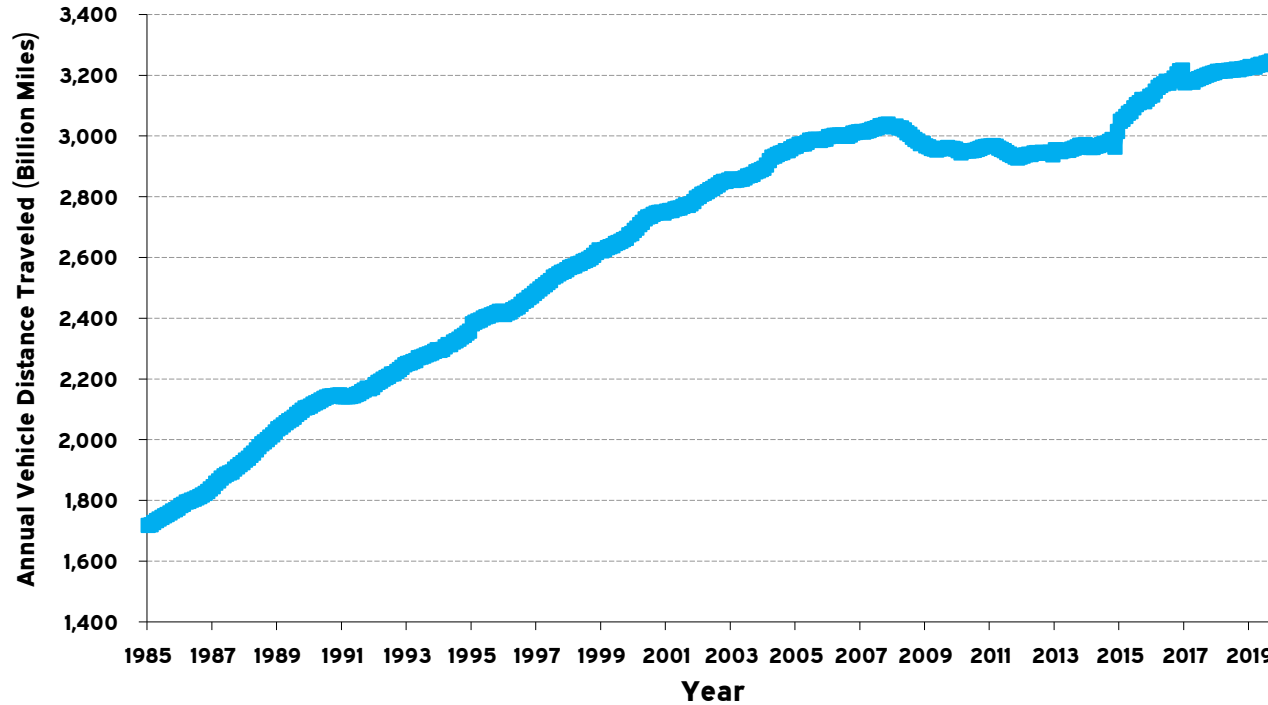
**Global Quarterly Unlisted Infrastructure Fundraising<sup>1</sup>**



Capital raised in the fourth quarter of 2019 was the largest quarter fundraise since third quarter 2018 and brought the 2019 total to nearly \$100 billion. In the fourth quarter, the average fund size was over \$2.5 billion above the 2019 average of \$1.0 billion. As of December 31, 2019, a total of 253 unlisted infrastructure funds were in market, according to Preqin, with a combined fundraising target of approximately \$200 billion.

<sup>1</sup> Source: Preqin 2020 Global Infrastructure Report.

**Moving 12-month Total on All U.S. Roads<sup>1</sup>**

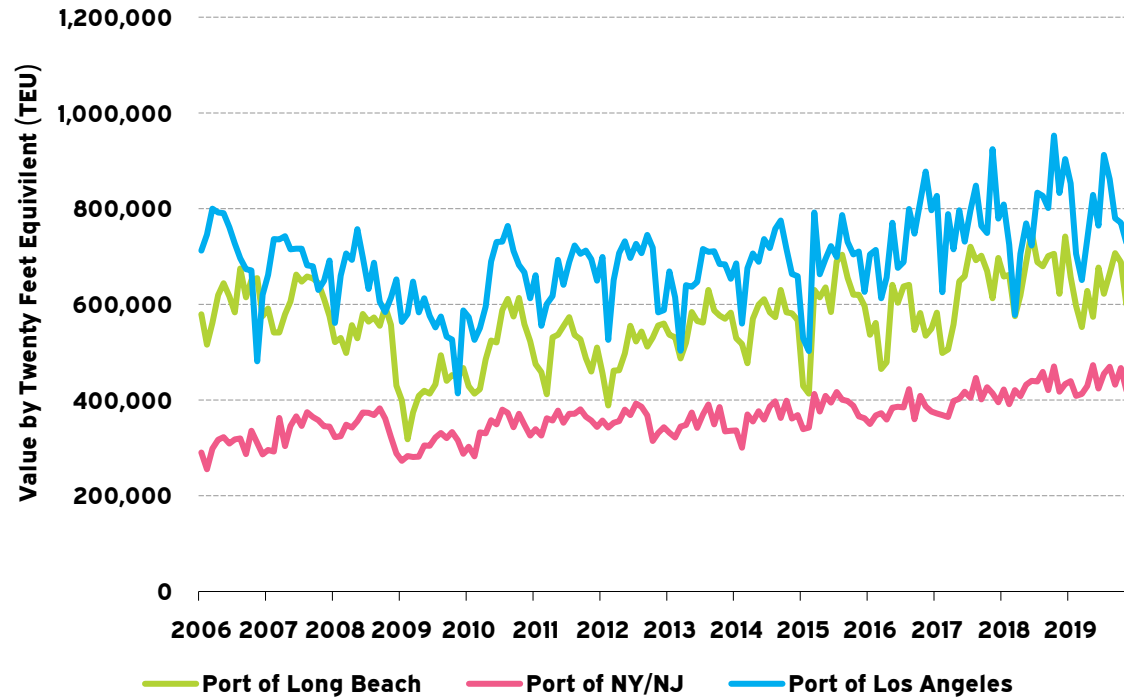


Through November 2018, the fourth quarter was on pace for travel on U.S. roads totaling approximately 820 billion miles. This represented an increase of 1.1% over the same period in 2019.

Up to this point in 2019, the average U.S. price of a gallon of gas went up to a monthly average of \$2.69 per gallon, with a peak of \$2.95. This compared to \$2.82 and \$2.99 seen in 2018. According to INRIX, Boston, Washington, D.C., and Chicago rank as the top three cities in the U.S. in which drivers spend the most hours in traffic.

<sup>1</sup> Source: U.S. Department of Transportation, Federal Highway Administration: Office of Highway Policy Information.

**U.S. Port Activity – Container Trade in TEUs<sup>1</sup>**

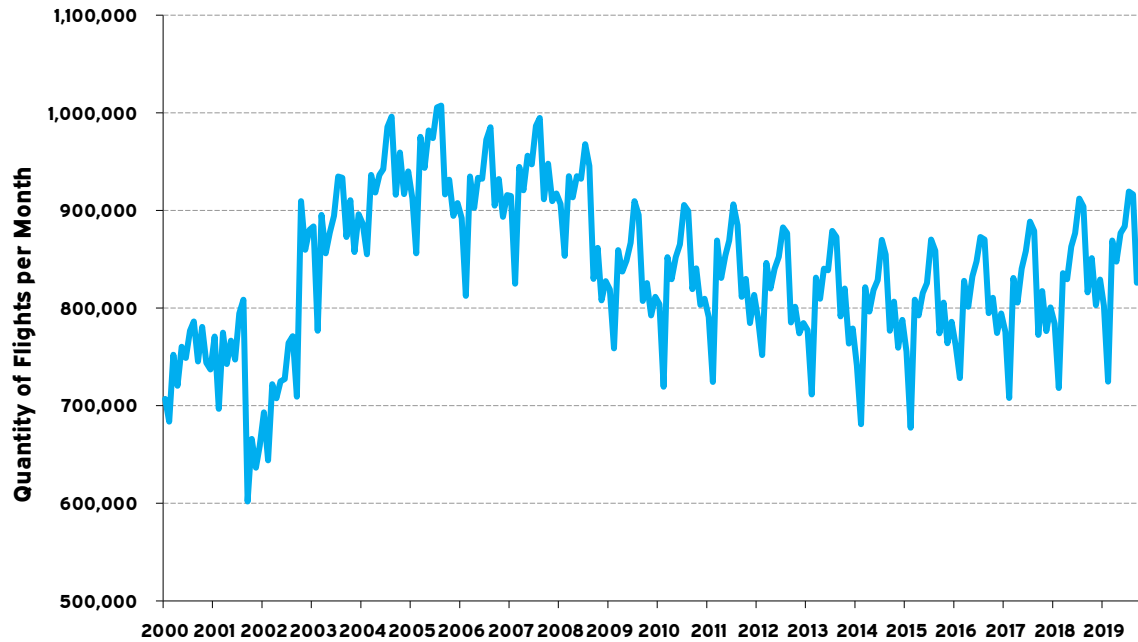


The chart represents the top three U.S. ports by container volume, as measured by twenty-foot equivalent units (TEU). Activity at the three ports provides a high-level representation of the volume of imports received into the U.S. more broadly.

During the fourth quarter of 2019, volumes at the three ports decreased by 591,412 units relative to the same period in 2018. On a year-over-year basis, the combined port volumes decreased by 501,578 TEU, or 2.2%, over the prior 12 month period. The Port of Long Beach recorded a decrease of 5.7% (458,992 TEU), the Port of NY/NJ reported an increase of 1.5% (78,525 TEU) and the Port of Los Angeles recorded a decrease of 1.3% (121,111 TEU) from the prior 12 months.

<sup>1</sup> Source: [www.polb.com](http://www.polb.com), [www.panynj.gov](http://www.panynj.gov), and [www.portoflosangeles.org](http://www.portoflosangeles.org)

**Total U.S. Domestic and International Flights<sup>1</sup>**

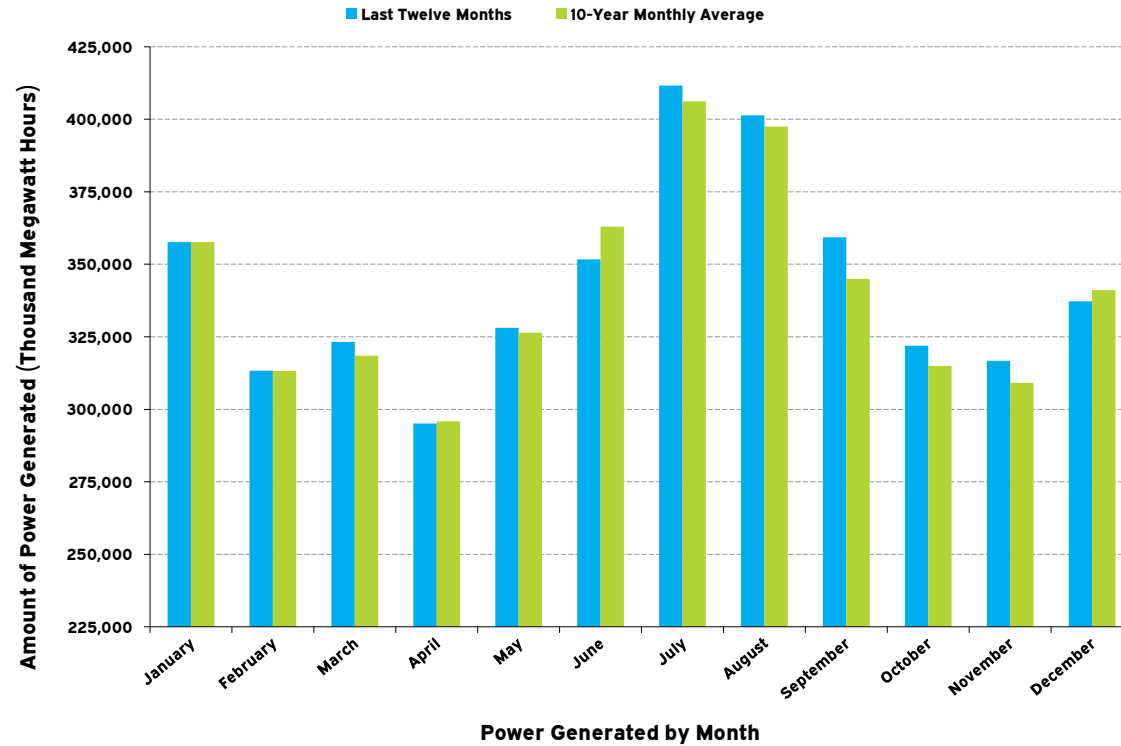


The chart above represents all U.S. domestic and international flights, excluding foreign point-to-point flights by month. Air traffic is cyclical with peaks in the summer months and declines in the winter months.

There were nearly 50,000 more flights during the fourth quarter of 2019, representing a 2.0% increase compared to the same period in 2018. Air traffic activity also increased by 1.8% for the 12 months ending December 31, 2019 over the previous period. In addition to the number of flights during the fourth quarter increasing year-over-year, the total number of passengers travelling on U.S. and international airlines increased by 3.9% from 2018 to 2019, which indicates higher capacity factors among airlines compared to the prior period.

<sup>1</sup> Source: Bureau of Transportation Statistics: Flights, All U.S., and Foreign Carriers.

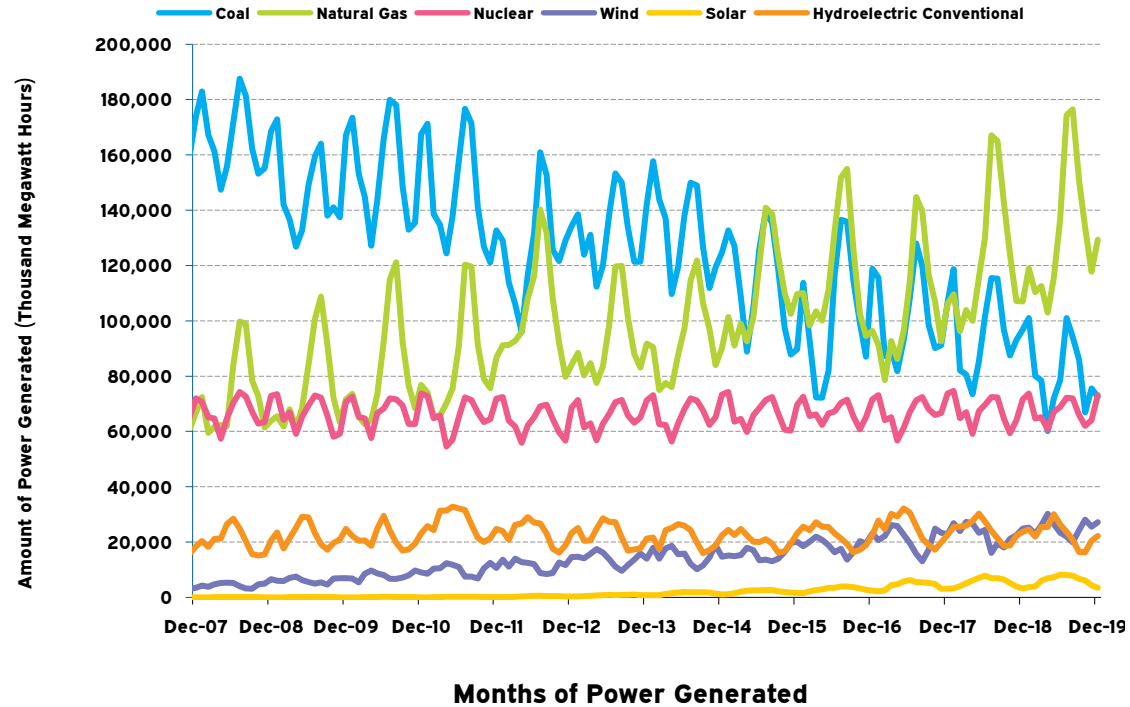
### Total U.S. Power Generation<sup>1</sup>



The graph above represents the total net generation for the past 12 months compared to the 10-year average for each month. Over the past year, power generation exceeded the 10-year average in 10 out of the 12 months. Net energy generation in the U.S. decreased by 1.0% during the fourth quarter, compared to the same period in 2018. For the 12 months ended December 31, 2019, net energy generation decreased by 1.4% over the previous 12 months.

<sup>1</sup> Source: U.S. Energy Information Administration: Electric Power Monthly, December 2019.

### U.S. Power Generation by Source<sup>1</sup>



When comparing individual generation sources in the U.S., natural gas, nuclear, wind, and solar increased 12.6%, 2.2%, 18.3%, and 13.2% respectively in the fourth quarter of 2019 as compared to the same period in the previous year. Generation from coal and hydroelectric conventional dropped by 22.5% and 8.8% respectively, during the same period. Wind and utility scale solar continue to make up a small portion of total net energy generation in the U.S., accounting for only 8.3% and 1.4% of energy generation in the fourth quarter, while coal, natural gas, and nuclear accounted for 22.0%, 39.0%, and 20.4%, respectively. However, the growth of wind and solar as sources of energy generation continues to increase at a faster rate than coal and natural gas, especially over the last couple of years.

<sup>1</sup> Source: U.S. Energy Information Administration: Electric Power Monthly, December 2019.

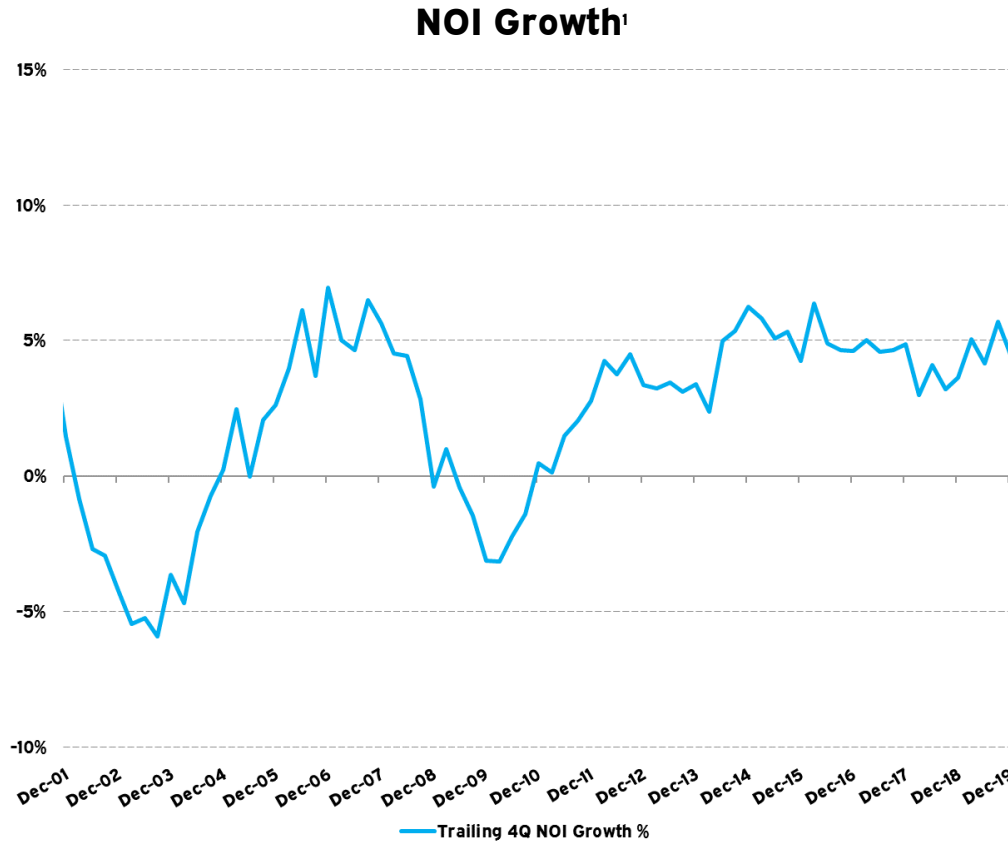
**Real Estate Fundamentals**  
**Vacancy by Property Type<sup>1</sup>**



In the fourth quarter of 2019, vacancy rates increased slightly for all property types except industrial. Multifamily vacancies have fluctuated around 6.0% since 2009. Retail vacancies have flattened over the last three years, while office vacancies continued on a downward trend. Industrial vacancies appear to have bottomed out just above 3.0%, at all-time lows for the sector. Compared to one year ago, vacancy rates in multifamily decreased 16 basis points, office decreased 58 basis points, industrial increased 11 basis points, and retail increased 19 basis points. Overall, the vacancy rate across all properties decreased 12 basis points from Q4 2018.

<sup>1</sup> Source: NCREIF

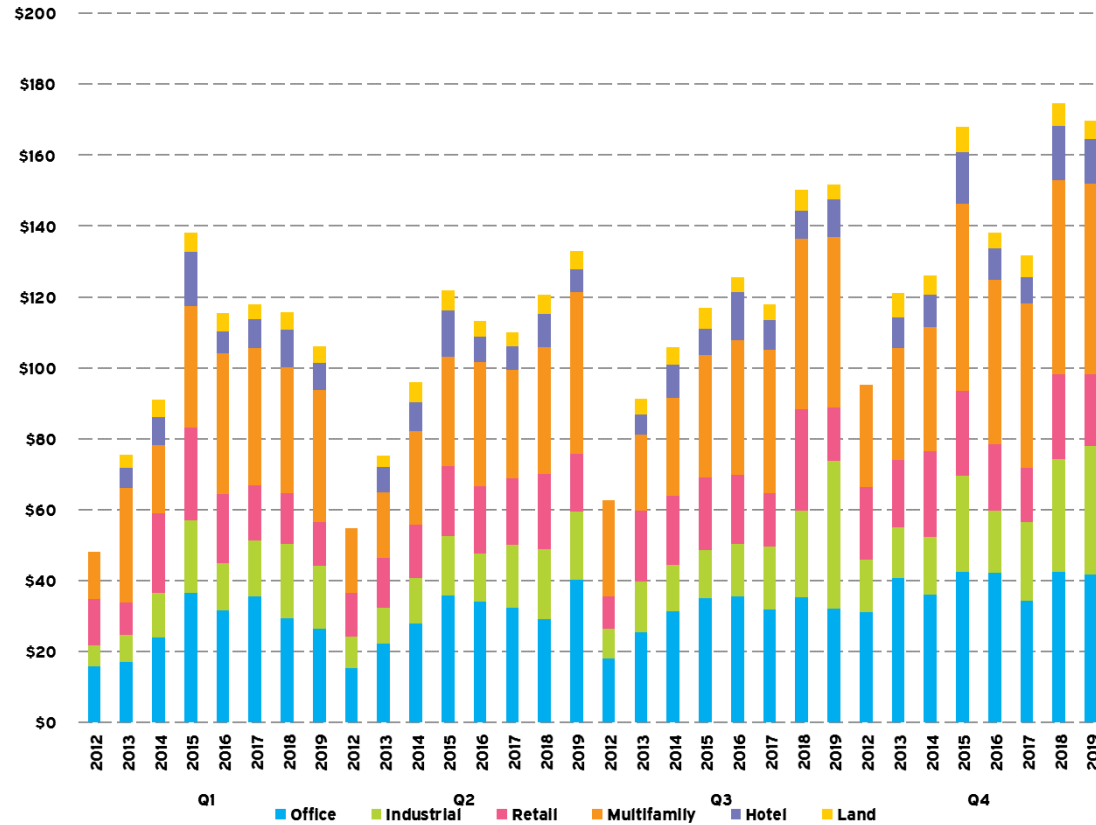




The trailing twelve-month rate of NOI decreased to 4.4% in the fourth quarter of 2019. Continued growth of the U.S. economy coupled with only moderate new construction has allowed property owners to increase rents and lease vacant space. The strongest NOI growth continues to be within the industrial sector, trending at 7.1% for the trailing year ending Q4 2019. Office NOI growth is trending at 6.1%, while apartment is trending at 5.4%. Retail NOI growth for 2019 was -0.8%.

<sup>1</sup> Source: NCREIF

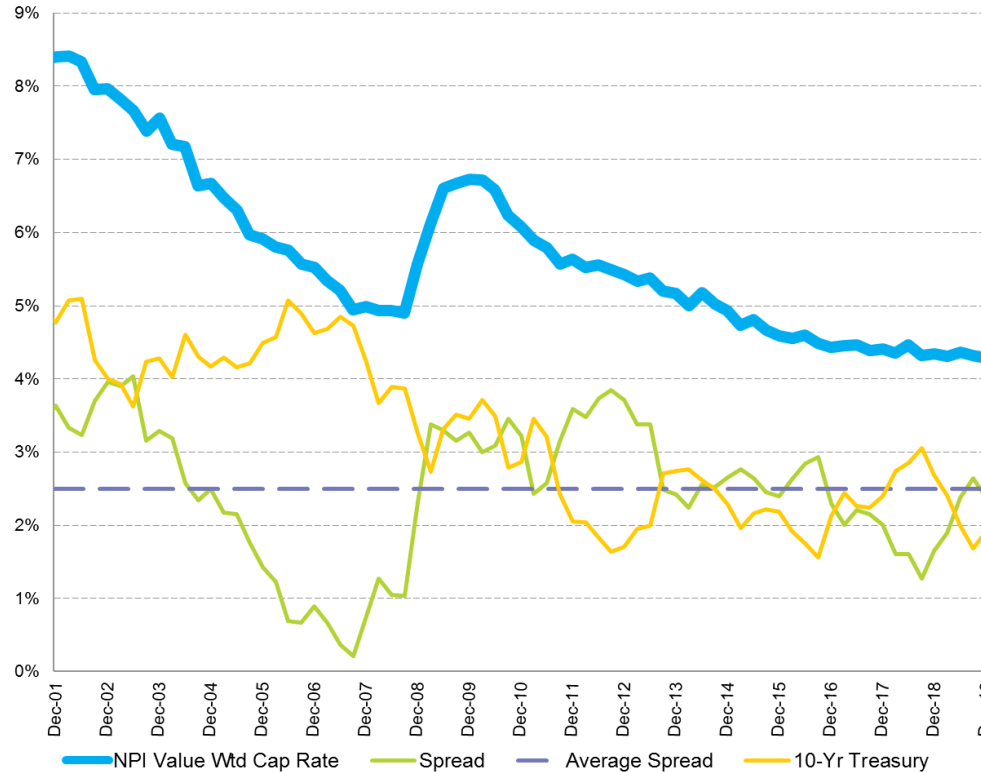
### Transaction Volume (\$bn)<sup>1</sup>



Private real estate transaction volume for properties valued over \$2.5 million was up for Q4 2019 to \$169 billion. Compared to a year ago, industrial (+14%) saw an increase to transaction volume, while hotel (-18%), retail (-16%), office (-2%), and multifamily (-2%) saw decreases. Multifamily and office properties made up the largest percentages of total transaction volume during the quarter, at 32% and 25%, respectively.

<sup>1</sup> Source: PREA

### Real Estate Capital Markets Cap Rates vs. 10-Year Treasury<sup>1</sup>



The NPI Value Weighted Cap Rate continued to hover around 4.3%. The 10-year Treasury yield peaked above 3.0% in Q3 2018 and had been on a downward trend until year end when the 10-year Treasury yield increased slightly to 1.9%. The spread between cap rates and treasury yields decreased to 237 basis points, which is 13 basis points below the long-term average spread.

<sup>1</sup> Source: NCREIF and U.S. Department of the Treasury

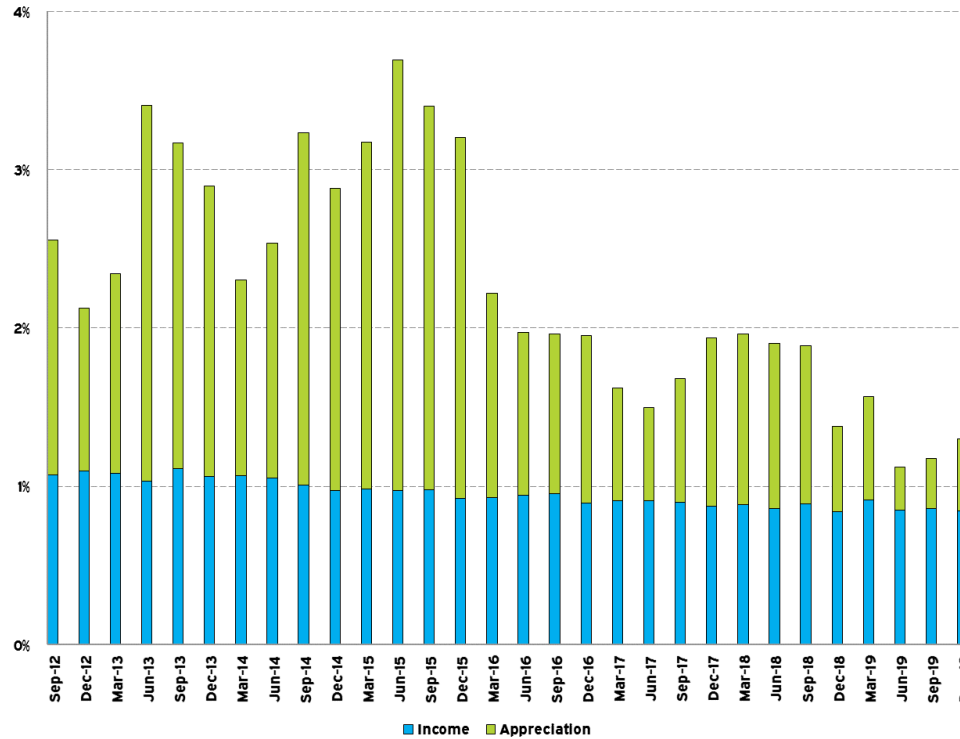
**Trailing Period Returns<sup>1</sup>**

<i>As of December 31, 2019</i>	1 Year	3 Years	5 Years	10 Years
NFI-ODCE (EW, net)	5.2%	6.5%	8.3%	10.5%
NFI-ODCE (VW, net)	4.4	6.1	8.0	10.4
NCREIF Property Index	6.4	6.7	8.3	10.2
NAREIT Equity REIT Index	28.7	10.2	8.4	12.6

Private real estate indices have continued to post positive returns, driven by strong property-level fundamentals and a low interest rate environment. Recent public real estate performance has been very strong but volatile, with a 28.7% return in 2019.

<sup>1</sup> Source: NCREIF

### ODCE Return Components<sup>1</sup> (Equal Weight, Net)



The NFI-ODCE Equal Weight return for Q4 2019 was up slightly from the previous two quarters to 1.3%, about 12 basis points higher than the previous quarter. The income component of the quarterly return continues to remain consistent around 0.9%. Appreciation has improved slightly from the previous two quarters, adding 46 basis points to the benchmark's Q4 2019 return.

<sup>1</sup> Source: NCREIF

Below are details on specific terminology and calculation methodologies used throughout this report:

<b>Committed</b>	The original commitment amount made to a given fund. Some funds may be denominated in non-USD currencies, and such commitment amounts represent the sum of fund contributions translated to USD at their daily conversion rates plus the unfunded balance translated at the rate as of the date of this report.
<b>Contributed</b>	The amount of capital called by a fund manager against the commitment amount. Contributions may be used for new or follow-on investments, fees, and expenses, as outlined in each fund's limited partnership agreement. Some capital distributions from funds may reduce contributed capital balances. Some funds may be denominated in non-USD currencies, and such aggregate contributions represent the sum of each fund contribution translated to USD at its daily conversion rate.
<b>Distributed</b>	The amount of capital returned from a fund manager for returns of invested capital, profits, interest, and other investment related income. Some distributions may be subject to re-investment, as outlined in each fund's limited partnership agreement. Some funds may be denominated in non-USD currencies, and such aggregate distributions represent the sum of each fund distribution translated to USD at its daily conversion rate.
<b>DPI</b>	Acronym for "Distributed-to-Paid-In", which is a performance measurement for Private Market investments. The performance calculation equals Distributed divided by Contributed. DPIs for funds and groupings of funds are net of all fund fees and expenses as reported to by fund managers to Meketa. Program-level DPIs are net of both fund fees and expenses and fees paid to Meketa attributable to the Program.
<b>Exposure</b>	Represents the sum of the investor's Unfunded and Remaining Value.
<b>IRR</b>	Acronym for "Internal Rate of Return", which is a performance measurement for Private Market investments. IRRs are calculated by Meketa based on daily cash flows and Remaining Values as of the date of this report. IRRs for funds and groupings of funds are net of all fund fees and expenses as reported to by fund managers to Meketa.
<b>NCV</b>	Acronym for "Net Change in Value", which is a performance measurement for Private Market investments. The performance calculation equals the appreciation or depreciation over a time period neutralized for the impact of cash flows that occurred during the time period.

### NM

Acronym for “Not Meaningful”, which indicates that a performance calculation is based on data over too short a timeframe to yet be meaningful or not yet possible due to inadequate data. Meketa begins reporting IRR calculations for investments once they have reached more than two years since first capital call. NM is also used within this report in uncommon cases where the manager has reported a negative Remaining Value for an investment.

### Peer Benchmark

The performance for a set of comparable private market funds. The peer benchmarks used in this report are provided by Thomson ONE, based on data from Cambridge Associates as of the date of this report. Program-level peer benchmark performance represents the pooled return for a set of funds of corresponding vintages and strategies across all regions globally. Fund-level peer benchmark performance represents the median return for a set of funds of the same vintage and the program’s set of corresponding strategies across all regions globally. Peer benchmarks that include less than five funds display performance as “NM”. Meketa utilizes the following Thomson ONE strategies for peer benchmarks:

Infrastructure: Infrastructure

Natural Resources: Private Equity Energy, Upstream Energy & Royalties, and Timber

Private Debt: Subordinated Capital, Credit Opportunities, and Control-Oriented Distressed

Private Equity: Venture Capital, Growth Equity, Buyout, Subordinated Capital, Credit Opportunities, and Control-Oriented Distressed

Real Assets (excluding Real Estate): Infrastructure, Private Equity Energy, Upstream Energy & Royalties, and Timber

Real Assets (including Real Estate): Infrastructure, Private Equity Energy, Upstream Energy & Royalties, Timber, and Real Estate

Real Estate: Real Estate

### Public Market Equivalent (“PME”)

A calculation methodology that seeks to compare the performance of a portfolio of private market investments with public market indices. The figures presented in this report are based on the PME+ framework, which represents a net IRR value based on the actual timing and size of the private market program’s daily cash flows and the daily appreciation or depreciation of an equivalent public market index. Meketa utilizes the following indices for private market program PME+ calculations:

Infrastructure: Dow Jones Brookfield Global Infrastructure Index

Natural Resources: S&P Global Natural Resources Index

Private Debt: Bloomberg Barclays Global High Yield Index

	<p>Legacy Private Equity &amp; Fund of One: MSCI ACWI Investable Market Index</p> <p>Real Assets (excluding Real Estate): Dow Jones Brookfield Global Infrastructure Index</p> <p>Real Assets (including Real Estate): Equal blend of Dow Jones Brookfield Global Infrastructure Index and Dow Jones U.S. Select Real Estate Securities Index</p> <p>Real Estate: Dow Jones U.S. Select Real Estate Securities Index</p>
<p><b>Remaining Value</b></p>	<p>The investor's value as reported by a fund manager on the investor's capital account statement. All investor values in this report are as of the date of this report, unless otherwise noted. Some funds may be denominated in non-USD currencies, and such remaining values represent the fund's local currency value translated to USD at the rate as of the date of this report.</p>
<p><b>TVPI</b></p>	<p>Acronym for "Total Value-to-Paid-In", which is a performance measurement for Private Market investments. The performance calculations represents Distributed plus Remaining Value, then divided by Contributed. TVPIs for funds and groupings of funds are net of all fund fees and expenses as reported to by fund managers to Meketa.</p>
<p><b>Unfunded</b></p>	<p>The remaining balance of capital that a fund manager has yet to call against a commitment amount. Meketa updates unfunded balances for funds to reflect all information provided by fund managers provided in their cash flow notices. Some funds may be denominated in non-USD currencies, and such unfunded balances represent the fund's local currency unfunded balance translated to USD at the rate as of the date of this report.</p>



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If we manage your assets on a discretionary basis, please contact us if there are any changes in your financial situation or investment objectives, or if you want to impose any reasonable restrictions on our management of your account or reasonably modify existing restrictions.

In general, the valuation numbers presented in this report are prepared by the custodian bank for listed securities, and by the fund manager or appropriate General Partner in the case of unlisted securities. The data used in the market comparison sections of this report are sourced from various databases. These data are continuously updated and are subject to change.

This report does not contain all the information necessary to fully evaluate the potential risks of any of the investments described herein. Because of inherent uncertainties involved in the valuations of investments that are not publicly traded, any estimated fair values shown in this report may differ significantly from the values that would have been used had a ready market for the underlying securities existed, and the differences could be material.

This document may contain certain forward-looking statements, forecasts, estimates, projections, and opinions ("Forward Statements"). No representation is made or will be made that any Forward Statements will be achieved or will prove to be correct. A number of factors, in addition to any risk factors stated in this material, could cause actual future results to vary materially from the Forward Statements. No representation is given that the assumptions disclosed in this document upon which Forward Statements may be based are reasonable. There can be no assurance that the investment strategy or objective of any fund or investment will be achieved, or that the client will receive a return of the amount invested.

In some cases Meketa Investment Group assists the client in handling capital calls or asset transfers among investment managers. In these cases we do not make any representations as to the managers' use of the funds, but do confirm that the capital called or transferred is within the amounts authorized by the client.

Because there is no readily accessible market for private markets assets (companies and partnerships), the values placed on private markets assets are calculated by General Partners using conservative and industry standard pricing procedures. Annually, an independent auditor reviews the pricing procedures employed by the General Partner of each partnership.

The values of companies and partnerships are audited at year-end, and are not audited at other quarter-end periods. While financial information may be audited, there is some discretion as to the method employed to price private companies and, therefore, private markets partnerships. At all times, Meketa Investment Group expects General Partners to utilize conservative and industry standard pricing procedures, and requires the General Partners to disclose those procedures in their reports. However, because of the inherent uncertainty of valuation, these estimated values may differ from the values that would be used if a ready market for the investments existed, and the differences could be significant.