

San Jose Federated City Employees' Retirement System

Third Quarter 2020

Private Markets Program
PUBLIC

FCERS 3-18-21

San Jose Federated City Employees' Retirement System Private Markets Program

Program Snapshot | As of September 30, 2020

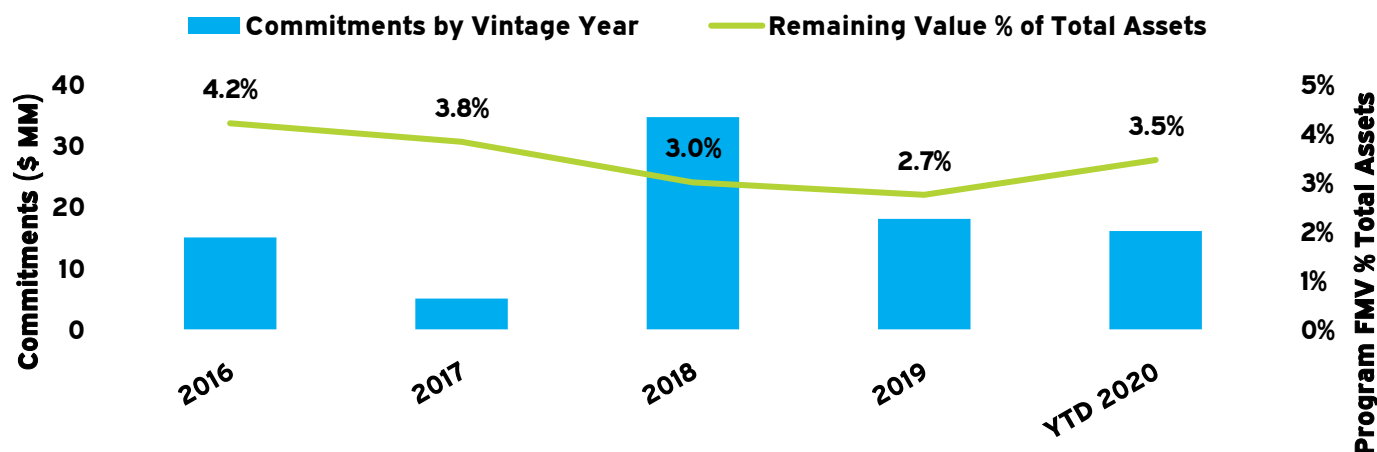
Snapshot

By Account

Account Type	Inception Year	Committed (\$ MM)	Unfunded (\$ MM)	Contributed (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	TVPI (X)	IRR (%)	PME IRR (%)
Legacy Private Equity	2005	174.3	0.0	156.1	194.2	36.4	1.48	7.4	6.2
NB Fund of One	2017	261.8	14.5	124.1	2.3	152.3	1.24	17.4	9.1
Private Debt	2010	238.6	85.4	247.9	190.2	84.7	1.11	3.7	6.6
Real Estate	2007	207.1	40.2	187.9	149.5	81.6	1.23	5.8	6.3
Real Assets	2016	46.4	13.1	33.2	4.2	30.3	1.04	2.3	-1.3
Total		928.2	153.2	749.2	540.3	385.3	1.24	6.4	NA

Introduction

As of September 30, 2020, the San Jose Federated City Employees' Retirement System had committed \$238.6 million to nine private debt partnerships and two co-investments. The reported fair value of the aggregate Private Debt Program was \$84.7 million at September 30, 2020, which equates to 3.5% of the overall Retirement System, versus a 3.0% policy target.



Program Status

No. of Investments	11
Committed (\$ MM)	238.6
Contributed (\$ MM)	247.9
Distributed (\$ MM)	190.2
Remaining Value (\$ MM)	84.7

Performance Since Inception

	Program	Peer Universe
DPI	0.77x	0.58x
TVPI	1.11x	1.26x
IRR	3.7%	8.5%

Commitments

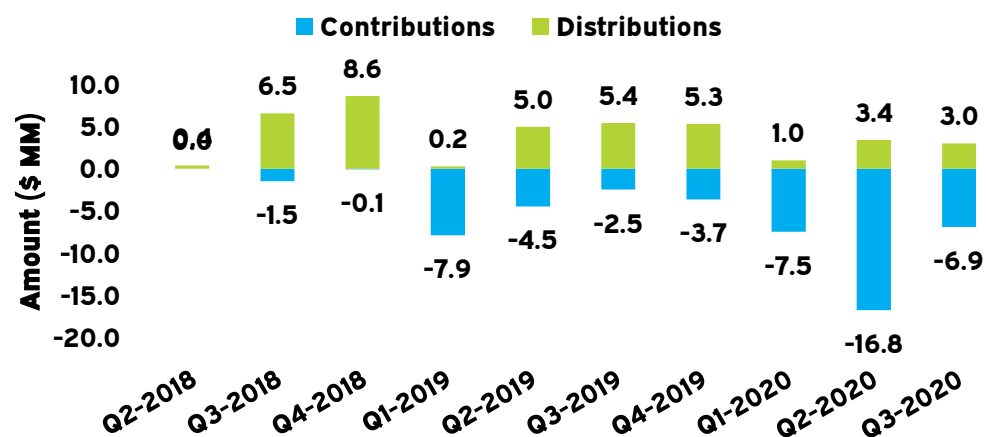
Commitments This Quarter

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)
Octagon CLO III	2018	North America	2.50
Arbour Lane II	2018	Global: All	2.49
Cross Ocean ESS III	2019	Western Europe	1.94

Largest Distributions This Quarter

Fund	Vintage	Region	Amount (\$MM)
Arbour Lane II	2018	Global: All	1.50
Medley II	2010	North America	1.03
Octagon CLO III	2018	North America	0.42

By Vintage

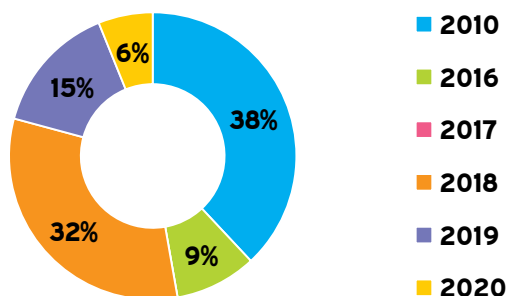
Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)	Peer IRR (%)
2010	3	150.0	183.1	58.3	173.3	32.2	90.5	0.95	1.12	3.5	10.5
2016	1	15.0	12.0	3.4	6.4	7.8	11.1	0.53	1.18	6.7	8.3
2017	1	5.0	5.0	0.0	6.1	0.0	0.0	1.22	1.22	12.9	8.0
2018	3	34.6	30.6	6.3	3.7	27.1	33.4	0.12	1.01	1.1	9.5
2019	1	18.0	12.3	6.3	0.7	12.4	18.8	0.06	1.06	NM	NM
2020	2	16.0	4.8	11.2	0.0	5.2	16.4	0.00	1.08	NM	NM
Total	11	238.6	247.9	85.4	190.2	84.7	170.2	0.77	1.11	3.7	8.5

Fund Performance: Sorted By Vintage And Strategy

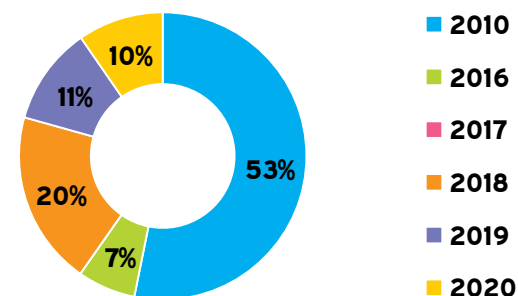
By Investment	Vintage	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
GSO Direct Lending	2010	50.0	43.0	29.3	45.0	4.3	1.15	1.38	4.7	10.5
Medley II	2010	50.0	51.7	1.7	46.0	11.7	1.11	1.38	2.2	10.5
White Oak DL	2010	50.0	88.3	27.3	82.3	16.2	1.12	1.38	4.1	10.5
Cross Ocean ESS II	2016	15.0	12.0	3.4	6.4	7.8	1.18	1.15	6.7	8.3
ArrowMark Sep Acct	2017	5.0	5.0	0.0	6.1	0.0	1.22	1.14	12.9	8.0
Arbour Lane II	2018	8.0	7.8	2.5	2.1	6.3	1.08	1.12	26.2	9.5
Crestline Co-Invest	2018	1.6	1.6	0.0	0.0	1.8	1.20	1.12	13.5	9.5
Octagon CLO III	2018	25.0	21.3	3.8	1.6	19.0	0.97	1.12	-4.0	9.5
Cross Ocean ESS III	2019	18.0	12.3	6.3	0.7	12.4	1.06	1.06	NM	NM
Crestline Fund II	2020	8.0	0.0	8.0	0.0	0.0	NM	NM	NM	NM
Eagle Point Income	2020	8.0	4.8	3.2	0.0	5.2	1.08	0.99	NM	NM
Total		238.6	247.9	85.4	190.2	84.7	1.11	1.26	3.7	8.5

By Vintage

Percent of FMV

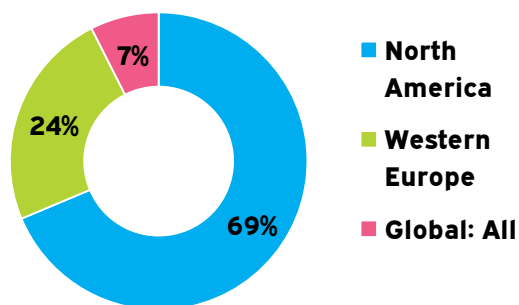


Percent of Exposure

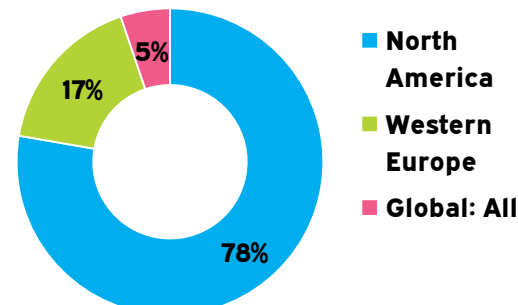


By Geographic Focus

Percent of FMV

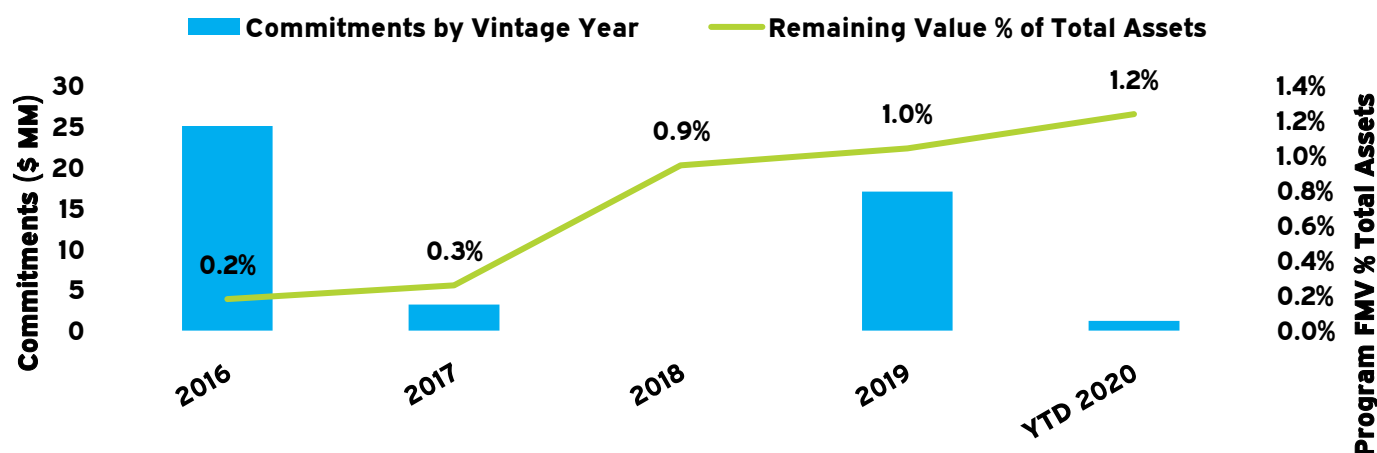


Percent of Exposure



Introduction

As of September 30, 2020, the System had committed \$46.4 million to six real assets funds and one real assets co-investment. The total reported fair value of real assets investments was \$30.2 million at September 30, 2020, which equates to 1.2% of the overall Retirement System, versus a 3.0% policy target.



Program Status

No. of Investments	7
Committed (\$ MM)	46.4
Contributed (\$ MM)	33.2
Distributed (\$ MM)	4.2
Remaining Value (\$ MM)	30.3

Performance Since Inception

	Program	Peer Universe
DPI	0.13x	0.11x
TVPI	1.04x	1.10x
IRR	2.3%	5.4%

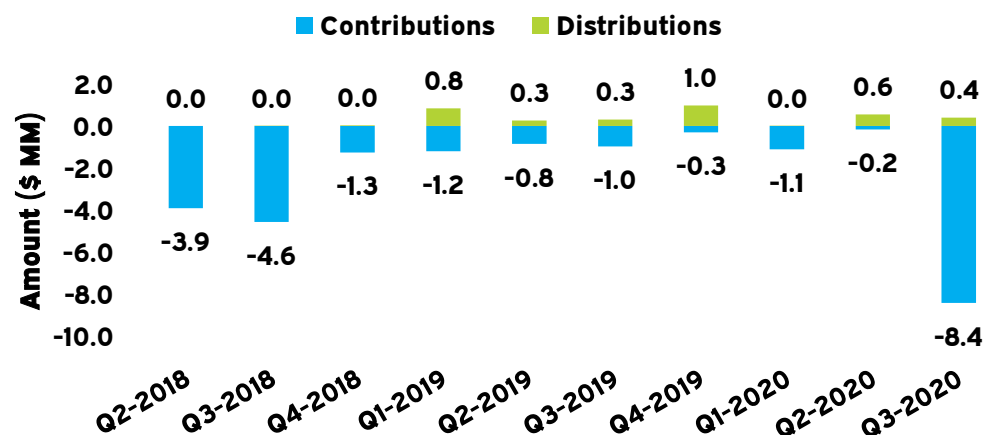
Commitments

Commitments This Quarter

Fund	Region	Amount (MM)
Orion Mine Finance Fund III, L.P.	Global: All	5.00
Energy Co-Invest	North America	1.20

Cash Flows

Recent Quarterly Cash Flows



Largest Contributions This Quarter

Fund	Vintage	Region	Amount (\$MM)
Lime Rock New Energy	2019	Global: Developed	2.79
Orion Mine III	2019	Global: All	1.62
Kimmeridge Energy V	2019	North America	1.33

Largest Distributions This Quarter

Fund	Vintage	Region	Amount (\$MM)
GIP III	2016	Global: Developed	0.30
Kimmeridge Energy V	2019	North America	0.09

By Vintage

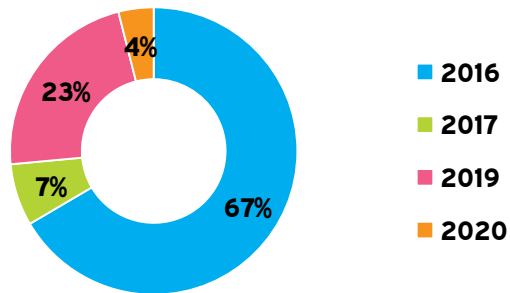
Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)	Peer IRR (%)
2016	1	25.0	22.4	3.0	4.0	20.2	23.2	0.18	1.08	3.4	5.6
2017	1	3.2	2.6	0.7	0.0	2.1	2.8	0.01	0.83	NM	NM
2019	4	17.0	7.0	9.3	0.1	6.8	16.2	0.02	1.00	NM	NM
2020	1	1.2	1.2	0.0	0.0	1.2	1.2	0.00	1.00	NM	NM
Total	7	46.4	33.2	13.8	4.2	30.3	44.1	0.13	1.04	2.3	5.4

Fund Performance: Sorted By Vintage And Strategy

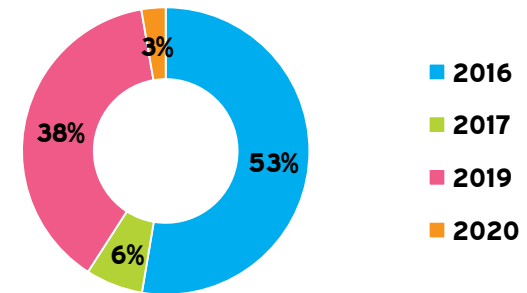
By Investment	Vintage	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
GIP III	2016	25.0	22.4	3.0	4.0	20.2	1.08	1.12	3.4	5.6
Lime Rock VIII	2017	3.2	2.6	0.7	0.0	2.1	0.83	1.03	NM	NM
Kimmeridge Energy V	2019	3.8	2.5	1.3	0.1	2.3	0.97	1.07	NM	NM
Orion Mine III	2019	5.0	1.6	2.7	0.0	1.8	1.10	1.07	NM	NM
GIP IV	2019	3.2	0.1	3.1	0.0	NM	NM	NM	NM	NM
Lime Rock New Energy	2019	5.0	2.8	2.2	0.0	2.8	1.00	1.07	NM	NM
Energy Co-Invest	2020	1.2	1.2	0.0	0.0	1.2	1.00	0.93	NM	NM
Total		46.4	33.2	13.8	4.2	30.3	1.04	1.10	2.3	5.4

By Vintage

Percent of FMV

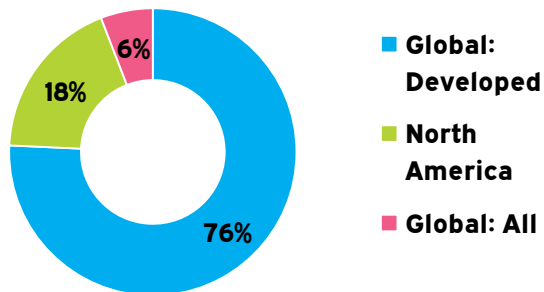


Percent of Exposure

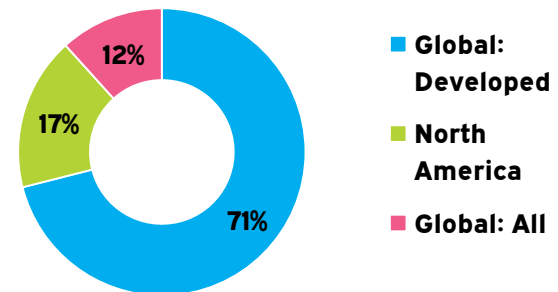


By Geographic Focus

Percent of FMV

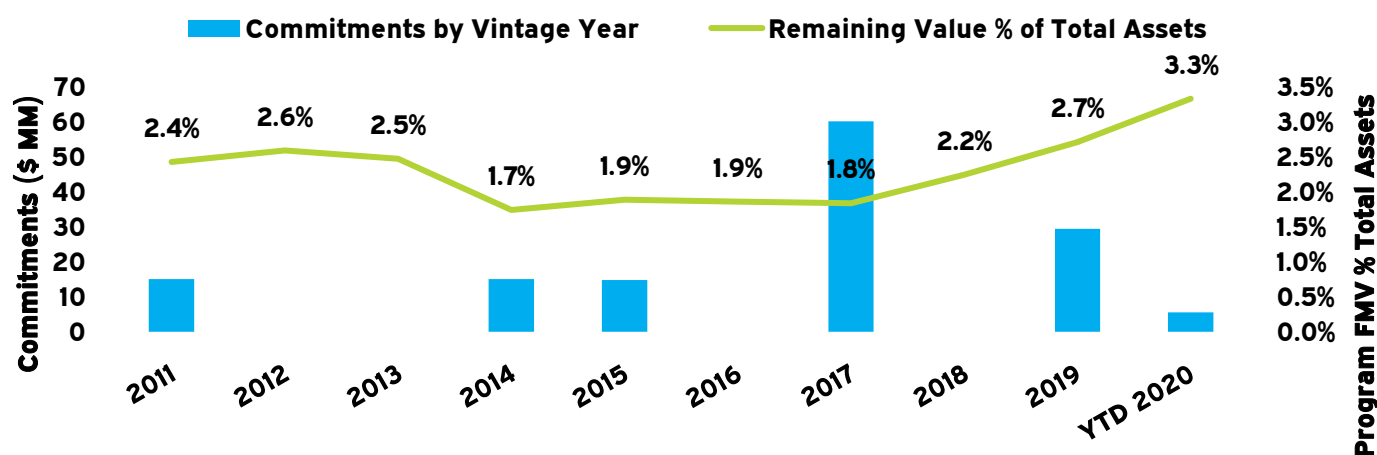


Percent of Exposure



Introduction

As of September 30, 2020, the Retirement System had committed a total of \$207.1 million to 14 closed-end real estate funds. The Real Estate Program's reported fair value of real estate investments was \$81.6 million at September 30, 2020, which equates to 3.3% of the overall Retirement System, versus a 3.0% policy target.



Program Status

No. of Investments	14
Committed (\$ MM)	207.1
Contributed (\$ MM)	187.9
Distributed (\$ MM)	149.5
Remaining Value (\$ MM)	81.6

Performance Since Inception

	Program	Peer Universe
DPI	0.80x	0.85x
TVPI	1.23x	1.26x
IRR	5.8%	5.8%

Commitments

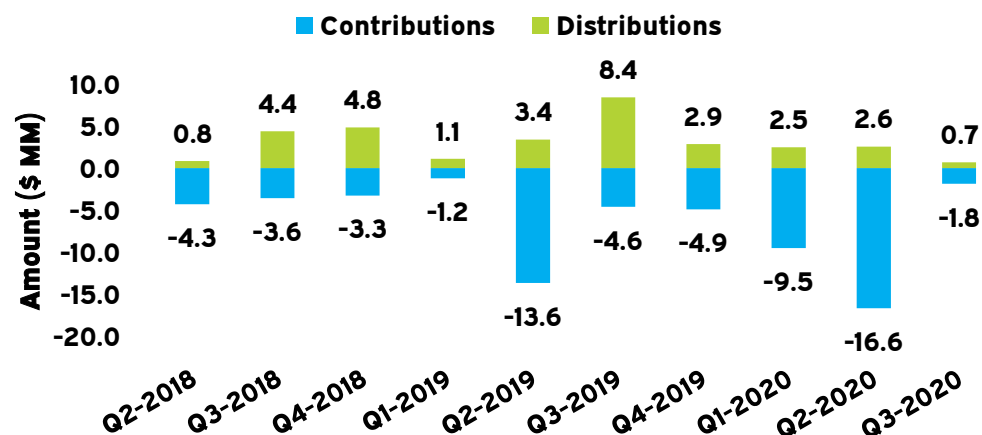
Commitments This Quarter

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)
EPISO 5	2019	Western Europe	1.23
GEM VI	2017	North America	0.50
DRA IX	2017	North America	0.08

Largest Distributions This Quarter

Fund	Vintage	Region	Amount (\$MM)
DRA IX	2017	North America	0.40
DRA VII	2011	North America	0.16
Rockpoint VI	2019	North America	0.07

By Vintage

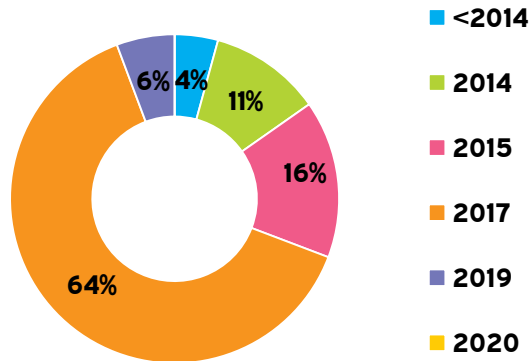
Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)	Peer IRR (%)
2005	1	20.0	30.5	0.0	40.3	0.0	0.0	1.32	1.32	5.3	0.4
2006	1	20.0	18.2	1.8	8.8	0.0	1.8	0.48	0.48	-10.9	0.1
2007	2	27.6	28.4	0.0	40.7	0.4	0.4	1.43	1.45	8.8	3.2
2011	1	15.0	16.4	0.0	32.7	3.1	3.1	2.00	2.19	21.2	12.0
2014	1	15.0	18.2	0.0	13.5	9.0	9.0	0.74	1.23	7.8	10.4
2015	1	14.7	13.3	1.4	3.4	12.7	14.1	0.25	1.20	8.1	9.5
2017	3	60.0	57.8	7.3	9.9	51.8	59.1	0.17	1.07	6.2	8.0
2019	3	29.3	5.1	24.2	0.2	4.7	28.8	0.03	0.94	NM	NM
2020	1	5.5	0.0	5.5	0.0	0.0	5.5	0.00	NM	NM	NM
Total	14	207.1	187.9	40.2	149.5	81.6	121.8	0.80	1.23	5.8	5.8

Fund Performance: Sorted By Vintage And Strategy

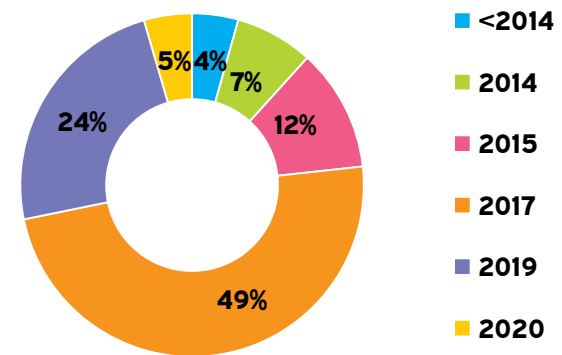
By Investment	Vintage	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
DRA V	2005	20.0	30.5	0.0	40.3	0.0	1.32	1.02	5.3	0.4
GEAM Value Add	2006	20.0	18.2	1.8	8.8	0.0	0.48	1.01	-10.9	0.1
DRA VI	2007	9.7	10.6	0.0	17.0	0.4	1.65	1.18	10.6	3.2
Fidelity RE III	2007	17.9	17.9	0.0	23.7	0.0	1.33	1.18	7.3	3.2
DRA VII	2011	15.0	16.4	0.0	32.7	3.1	2.19	1.46	21.2	12.0
DRA VIII	2014	15.0	18.2	0.0	13.5	9.0	1.23	1.34	7.8	10.4
EPISO 4	2015	14.7	13.3	1.4	3.4	12.7	1.20	1.31	8.1	9.5
Torchlight VI	2017	30.0	33.2	0.0	3.0	30.0	1.00	1.13	-0.4	8.0
GEM VI	2017	10.0	4.5	5.6	0.6	3.7	0.97	1.13	-3.7	8.0
DRA IX	2017	20.0	20.2	1.7	6.3	18.1	1.21	1.13	11.7	8.0
Rockpoint VI	2019	6.5	1.1	5.4	0.1	0.9	0.94	0.93	NM	NM
DRA X	2019	10.0	1.6	8.4	0.1	1.6	1.08	0.93	NM	NM
EPISO 5	2019	12.8	2.5	10.3	0.0	2.1	0.85	0.93	NM	NM
Exeter V	2020	5.5	0.0	5.5	0.0	0.0	NM	NM	NM	NM
Total		207.1	187.9	40.2	149.5	81.6	1.23	1.26	5.8	5.8

By Vintage

Percent of FMV

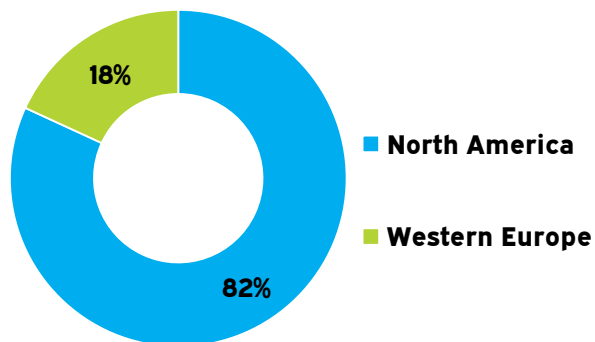


Percent of Exposure

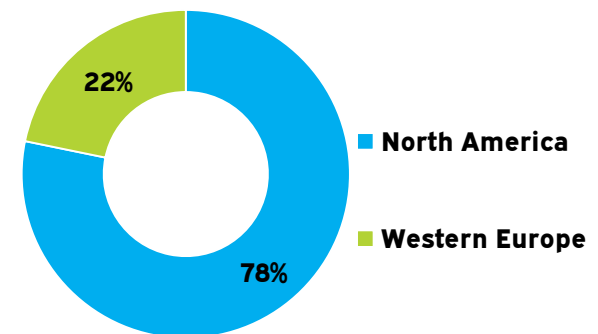


By Geographic Focus

Percent of FMV



Percent of Exposure

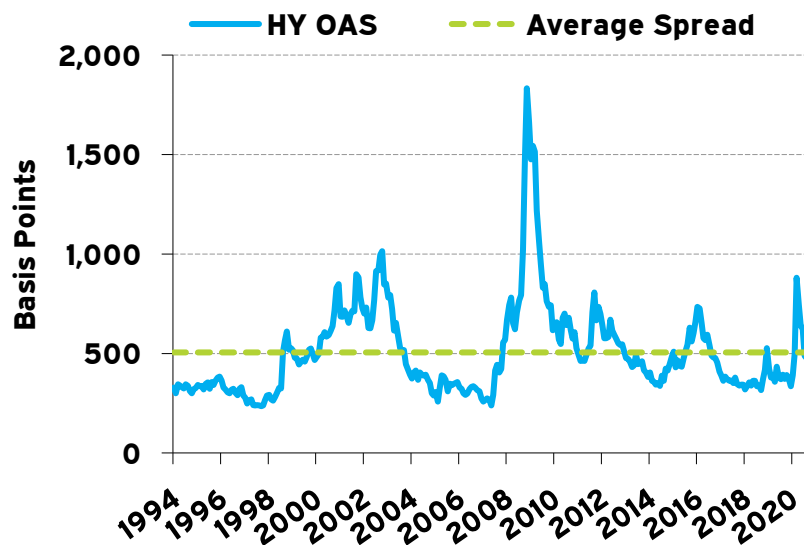


Private Debt

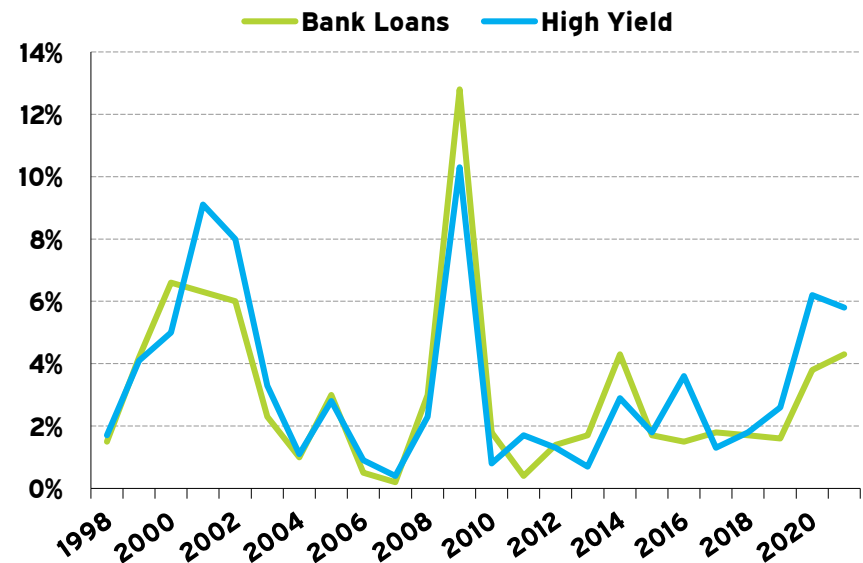
The credits markets continued to recover during the third quarter from the volatility experienced earlier in the year. Both high yield and bank loan spreads tightened as financing markets continued to open and stimulus programs provided additional support. Across public and private credit markets lenders also continued to work with borrowers to reduce or restructure debt and interest expense in an attempt to minimize defaults and protect their investments from permanent impairment. High yield credit spreads finished September at 517 basis points, which is only 11 basis point higher than the long term average, and 180 basis points wider than they started the year. The high yield yield-to-worst of 5.8% continued to be pressured by lower market interest rates.

With second quarter default volumes almost surpassing their historic quarterly high, they seemingly only had one direction to move in the third quarter. By the end of September there was just \$16 billion of defaulted bank loans and high yield bonds for the quarter, far less than the \$74 billion that defaulted in the second quarter and also less than the \$24 billion in the first quarter.

U.S. Corporate High Yield Spread¹



U.S. Corporate Default Rate²



¹ Source: Barclays Capital

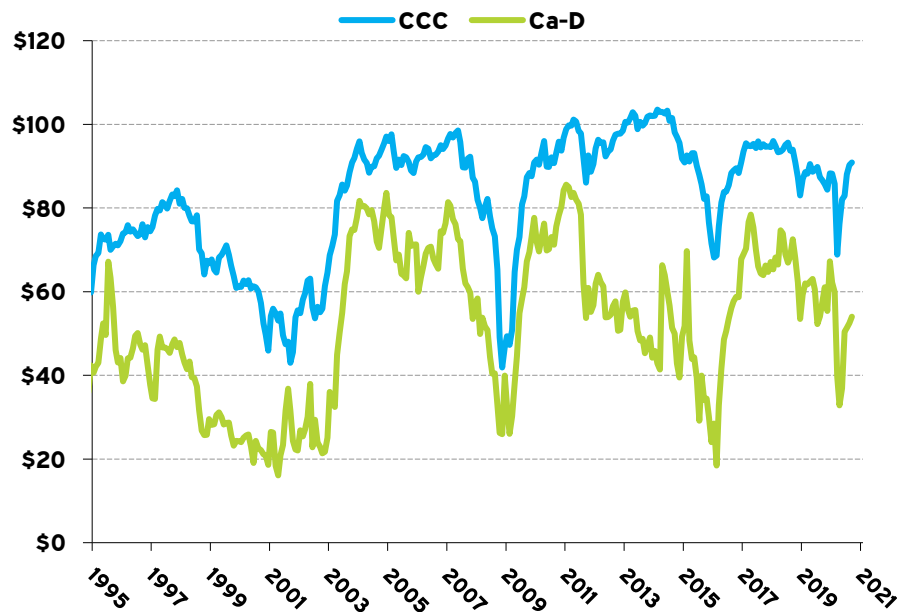
² Source: JP Morgan

Distressed & Opportunistic Debt

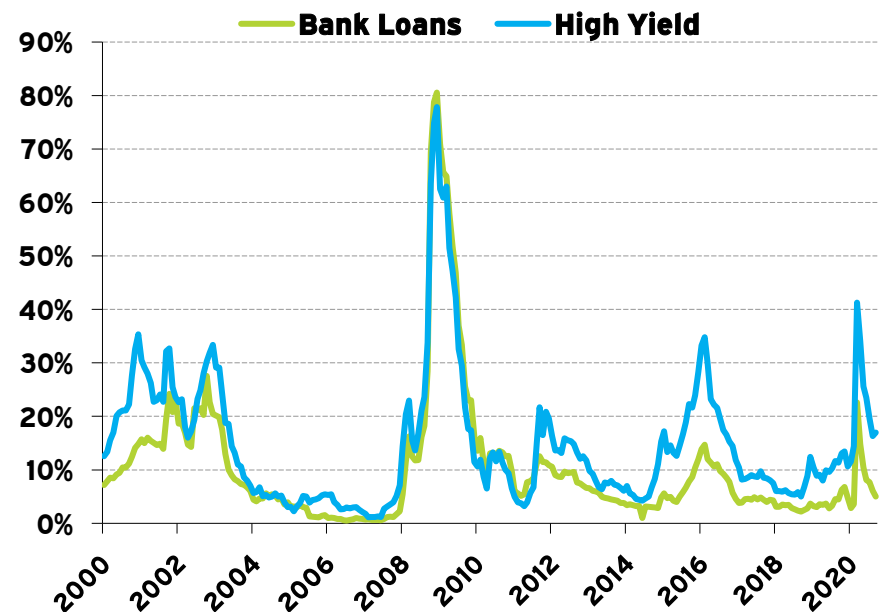
While financing markets continued to recover in the third quarter, there were still many opportunities throughout the period for companies in need of capital to either execute a distressed exchange or restructuring, or raise opportunistic financing from private debt funds. Most distressed and opportunistic opportunities continue to be in industries directly impacted by the COVID-19 pandemic such as travel, lodging, and certain consumer segments. These opportunities are manifesting through corporate bonds and loans issued by companies, as well as in securitizations of debt that holds these underlying loans.

Lower rated debt pricing increased in the third quarter reducing the opportunity and expected returns for distressed asset purchases. Bonds rated CCC actually now trade at higher prices than they did at the beginning of the year. The distressed ratios in bank loans and high yield bonds also fell.

Lower Rated Debt Pricing¹



Distressed Ratio²



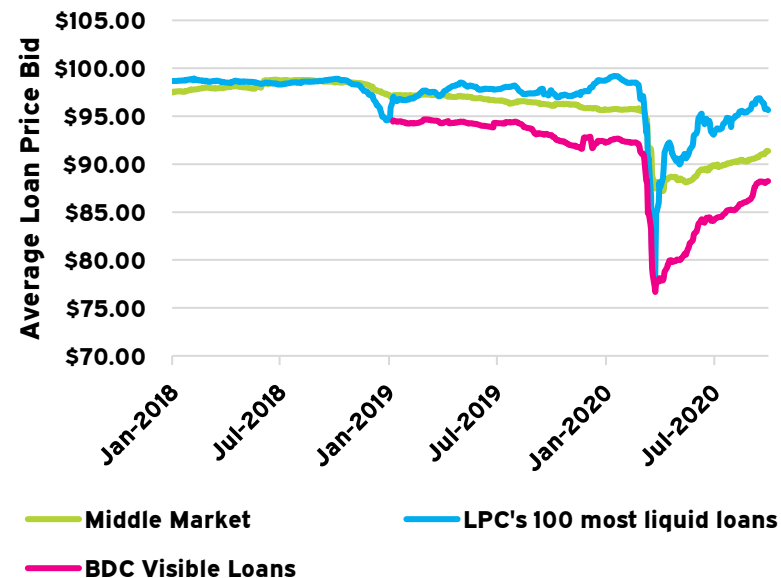
¹ Source: Barclays Capital

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

Private Senior & Subordinated Debt

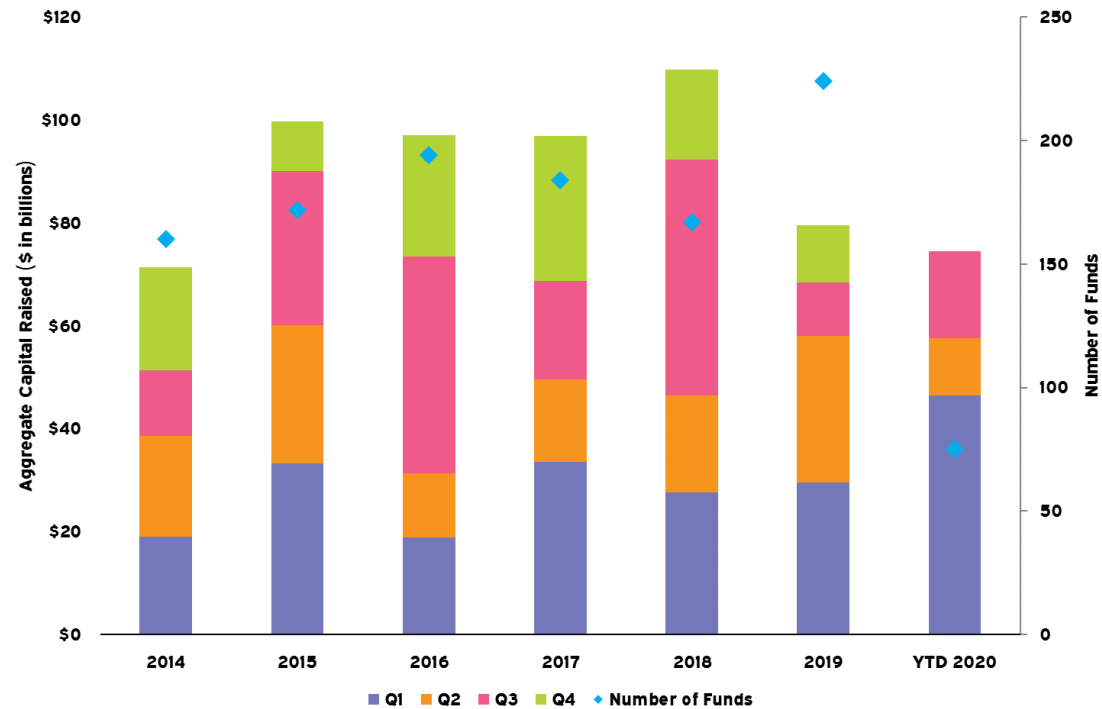
Middle market loan new issuance continued to thaw in the third quarter, however overall volumes for the year through September were down 38% from the same period in 2019. As the private loan recovery has lagged public loans, the new issue yield premium for private loans has increased to nearly 200 basis points. Secondary market pricing has recovered to the high-\$80s, using BDC-visible loans as a proxy, which was still below public secondary markets. Subordinated debt providers continued to experience low new issue volumes, with some exceptions for opportunistic capital raises.

Senior Loan Secondary Market Pricing¹



¹ Source: Refinitiv LPC

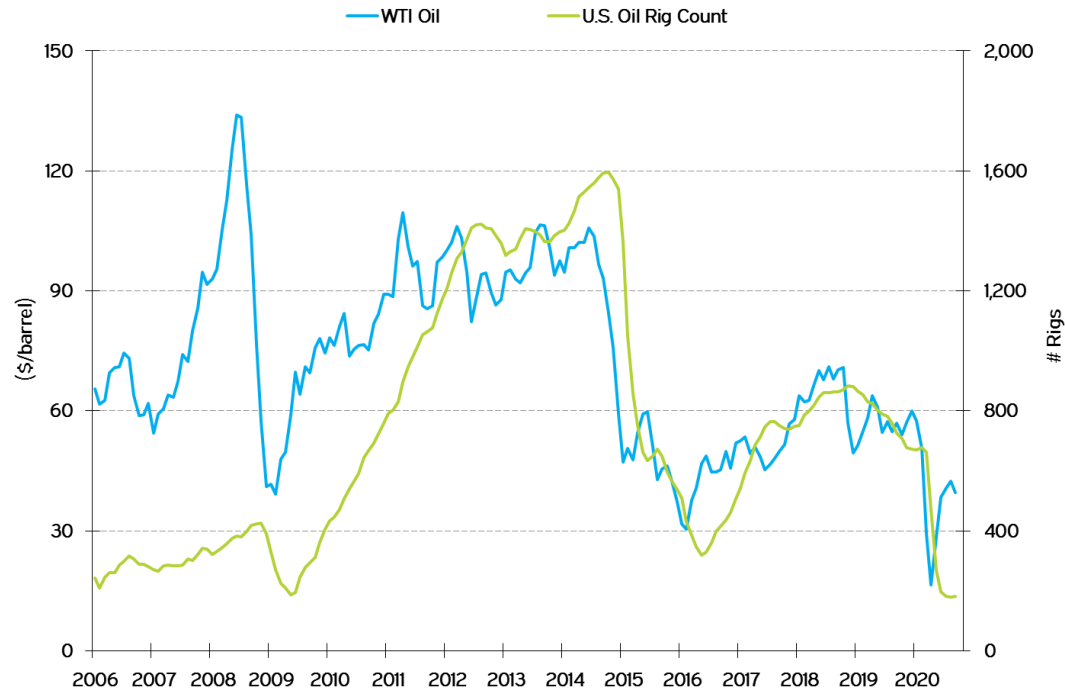
Global Quarterly Unlisted Natural Resource Fundraising¹



Fundraising during the third quarter improved modestly from the prior quarter and is on track to raise more capital than 2019 across with fewer funds. During the third quarter, approximately \$17.0 billion was raised across 16 funds with the average fund size raised averaging just over \$1 billion of commitments. As of September 30, 2020, Preqin reported a total of 332 unlisted natural resources funds with a combined fundraising target of approximately \$192 billion. The majority of natural resources managers fundraising during the third quarter were focused on North America, accounting for approximately 46% of cumulative targeted capitalization in the market.

¹ Source: Preqin Private Capital Fundraising Update, Q3 2020.

Extracted Resources Oil Price vs. Active U.S. Rigs¹

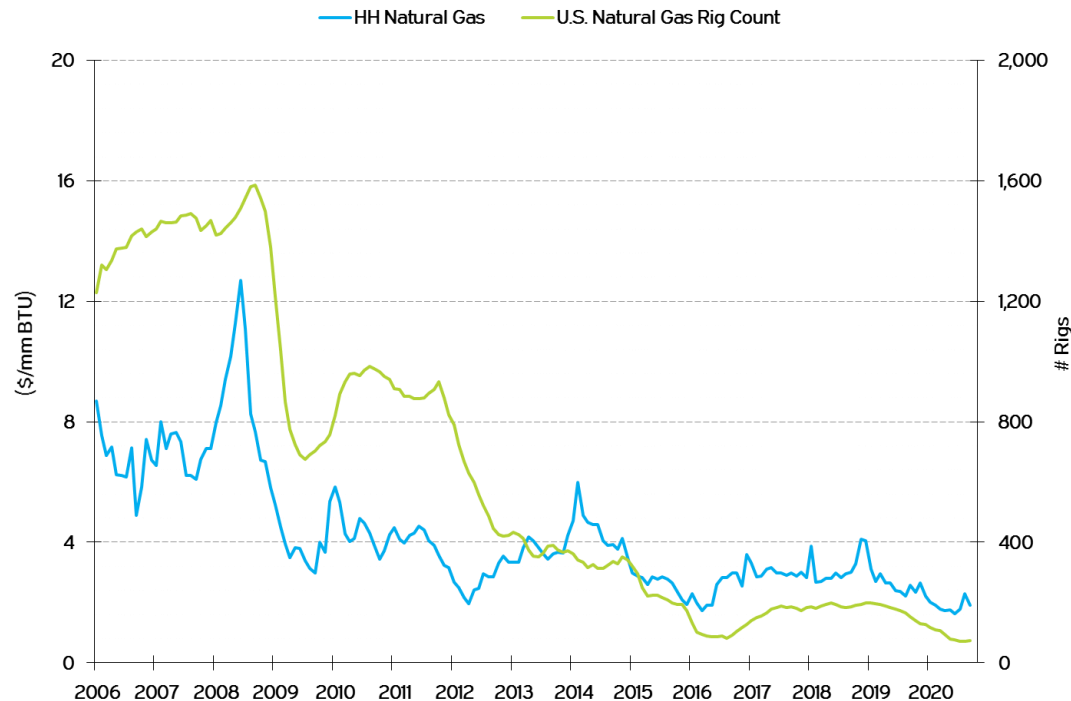


After front-month West Texas Intermediate oil price contracts briefly went negative in the second quarter, oil prices rebounded and ended the third quarter at approximately \$40 per barrel, representing a 3% increase. International oil, as represented by Brent prices, increased by less than 2% to \$41 per barrel. U.S. oil production averaged 10.8 million barrels per day (“boepd”) during the third quarter, a meaningful decrease from the 12.7 million boepd produced in March 2020. The U.S. oil rig count fell by 15 to 181 during the quarter as companies curtailed capex spending and reduced drilling activity. U.S. gasoline prices for regular blend increased to \$2.38 during the third quarter, representing a 5% quarterly increase and 16% decrease from one year prior.

¹ Source: EIA and Baker Hughes.

Extracted Resources

Natural Gas Price vs. Active U.S. Rigs ¹

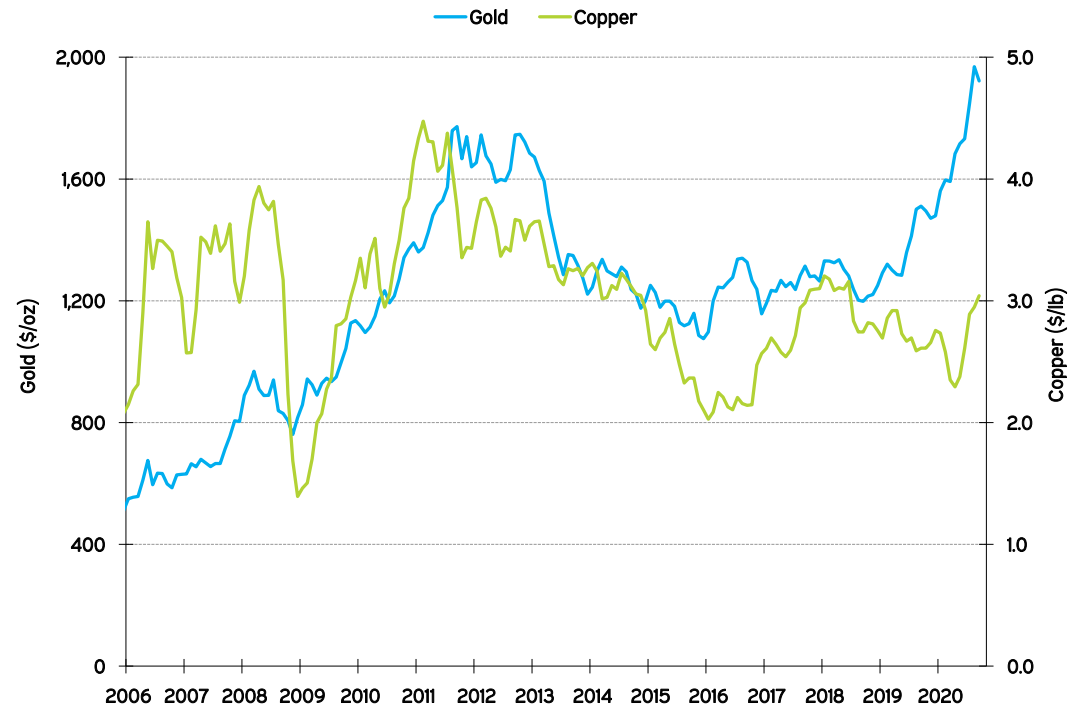


Henry Hub natural gas spot prices ended the quarter at approximately \$1.92/MM BTU, representing an 18% increase relative to the prior quarter and a 25% decrease from one year prior. During the quarter, the U.S. natural gas rig count fell by 3 to 73. Total U.S. natural gas production averaged almost 100 billion cubic feet per day ("bcf/d"), a slight decrease from 98 bcf/d during the prior quarter.

¹ Source: EIA and Baker Hughes.

Extracted Resources

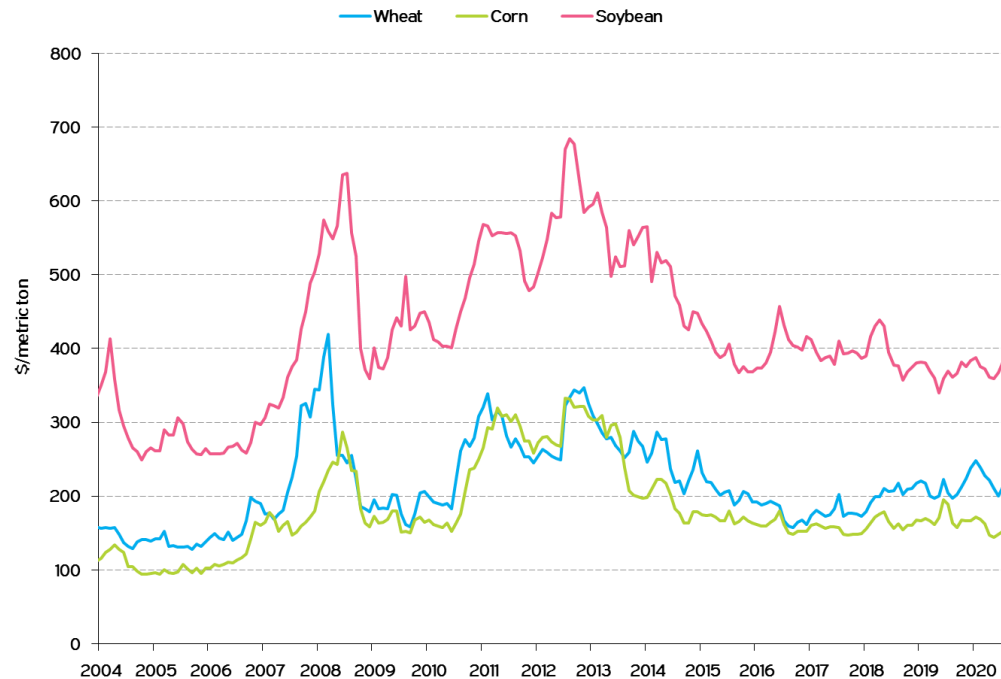
Metals Prices¹



During the third quarter, the metals and mining industry performed well. Gold prices continued its multi-year rally and finished the quarter at approximately \$1,921 per ounce representing an 11% quarterly increase and 27% increase from one year prior. Silver prices increased by 45% to almost \$26 per ounce. Copper prices increased by 17% during the quarter to just over \$3 per ounce and was largely driven by strong demand from China and other countries as economies began to resume activity.

¹ Source: World Bank

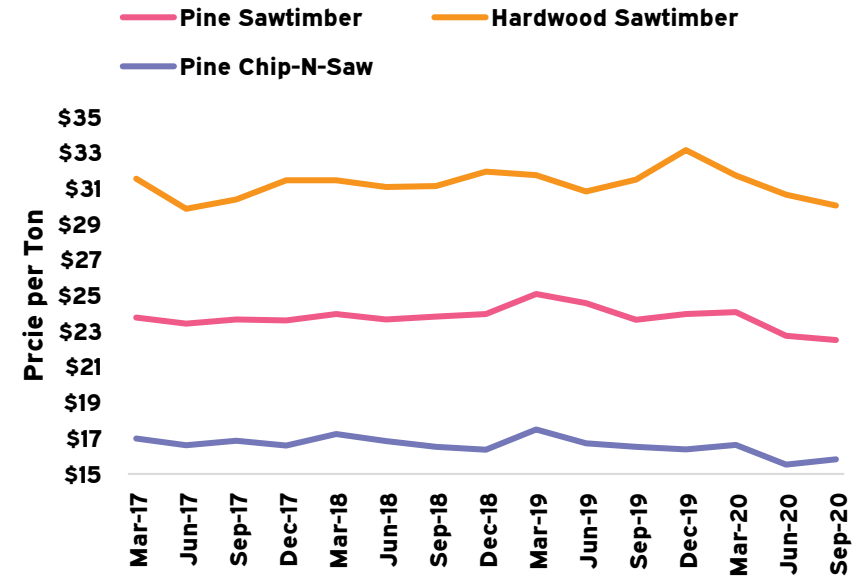
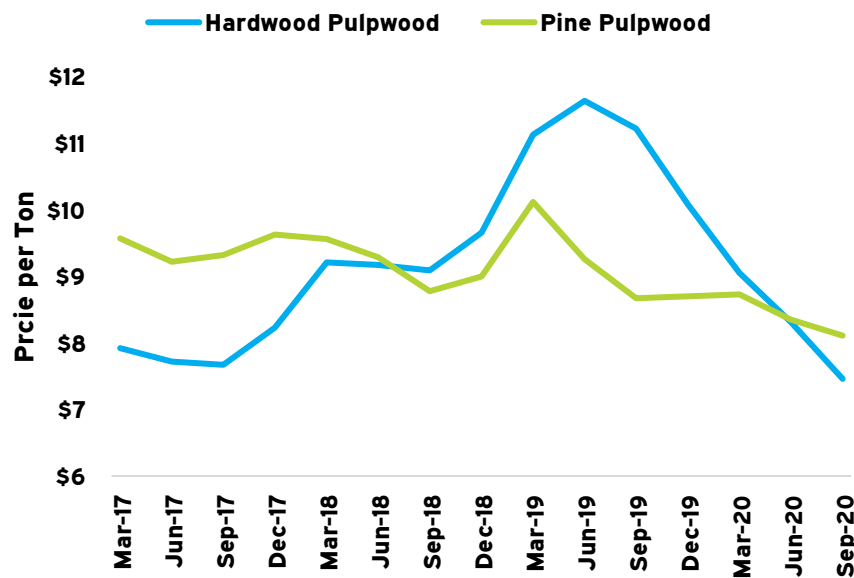
Harvested Resources Wheat, Corn, & Soybean¹



Several natural disasters disrupted the farming and agriculture industry during the third quarter. Severe storms brought 100 mph wind gusts across the Midwest that flattened corn and other crops. Multiple wildfires along the West coast burned millions of acres in California, Oregon, and Washington that created a smoke haze that affected air quality and crop growth. During the quarter, wheat, corn, and soybean prices increased by 10%, 12%, and 15%, respectively. The NCREIF Farmland index increased by 1.0% during the quarter primarily driven by income returns of 0.8%.

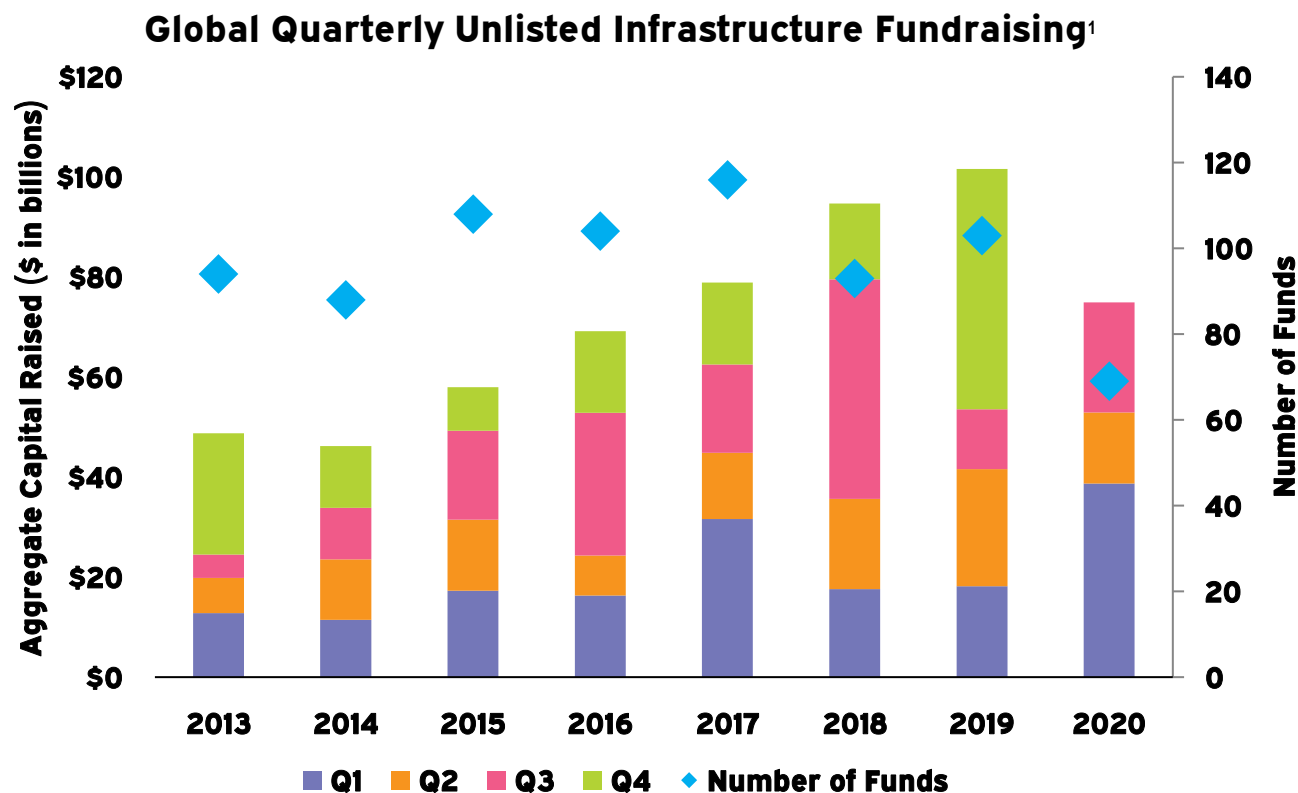
¹ Source: World Bank

Harvested Resources U.S. South Timber Prices¹



U.S. South average timber prices have remained fairly consistent over the past several years for sawtimber and chip-n-saw, while pulpwood has experienced more volatility. Hardwood pulpwood experienced the largest decline in the third quarter decreasing by 10%. Over the past 12 months pine and hardwood pulpwood have decrease 34% and 7% respectively. Hardwood and pine sawtimber prices declined by approximately 2% and 1%, respectively, during the quarter. Meanwhile, increased housing construction and remodeling activity have increased the demand for finished products such as lumber and panel. The NCREIF Timberland index was flat for the quarter with income returns offsetting asset depreciation returns.

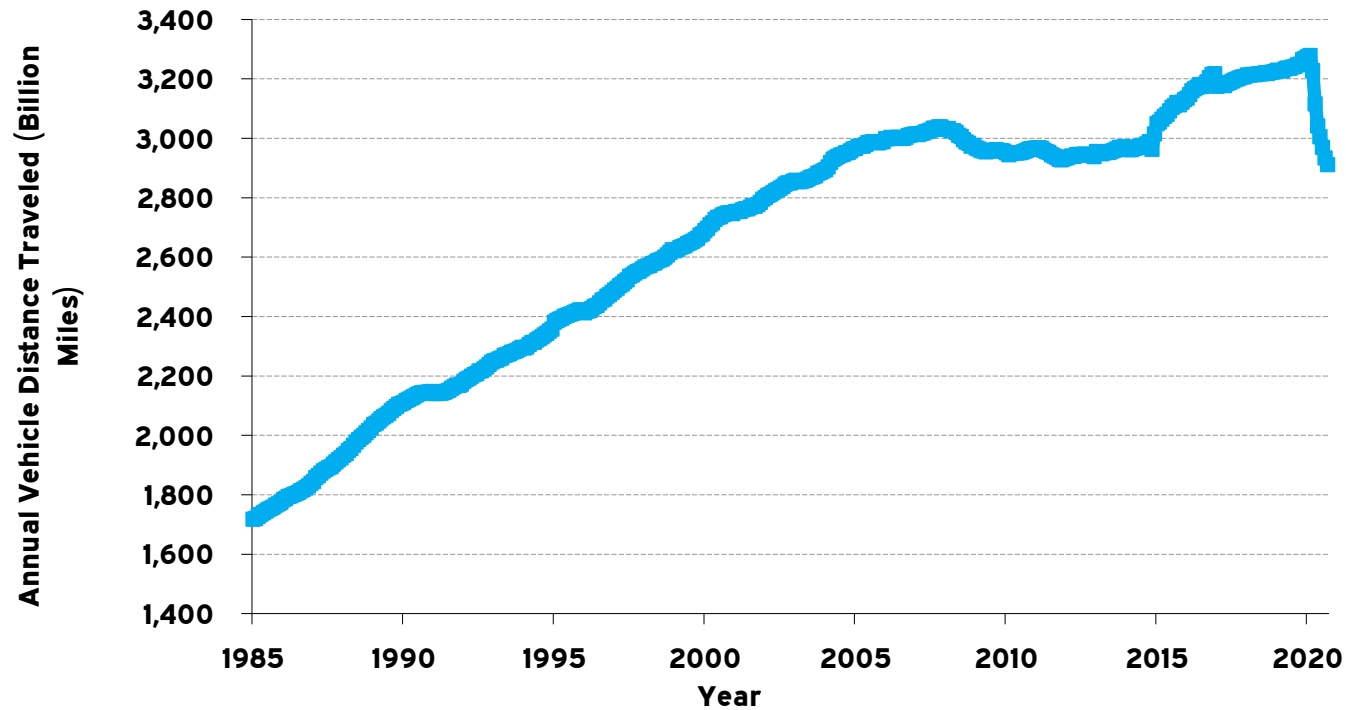
¹ Source: Bloomberg and TimberMart South



Capital raised in the third quarter of 2020 was the largest third quarter fundraising since 2018. The average fund raised was \$1.3 billion, more than the 2019 average of \$0.9 billion. As of September 30, 2020, a total of 255 unlisted infrastructure funds were in market, according to Preqin, with a combined fundraising target of approximately \$204 billion.

¹ Source: Preqin 2020 Global Infrastructure Report.

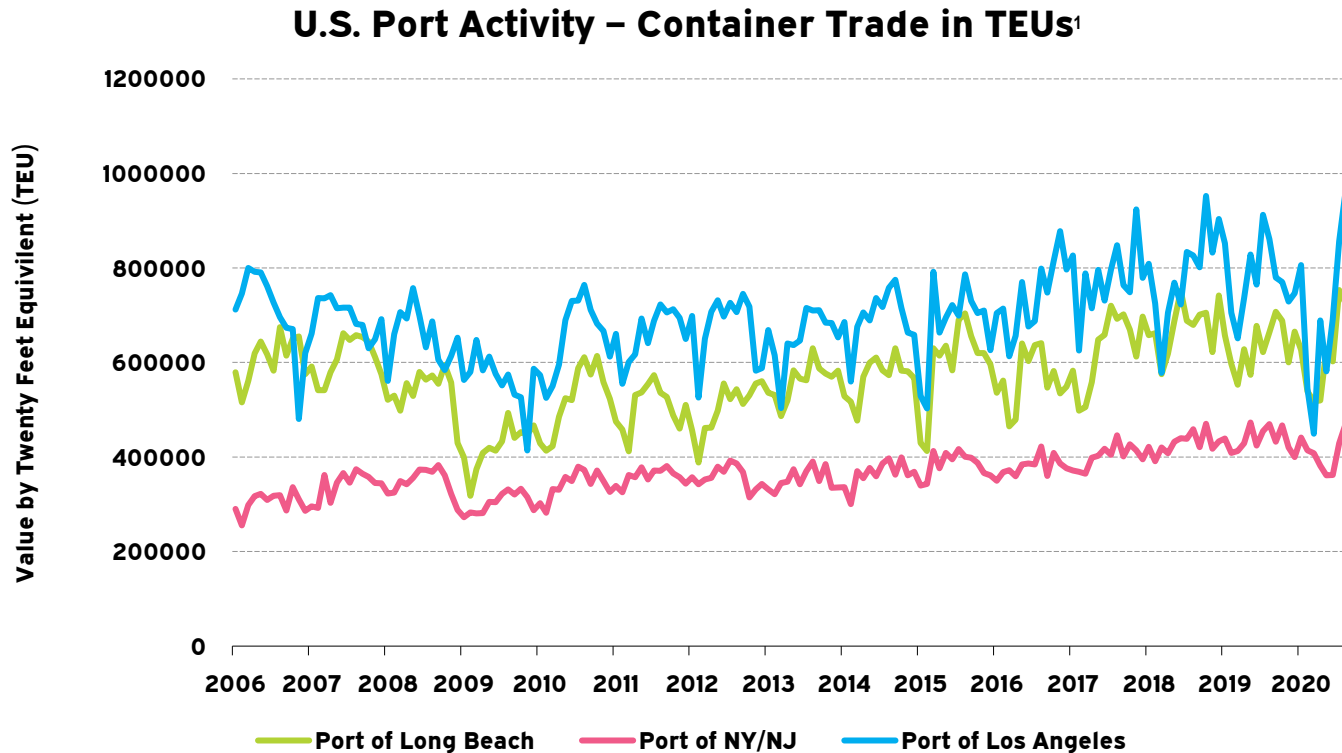
Moving 12-month Total on All U.S. Roads¹



The third quarter was far below pace for travel on U.S. roads totaling approximately 761.9 billion miles. This represented a decrease of 10.4% over the same period in 2019.

Up to this point in 2020, the average U.S. price of a gallon of gas went down to a monthly average of \$2.26 per gallon, with a peak of \$2.64. This compared to \$2.69 and \$2.95 seen in 2019.

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

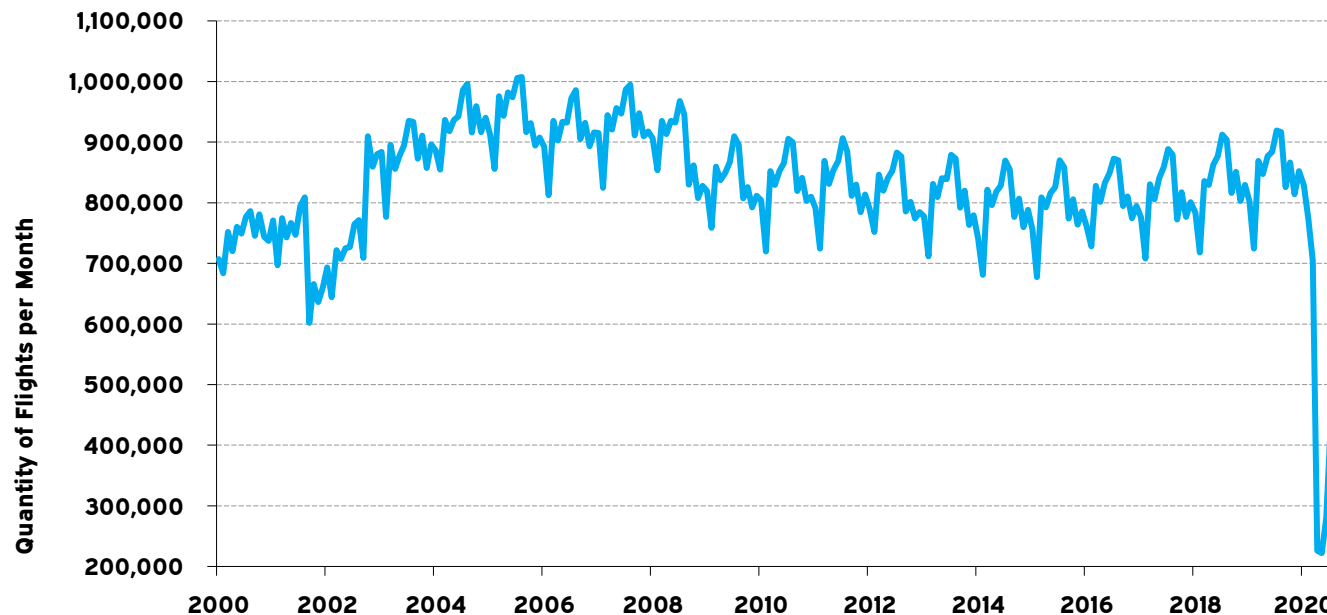


The chart represents the top three U.S. ports by container volume, as measured by twenty-foot equivalent units (TEU). Activity at the three ports provides a high-level representation of the volume of imports received into the U.S. more broadly.

During the third quarter of 2020, volumes at the three ports decreased by 461,503 units relative to the same period in 2019. On a year-over-year basis, the combined port volumes decreased by 1,378,495 TEU, or 6%, over the prior 12-month period. The Port of Long Beach recorded a decrease of 1% (86,274 TEU), the Port of NY/NJ reported a decrease of 4% (221,895 TEU) and the Port of Los Angeles recorded a decrease of 11% (1,070,326 TEU) from the prior 12 months.

¹ Source: www.polb.com, www.panynj.gov, and www.portoflosangeles.org

Total U.S. Domestic and International Flights¹

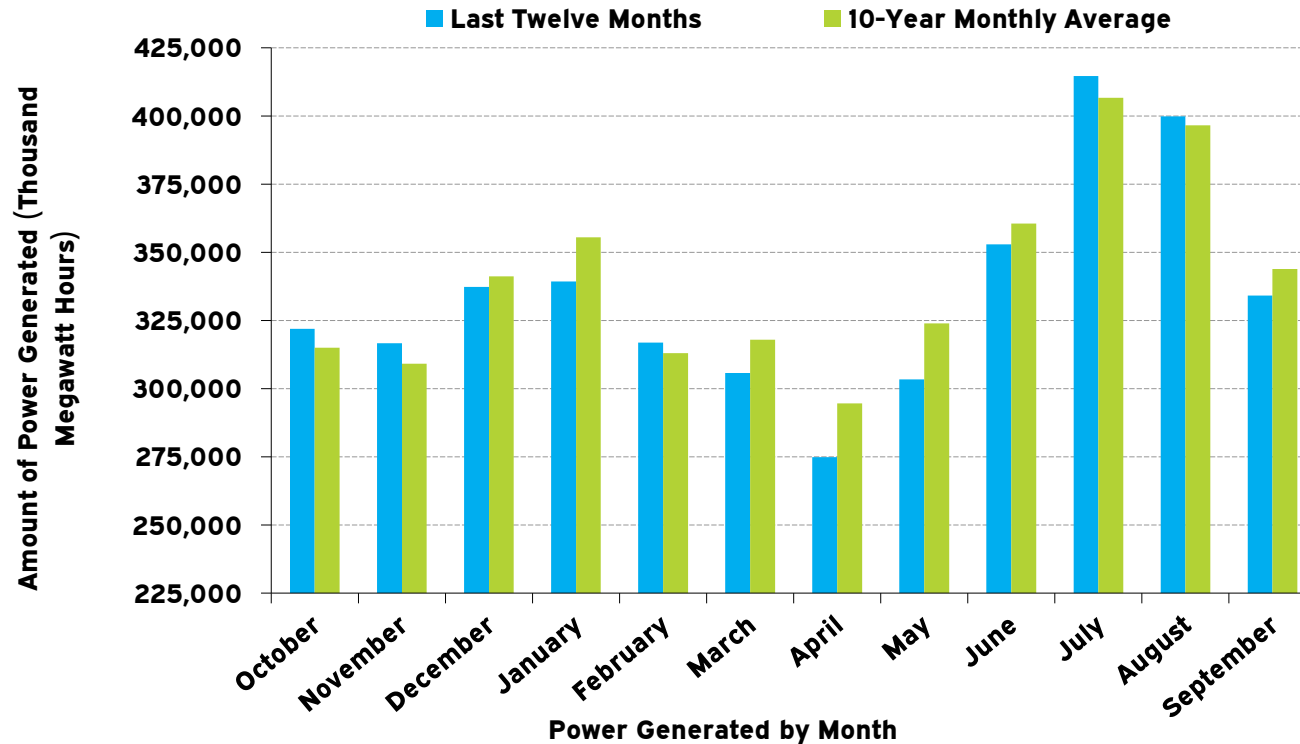


The chart above represents all U.S. domestic and international flights, excluding foreign point-to-point flights by month. Air traffic is cyclical with peaks in the summer months and declines in the winter months.

There were 1.4 million fewer flights during the third quarter of 2020, representing a 51% decrease compared to the same period in 2019. Much of this loss was in July, as air travel became unavailable and less recommended due to the pandemic. Air traffic activity decreased by 32% over the 12 month period ended September 30, 2020 over the previous period. In addition to the number of flights during the third quarter decreasing year-over-year, the total number of passengers travelling on U.S. and international airlines decreased by 46% from 2019 to 2020 with the lowest international travelers since 2003.

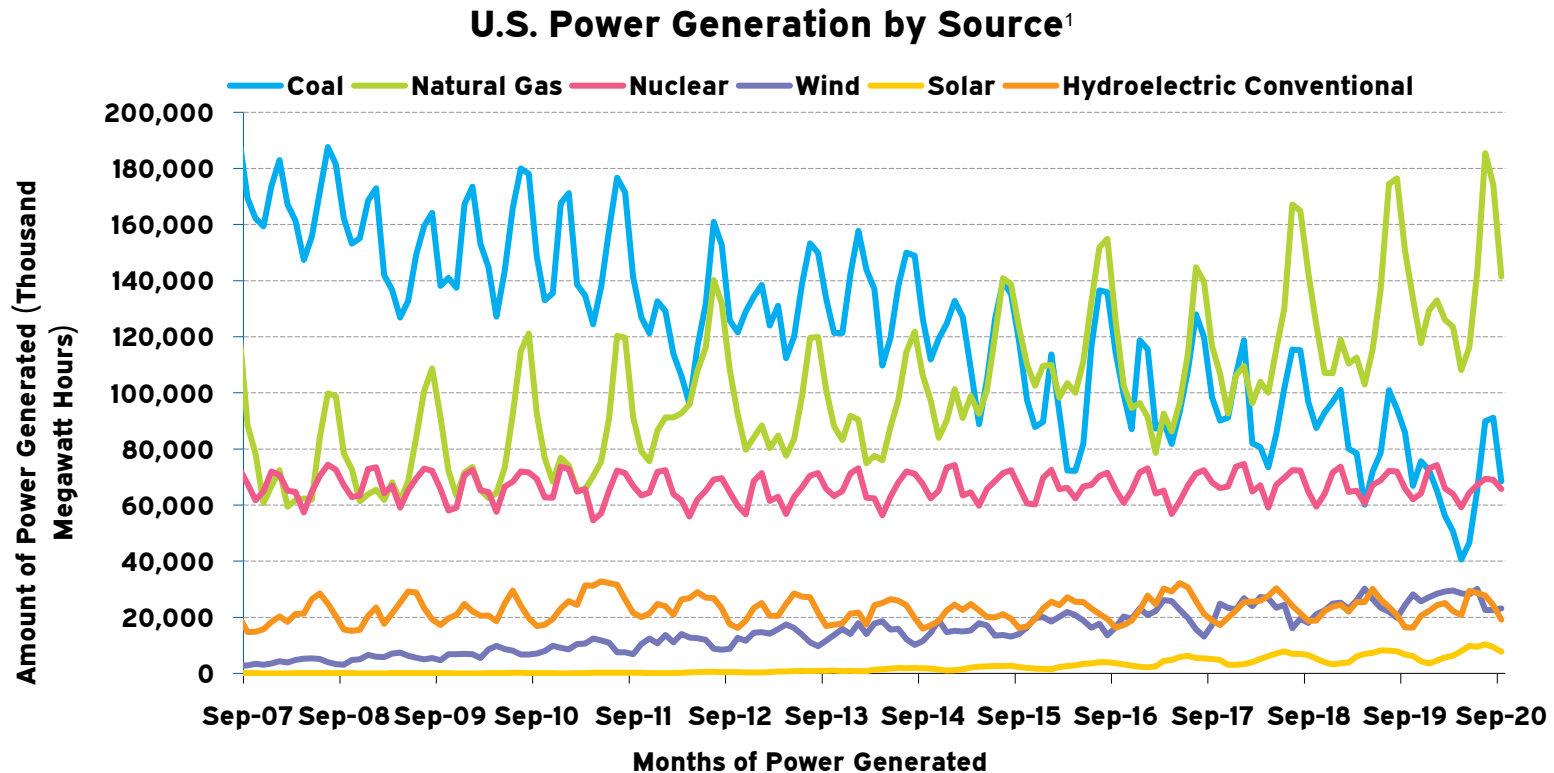
¹ Source: Bureau of Transportation Statistics: Flights, All U.S., and Foreign Carriers.

Total U.S. Power Generation¹



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 was below the 10-year average in 7 out of the 12 months. Net energy generation in the U.S. decreased by 2% during the third quarter, compared to the same period in 2019. For the 12-month period ended September 30, 2020, net energy generation decreased by 2% over the previous 12 months.

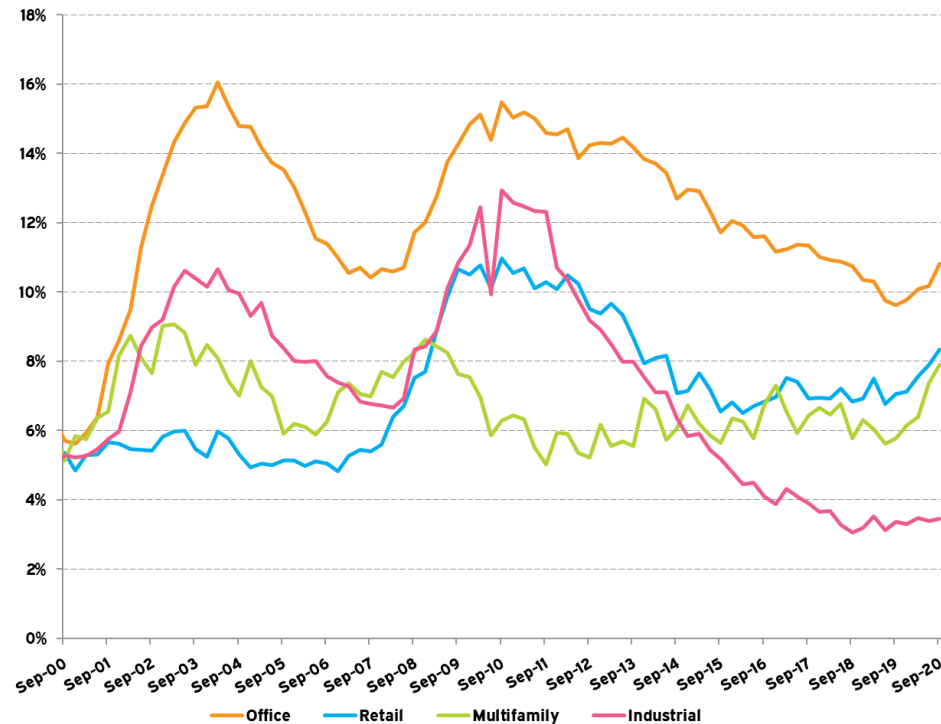
¹ Source: U.S. Energy Information Administration: Electric Power Monthly, September 2020.



As power generation sources in the U.S., hydroelectric conventional, wind, and solar increased 17%, 3%, 21% respectively in the third quarter of 2020 (versus the same period in the previous year), generation from coal, nuclear, and natural gas dropped by 11%, 3%, and 0.1% 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 6% and 2% of energy generation in the third quarter, while coal, natural gas, and nuclear accounted for 22%, 44%, and 18%, 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.

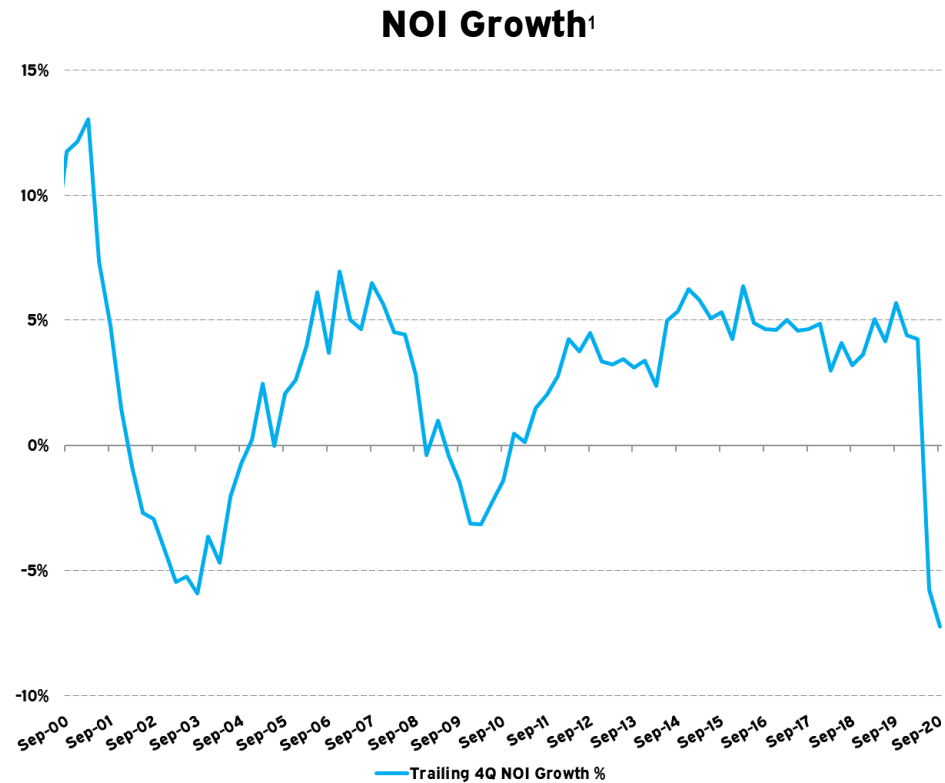
¹ Source: U.S. Energy Information Administration: Electric Power Monthly, September 2020.

Real Estate Fundamentals Vacancy by Property Type¹



In the third quarter of 2020, vacancy rates increased for all property types. Multifamily vacancies have increased significantly in 2020, reaching its highest level since 2009. Retail and office vacancies have also been increasing over the trailing twelve months. 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 increased 214 basis points, office increased 118 basis points, industrial increased 10 basis points, and retail increased 129 basis points. Overall, the vacancy rate across all properties increased 120 basis points from Q3 2019.

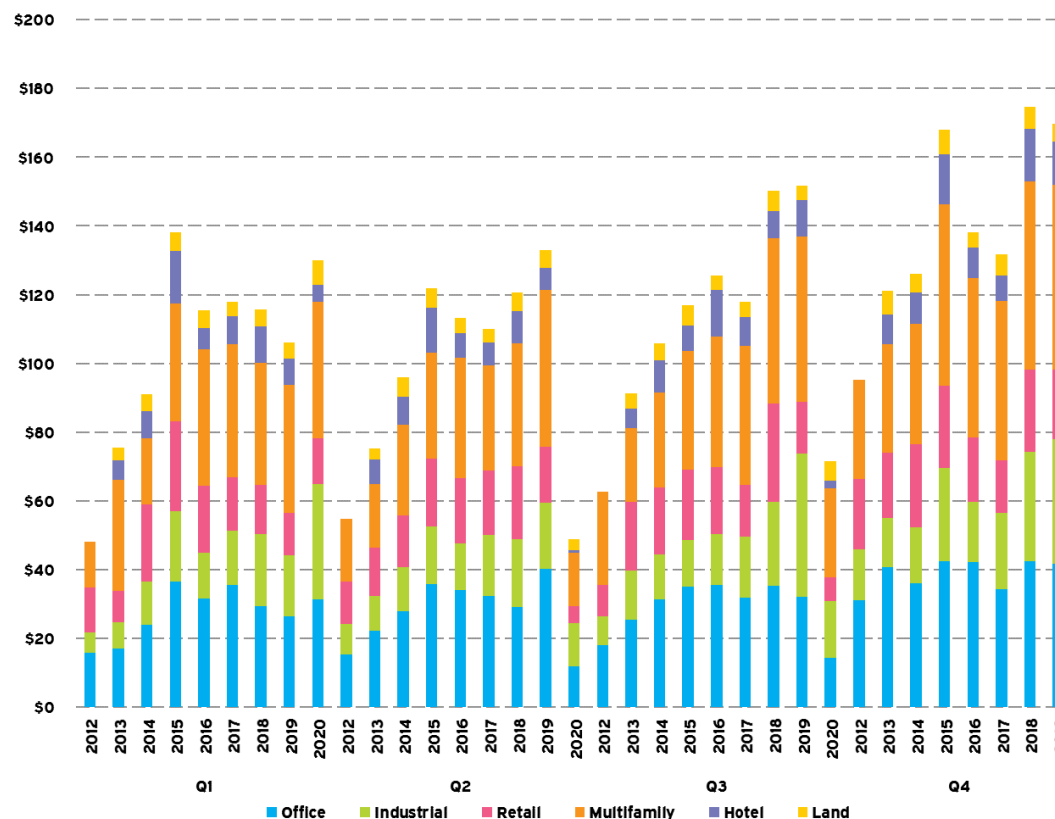
¹ Source: NCREIF



The trailing twelve-month rate of NOI continued to decrease, now down to -7.2% in the third quarter of 2020. The ongoing COVID-19 pandemic has disrupted commercial and multifamily property markets and NOI has been impacted negatively as operating expenses have not been as responsive to the shutdown when compared to revenues. Industrial NOI has remained relatively flat, currently trending at 6.6% for the trailing year ending Q3 2020 (down 100 basis points from a year ago). Office NOI growth continued trending down to 1.7% year-over-year, and Apartment NOI moved down significantly to -10.3%. Retail NOI growth rebounded from the previous quarter, now at -27.0% for the trailing four quarters.

¹ Source: NCREIF

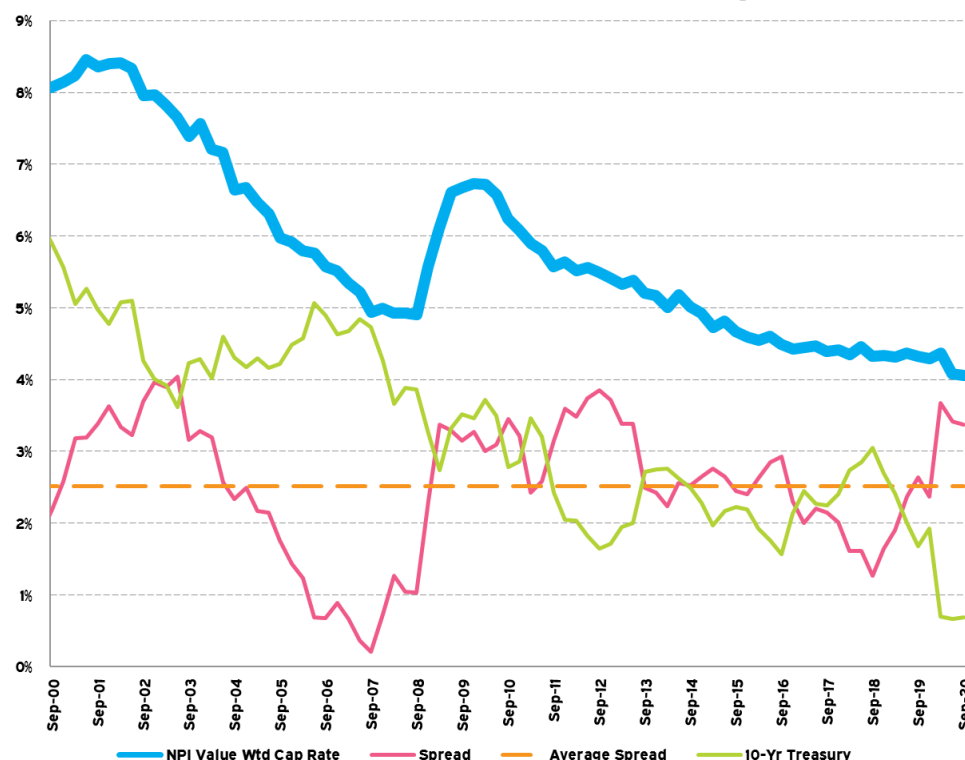
Transaction Volume (\$bn)¹



Private real estate transaction volume for properties valued over \$2.5 million for Q3 2020 was down significantly from Q3 2019 to \$71.5 billion. Compared to a year ago, industrial (-60.3%), multifamily (-46.2%), office (-55.5%), retail (-53.9%), and hotel (-79.2%) experienced a decrease in transaction volume. Multifamily and industrial properties made up the largest percentages of total transaction volume during the quarter, at 53% and 34%, respectively.

¹ Source: PREA

Real Estate Capital Markets Cap Rates vs. 10-Year Treasury¹



The NPI Value Weighted Cap Rate remained flat in Q3 2020 at 4.1%. The 10-year Treasury yield peaked above 3.0% in Q3 2018 and had been on a downward trend and dropped significantly in Q1 2020 down to 0.7%, where it has flattened through Q3 2020. The spread between cap rates and treasury yields increased dramatically in Q1 2020 and now is 337 basis points in Q3 2020, which is 86 basis points above the long-term average spread.

¹ Source: NCREIF and U.S. Department of the Treasury

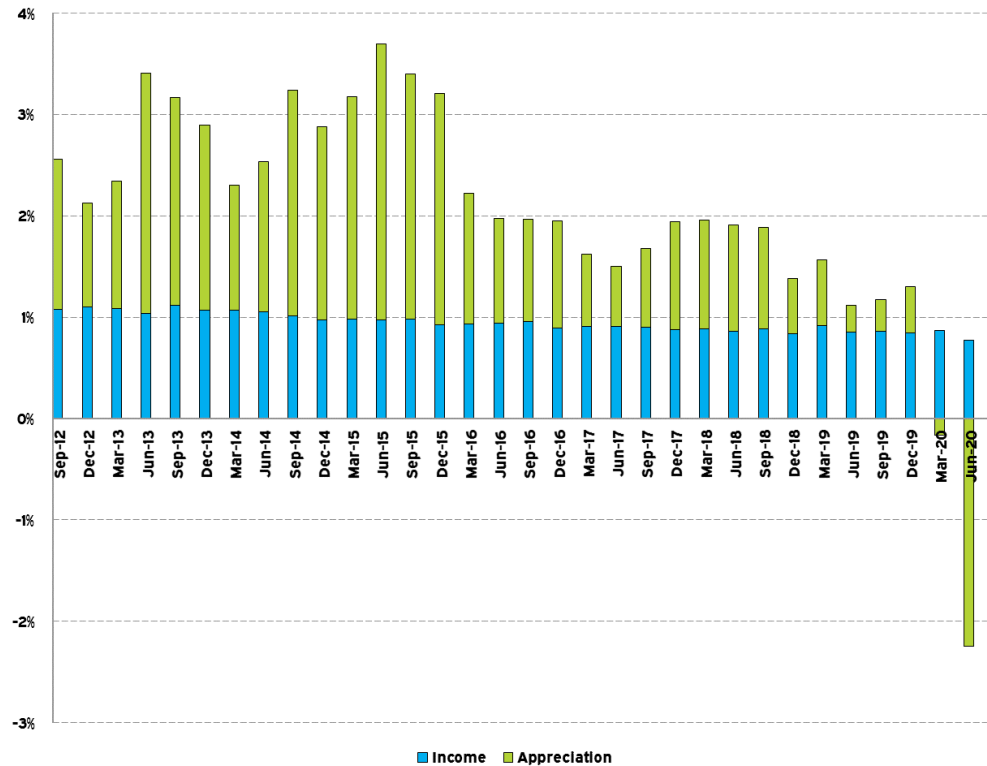
Trailing Period Returns¹

<i>As of September 30, 2020</i>	1 Year	3 Years	5 Years	10 Years
NFI-ODCE (EW, net)	0.9%	4.6%	6.1%	9.4%
NFI-ODCE (VW, net)	0.5	4.3	5.7	9.3
NCREIF Property Index	2.0	5.1	6.3	9.4
NAREIT Equity REIT Index	-12.2	3.4	6.5	9.6

Private real estate indices were positive in Q3 2020 and continue to be positive over the 1-year, 3-year, 5-year, and 10-year time horizons. Public real estate performance in 2020 has been volatile, posting a 1.2% return in Q3 2020, following a 13.3% return in Q2 2020 and -23.4% return in Q1 2020.

¹ Source: NCREIF

ODCE Return Components¹ (Equal Weight, Net)



The NFI-ODCE Equal Weight return for Q3 2020 was slightly positive at 0.4%, recovering slightly from the previous quarter. The income component of the quarterly return remained steady at 0.8%, and appreciation for the quarter was -0.4% due to valuation adjustments driven by impacts of the COVID-19 pandemic.

¹ Source: NCREIF

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

Committed	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.
Contributed	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.
Distributed	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.
DPI	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.
Exposure	Represents the sum of the investor's Unfunded and Remaining Value.
IRR	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 by fund managers to Meketa. Program-level IRRs are net of both fund fees and expenses and fees paid to Meketa attributable to the Program.
NCV	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	<p>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.</p>
Peer Universe	<p>The performance for a set of comparable private market funds. The peer returns 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 universe performance represents the pooled return for a set of funds of corresponding vintages and strategies across all regions globally. Fund-level peer 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. Data sets that include less than five funds display performance as “NM”. Meketa utilizes the following Thomson ONE strategies for peer universes:</p> <p>Infrastructure: Infrastructure</p> <p>Natural Resources: Private Equity Energy, Upstream Energy & Royalties, and Timber</p> <p>Private Debt: Subordinated Capital, Credit Opportunities, Senior Debt, and Control-Oriented Distressed</p> <p>Private Equity (including Private Debt): Venture Capital, Growth Equity, Buyout, Subordinated Capital, Credit Opportunities, Senior Debt, and Control-Oriented Distressed</p> <p>Private Equity (excluding Private Debt): Venture Capital, Growth Equity, and Buyout</p> <p>Real Assets (excluding Real Estate): Infrastructure, Private Equity Energy, Upstream Energy & Royalties, and Timber</p> <p>Real Assets (including Real Estate): Infrastructure, Private Equity Energy, Upstream Energy & Royalties, Timber, and Real Estate</p> <p>Real Estate: Real Estate</p>
Public Market Equivalent (“PME”)	<p>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:</p> <p>Infrastructure: Dow Jones Brookfield Global Infrastructure Index</p> <p>Natural Resources: S&P Global Natural Resources Index</p> <p>Private Debt: Barclays Capital U.S. Corporate High Yield Bond Index</p>

Remaining Value	Private Equity: MSCI ACWI Investable Market Index
	Real Assets (excluding Real Estate): Equal blend of Dow Jones Brookfield Global Infrastructure Index and S&P Global Natural Resources Index
	Real Assets (including Real Estate): Equal blend of Dow Jones Brookfield Global Infrastructure Index, S&P Global Natural Resources Index, and Dow Jones U.S. Select Real Estate Securities Index
	Real Estate: Dow Jones U.S. Select Real Estate Securities Index
TVPI	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.
Unfunded	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. Program-level TVPIs are net of both fund fees and expenses and fees paid to Meketa attributable to the Program.
	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.

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Meketa Investment Group has prepared this report on the basis of sources believed to be reliable. The data are based on matters as they are known as of the date of preparation of the report, and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available.

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.