

San Jose Federated City Employees' Retirement System

Second Quarter 2020

Private Markets Program
PUBLIC

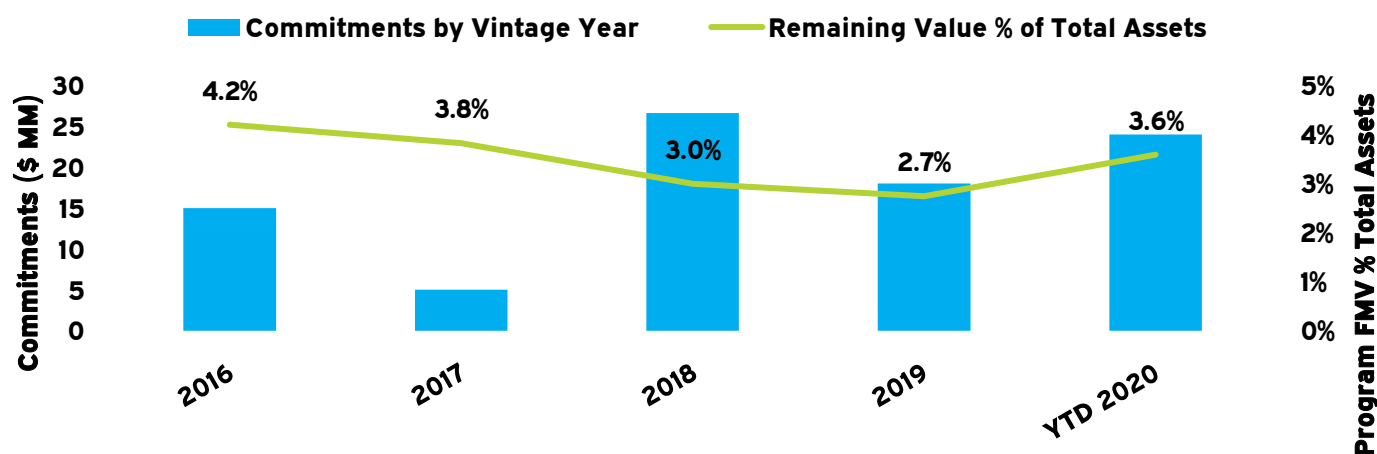
Snapshot

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	152.2	193.0	34.8	1.50	7.5	6.0
NB Fund of One	2017	261.8	14.5	116.9	2.3	131.6	1.14	12.2	4.1
Private Debt	2010	238.6	93.3	238.5	187.2	78.4	1.11	3.8	6.2
Real Estate	2007	206.6	41.5	186.1	148.8	77.2	1.22	5.6	7.7
Real Assets	2016	40.2	16.0	24.8	3.8	21.2	1.01	0.4	0.0
Total		921.5	165.3	718.4	535.1	343.1	1.22	6.1	NA

Introduction

As of June 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 \$78.4 million at June 30, 2020, which equates to 3.6% of the overall Retirement System, versus a 3.0% policy target.



Program Status

No. of Investments	11
Committed (\$ MM)	238.6
Contributed (\$ MM)	238.5
Distributed (\$ MM)	187.2
Remaining Value (\$ MM)	78.4

Performance Since Inception

	Program	Peer Universe
DPI	0.79x	0.57x
TVPI	1.11x	1.23x
IRR	3.8%	7.9%

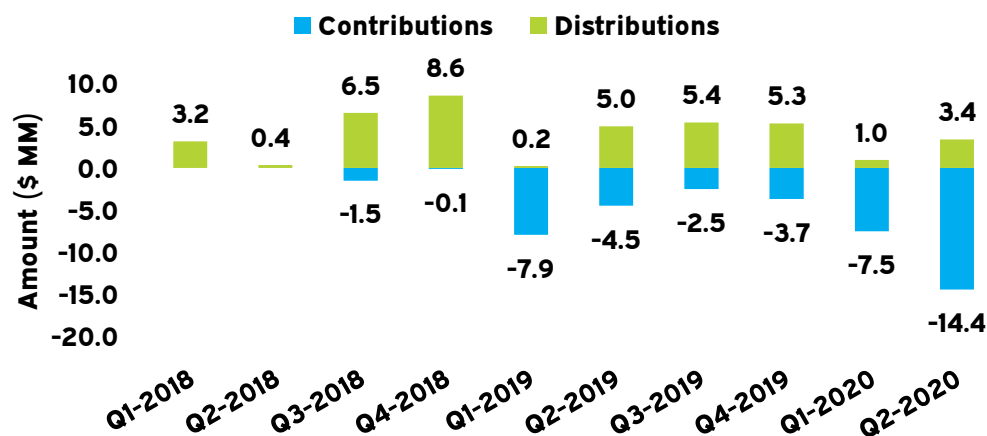
Commitments

Commitments This Quarter

Fund	Region	Amount (\$ MM)
Crestline Fund II	North America	8.00
Eagle Point Income	North America	8.00

Cash Flows

Recent Quarterly Cash Flows



Largest Contributions This Quarter

Fund	Vintage	Region	Amount (\$ MM)
Arbour Lane II	2020	Global: All	5.30
Cross Ocean ESS III	2019	Western Europe	4.22
Octagon CLO III	2018	North America	2.50

Largest Distributions This Quarter

Fund	Vintage	Region	Amount (\$ MM)
Medley II	2010	North America	1.38
Cross Ocean ESS III	2019	Western Europe	0.68
Arbour Lane II	2020	Global: All	0.55

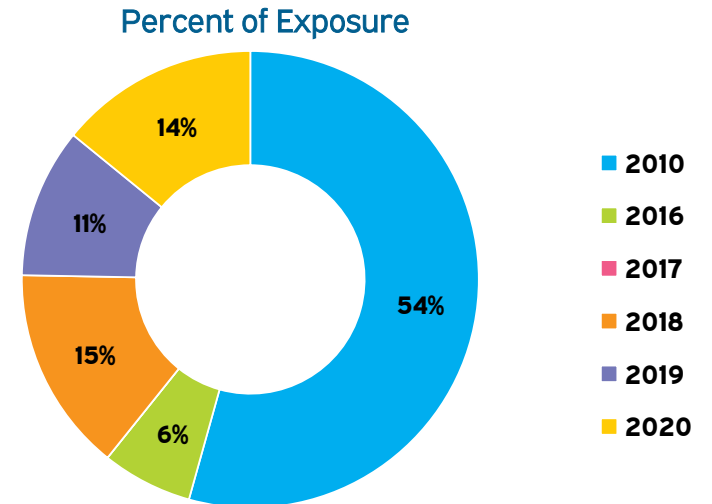
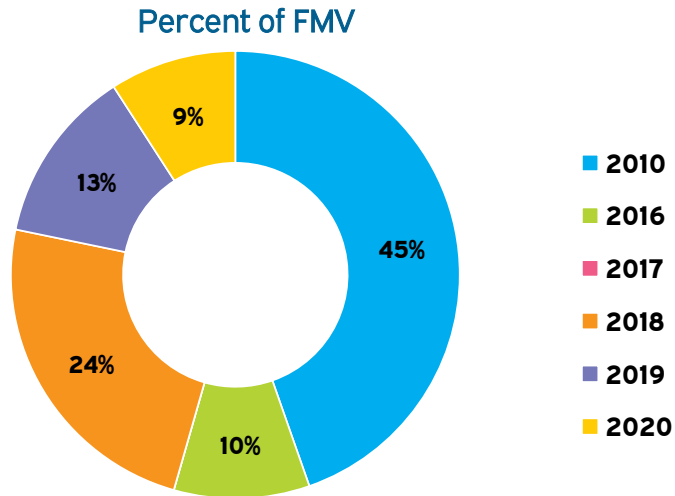
By Vintage

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	172.2	35.0	93.3	0.94	1.13	3.7	10.6
2016	1	15.0	12.0	3.4	6.4	7.7	11.0	0.53	1.17	6.6	8.0
2017	1	5.0	5.0	0.0	6.1	0.0	0.0	1.22	1.22	12.9	7.9
2018	2	26.6	20.3	6.3	1.3	18.7	25.0	0.06	0.98	NM	NM
2019	1	18.0	10.4	8.3	0.7	9.9	18.2	0.07	1.02	NM	NM
2020	3	24.0	7.7	17.1	0.6	7.1	24.2	0.07	1.00	NM	NM
Total	11	238.6	238.5	93.3	187.2	78.4	171.6	0.79	1.11	3.8	7.9

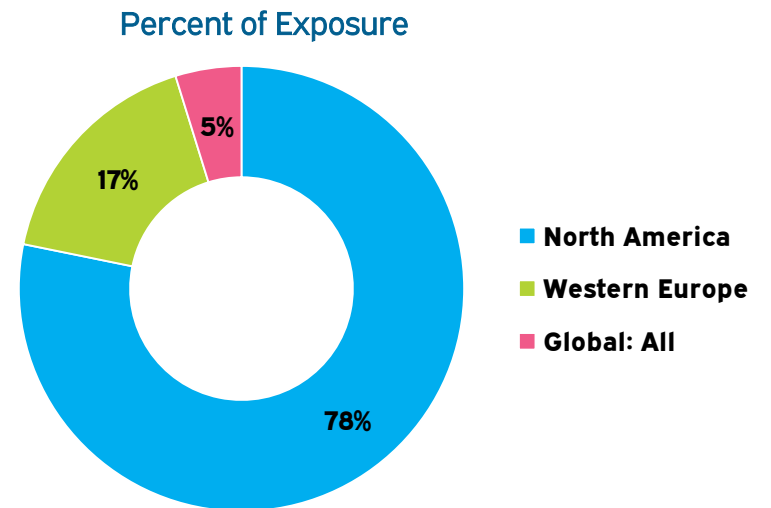
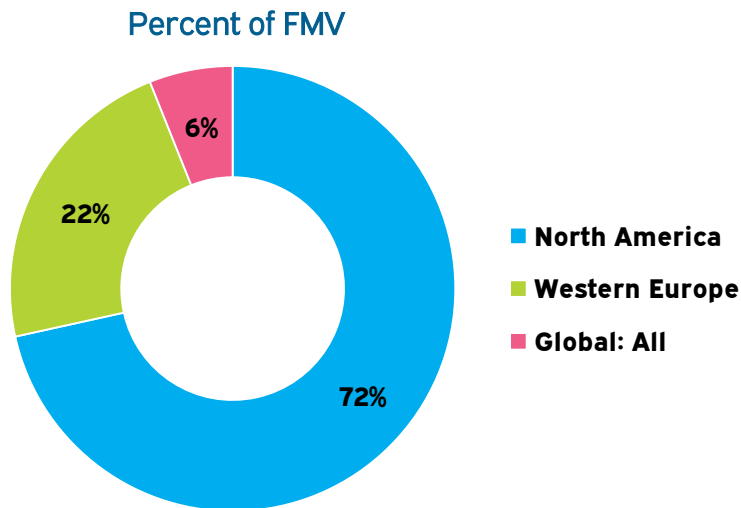
Fund Performance: Sorted By Vintage

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	4.2	1.14	1.38	4.7	10.6
Medley II	2010	50.0	51.7	1.7	44.9	14.1	1.14	1.38	2.7	10.6
White Oak DL	2010	50.0	88.3	27.3	82.3	16.7	1.12	1.38	4.3	10.6
Cross Ocean ESS II	2016	15.0	12.0	3.4	6.4	7.7	1.17	1.12	6.6	8.0
ArrowMark Sep Acct	2017	5.0	5.0	0.0	6.1	0.0	1.22	1.12	12.9	7.9
Crestline Co-Invest	2018	1.6	1.6	0.0	0.0	1.8	1.18	1.08	NM	NM
Octagon CLO III	2018	25.0	18.8	6.3	1.2	16.9	0.96	1.08	NM	NM
Cross Ocean ESS III	2019	18.0	10.4	8.3	0.7	9.9	1.02	1.03	NM	NM
Arbour Lane II	2020	8.0	5.3	3.5	0.6	4.7	1.00	NM	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	2.4	5.6	0.0	2.4	1.00	NM	NM	NM
Total		238.6	238.5	93.3	187.2	78.4	1.11	1.23	3.8	7.9

By Vintage

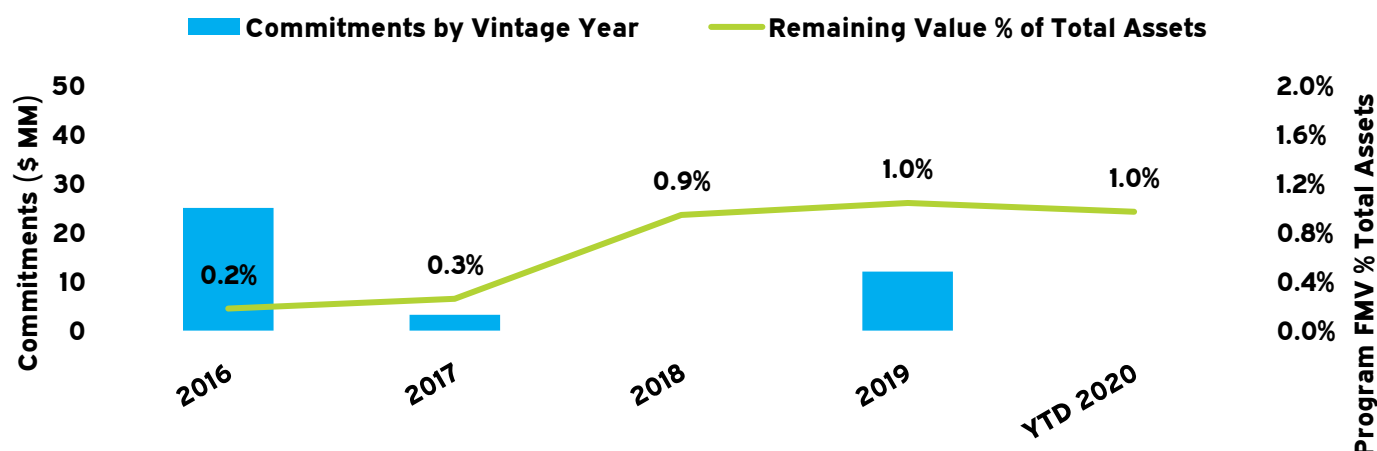


By Geographic Focus



Introduction

As of June 30, 2020, the System had committed \$40.2 million to five real assets funds. The total reported fair value of real assets investments was \$21.2 million at June 30, 2020, which equates to 1.0% of the overall Retirement System, versus a 3.0% policy target.



Program Status

No. of Investments	5
Committed (\$ MM)	40.2
Contributed (\$ MM)	24.8
Distributed (\$ MM)	3.8
Remaining Value (\$ MM)	21.2

Performance Since Inception

	Program	Peer Universe
DPI	0.15x	0.10x
TVPI	1.01x	1.05x
IRR	0.4%	3.4%

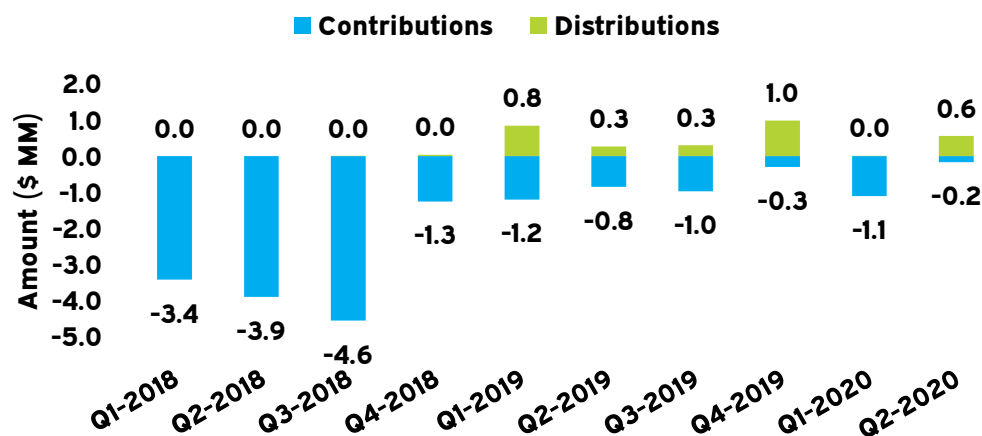
Commitments

Commitments This Quarter

Fund	Region	Amount (\$ MM)
Lime Rock New Energy	Global: All	5.00

Cash Flows

Recent Quarterly Cash Flows



Largest Contributions This Quarter

Fund	Vintage	Region	Amount (\$ MM)
GIP III	2016	Global: Developed	0.11
Kimmeridge Energy V	2019	North America	0.03
Lime Rock VIII	2017	North America	0.01

Largest Distributions This Quarter

Fund	Vintage	Region	Amount (\$ MM)
GIP III	2016	Global: Developed	0.49
Kimmeridge Energy V	2019	North America	0.04
Lime Rock VIII	2017	North America	0.02

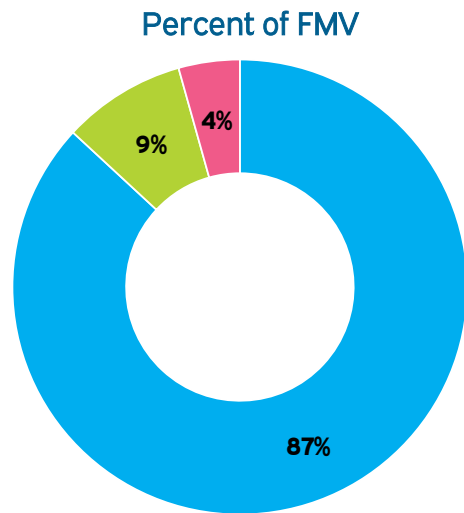
By Vintage

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	21.2	4.2	3.7	18.4	22.6	0.18	1.04	1.9	3.9
2017	1	3.2	2.3	1.0	0.0	1.9	2.8	0.01	0.81	NM	NM
2019	3	12.0	1.2	10.8	0.0	0.9	11.7	0.03	0.78	NM	NM
Total	5	40.2	24.8	16.0	3.8	21.2	37.1	0.15	1.01	0.4	3.4

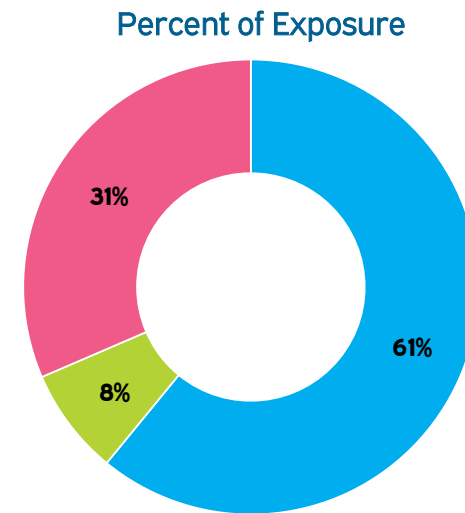
Fund Performance: Sorted By Vintage And Strategy

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	21.2	4.2	3.7	18.4	1.04	1.08	1.9	3.9
Lime Rock VIII	2017	3.2	2.3	1.0	0.0	1.9	0.81	0.96	NM	NM
Kimmeridge Energy V	2019	3.8	1.1	2.6	0.0	0.9	0.84	1.01	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	0.0	5.0	0.0	0.0	NM	NM	NM	NM
Total		40.2	24.8	16.0	3.8	21.2	1.01	1.05	0.4	3.4

By Vintage

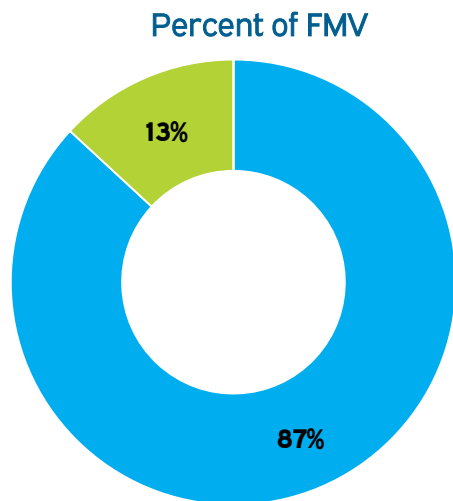


■ 2016
■ 2017
■ 2019

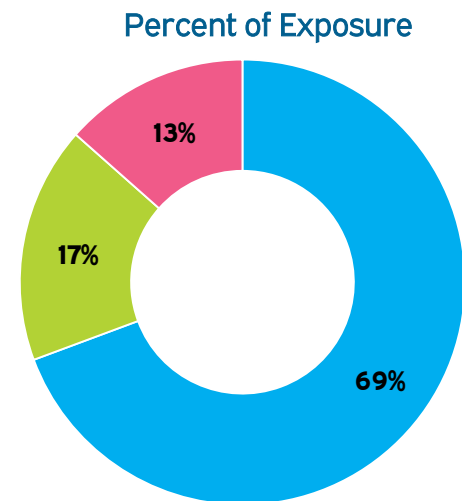


■ 2016
■ 2017
■ 2019

By Geographic Focus



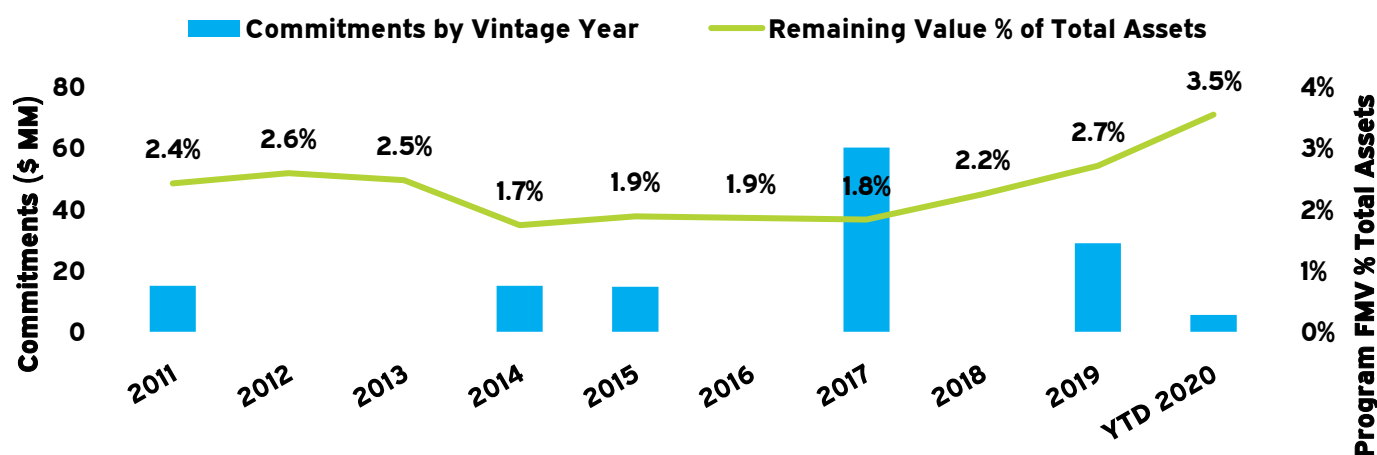
■ Global: Developed
■ North America
■ Global: All



■ Global: Developed
■ North America
■ Global: All

Introduction

As of June 30, 2020, the Retirement System had committed a total of \$206.6 million to 14 closed-end real estate funds. The Real Estate Program's reported fair value of real estate investments was \$77.2 million at June 30, 2020, which equates to 3.5% of the overall Retirement System, versus a 3.0% policy target.



Program Status

No. of Investments	14
Committed (\$ MM)	206.6
Contributed (\$ MM)	186.1
Distributed (\$ MM)	148.8
Remaining Value (\$ MM)	77.2

Performance Since Inception

	Program	Peer Universe
DPI	0.80x	0.82x
TVPI	1.22x	1.19x
IRR	5.6%	4.4%

Commitments

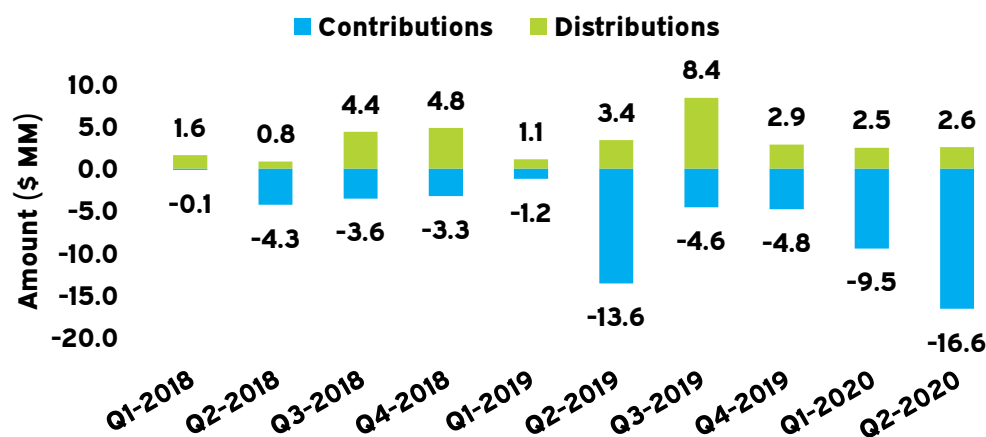
Commitments This Quarter

Fund	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)
Torchlight VI	2017	North America	13.50
EPISO 4	2015	Western Europe	1.07
Rockpoint VI	2019	North America	1.06

Largest Distributions This Quarter

Fund	Vintage	Region	Amount (\$ MM)
EPISO 4	2015	Western Europe	1.77
DRA IX	2017	North America	0.55
DRA VII	2011	North America	0.15

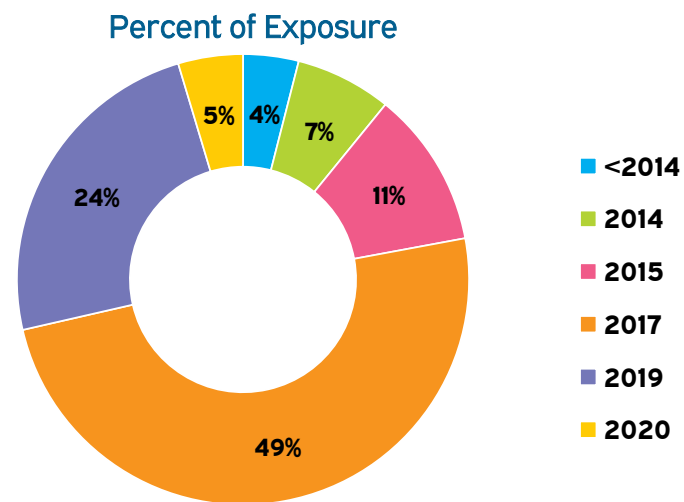
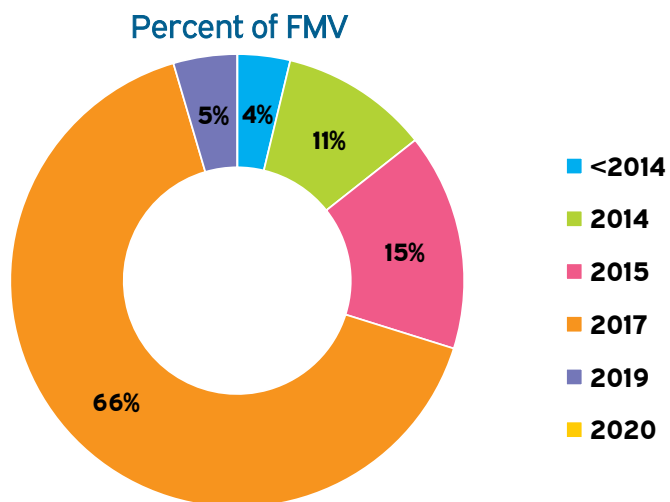
By Vintage

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	0.0
2007	2	27.6	28.4	0.0	40.7	0.4	0.4	1.43	1.45	8.8	2.8
2011	1	15.0	16.3	0.0	32.5	2.5	2.5	1.99	2.14	21.0	11.5
2014	1	15.0	18.2	0.0	13.5	8.2	8.2	0.74	1.19	6.7	10.8
2015	1	14.7	13.3	1.4	3.4	12.0	13.3	0.25	1.15	6.7	9.3
2017	3	60.0	57.2	7.8	9.5	50.7	58.5	0.17	1.05	5.9	9.3
2019	3	28.9	3.9	25.0	0.0	3.5	28.5	0.01	0.91	NM	NM
2020	1	5.5	0.0	5.5	0.0	0.0	5.5	0.00	NM	NM	NM
Total	14	206.6	186.1	41.5	148.8	77.2	118.7	0.80	1.22	5.6	4.4

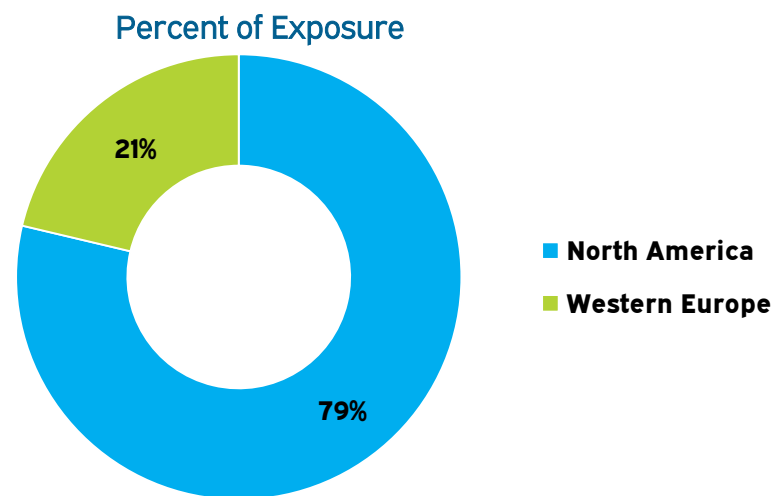
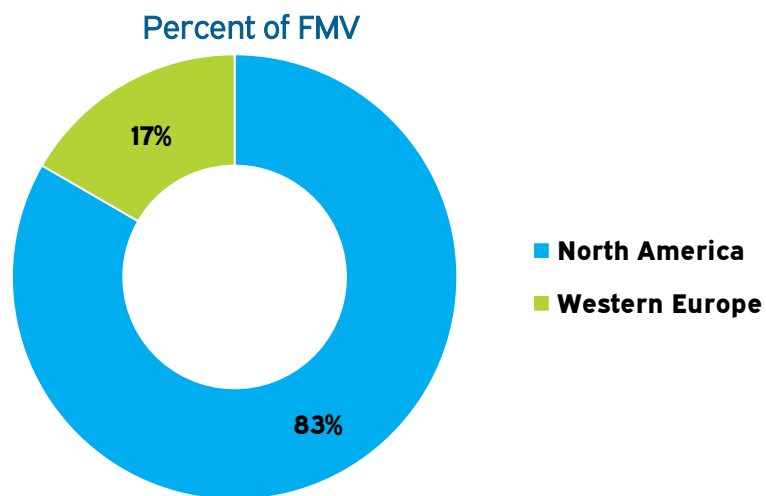
Fund Performance: Sorted By Vintage And Strategy

By Investment	Vintage	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
DRA V	2005	20.0	30.5	0.0	40.3	0.0	1.32	NM	5.3	0.4
GEAM Value Add	2006	20.0	18.2	1.8	8.8	0.0	0.48	1.38	-10.9	0.0
DRA VI	2007	9.7	10.6	0.0	17.0	0.4	1.65	1.62	10.6	2.8
Fidelity RE III	2007	17.9	17.9	0.0	23.7	0.0	1.33	1.62	7.3	2.8
DRA VII	2011	15.0	16.3	0.0	32.5	2.5	2.14	NM	21.0	11.5
DRA VIII	2014	15.0	18.2	0.0	13.5	8.2	1.19	1.25	6.7	10.8
EPISO 4	2015	14.7	13.3	1.4	3.4	12.0	1.15	1.18	6.7	9.3
Torchlight VI	2017	30.0	33.2	0.0	3.0	29.7	0.99	1.17	-2.7	9.3
GEM VI	2017	10.0	4.0	6.1	0.6	3.2	0.96	1.17	-5.0	9.3
DRA IX	2017	20.0	20.1	1.8	5.9	17.8	1.18	1.17	11.5	9.3
Rockpoint VI	2019	6.5	1.1	5.4	0.0	1.0	0.98	0.98	NM	NM
DRA X	2019	10.0	1.6	8.4	0.0	1.6	1.04	0.98	NM	NM
EPISO 5	2019	12.4	1.3	11.1	0.0	0.9	0.70	0.98	NM	NM
Exeter V	2020	5.5	0.0	5.5	0.0	0.0	NM	NM	NM	NM
Total		206.6	186.1	41.5	148.8	77.2	1.22	NM	5.6	4.4

By Vintage



By Geographic Focus

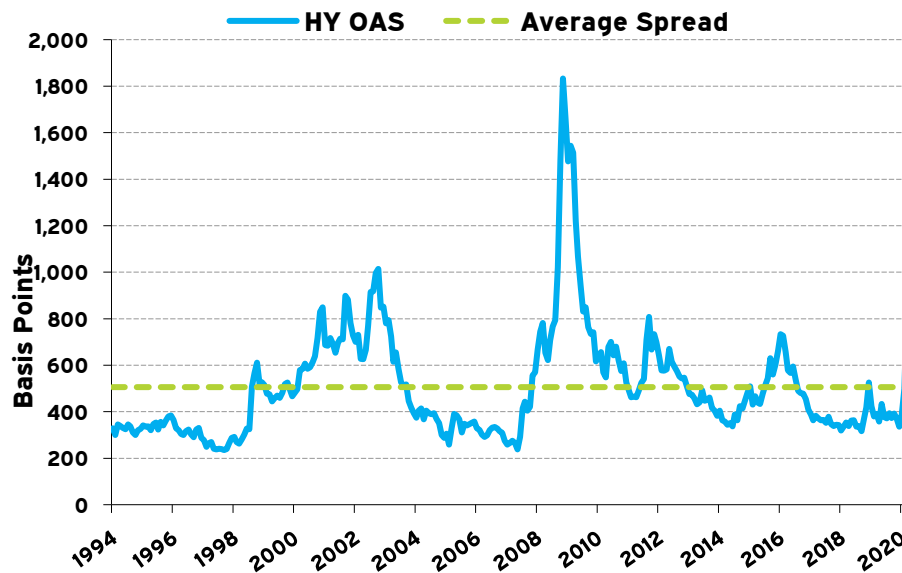


Private Debt

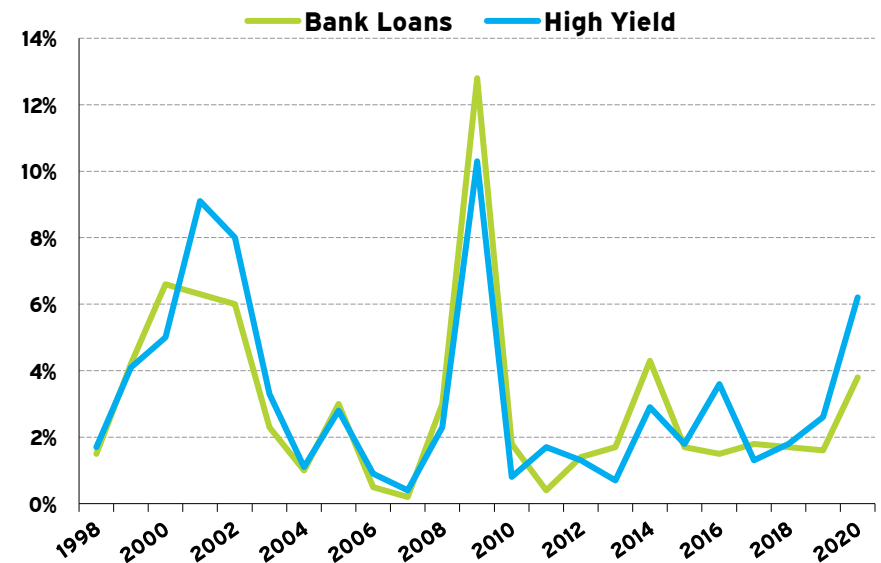
The beginning of second quarter marked a sharp reversal from the first quarter in credit markets as investors began to digest new stimulus and credit markets support programs announced by the Federal Reserve at the end of March. These programs were further clarified during April and began implementation in earnest in May, which fueled the recovery in the higher rated corporate bonds and structured credit markets.

High yield bond spreads, which ended March at 880 basis points, compressed each month during the quarter to finish June at 626 basis points. The average price of the index recovered from \$85.70 to \$95.89. Default rates in high yield bonds and bank loans shot up to 6.2% and 3.6%, respectively, from sub-3% levels in both asset classes for the prior three years. Outside of corporate credit markets, many areas were slower to stabilize, particularly in certain structured products segments such as commercial real estate and junior tranches of mortgage securitizations. Price discovery continued in these markets as investors sought to assess the long-term impacts of COVID-19.

U.S. Corporate High Yield Spread¹



U.S. Corporate Default Rate²



¹ Source: Barclays Capital

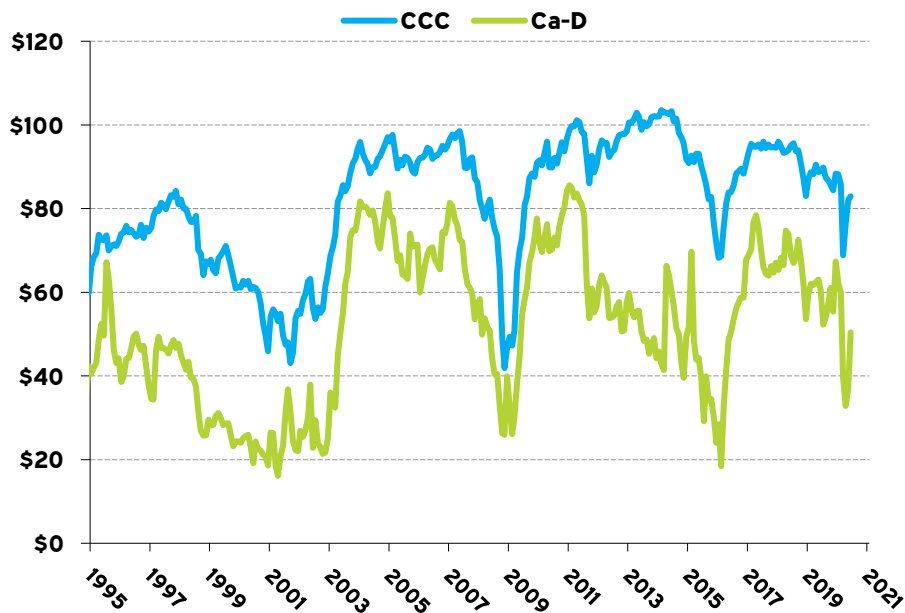
² Source: JP Morgan

Distressed & Opportunistic Debt

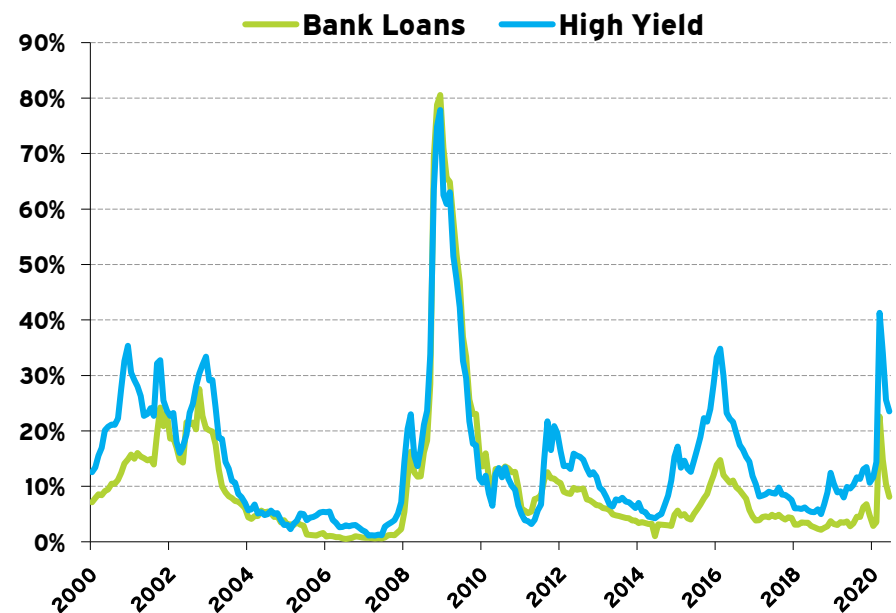
With the primary credit markets largely closed during March and April, opportunities for distressed and opportunistic investors began to emerge. Borrowers that required capital to make interest payments, meet margin requirements or refinance looming maturities did so at high interest rates often with the additional burden make-whole provisions or minimum return requirements to lenders. Bankruptcies and distressed exchanges during the second quarter were the highest quarter on record, surpassing the first quarter of 2009 with more than \$82 billion in total volume. Year-to-date there has now been more than \$100 billion in defaulted debt which makes 2020 already the second highest annual default total.

Pricing in the lowest rated debt segments recovered during the second quarter, however distressed ratios remain elevated. Energy continues to be the industry with the highest default rate and distressed ratio with more than \$50 billion of bonds trading at distressed levels or 26% of the total distressed debt volume. Health care (10%), services (9%) industrials (8%) are the next most distressed industries.

Lower Rated Debt Pricing¹



Distressed Ratio²



¹ Source: Barclays Capital

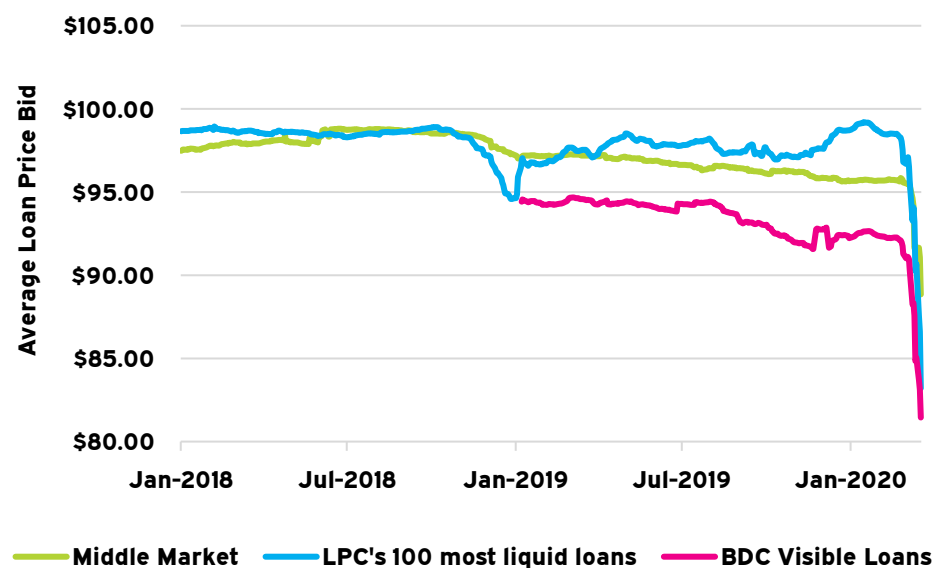
² Source: Bank Loans trading below \$80, Credit Suisse; High Yield trading at spread of more than 1,000bps, Deutsche Bank.

Private Senior & Subordinated Debt

New private debt issuance slowed materially in the second quarter as corporate transactions slowed and lenders exercised caution. Corporate direct lending volumes were halved from first quarter levels and middle market LBO activity was essentially zero. Lenders spent the quarter working to assess their portfolios and borrowers' liquidity. In some instances, private equity sponsors and non-sponsored owners quickly handed the keys to lenders, but in most cases lenders and management worked to amend loan documents and inject liquidity to stave off restructurings.

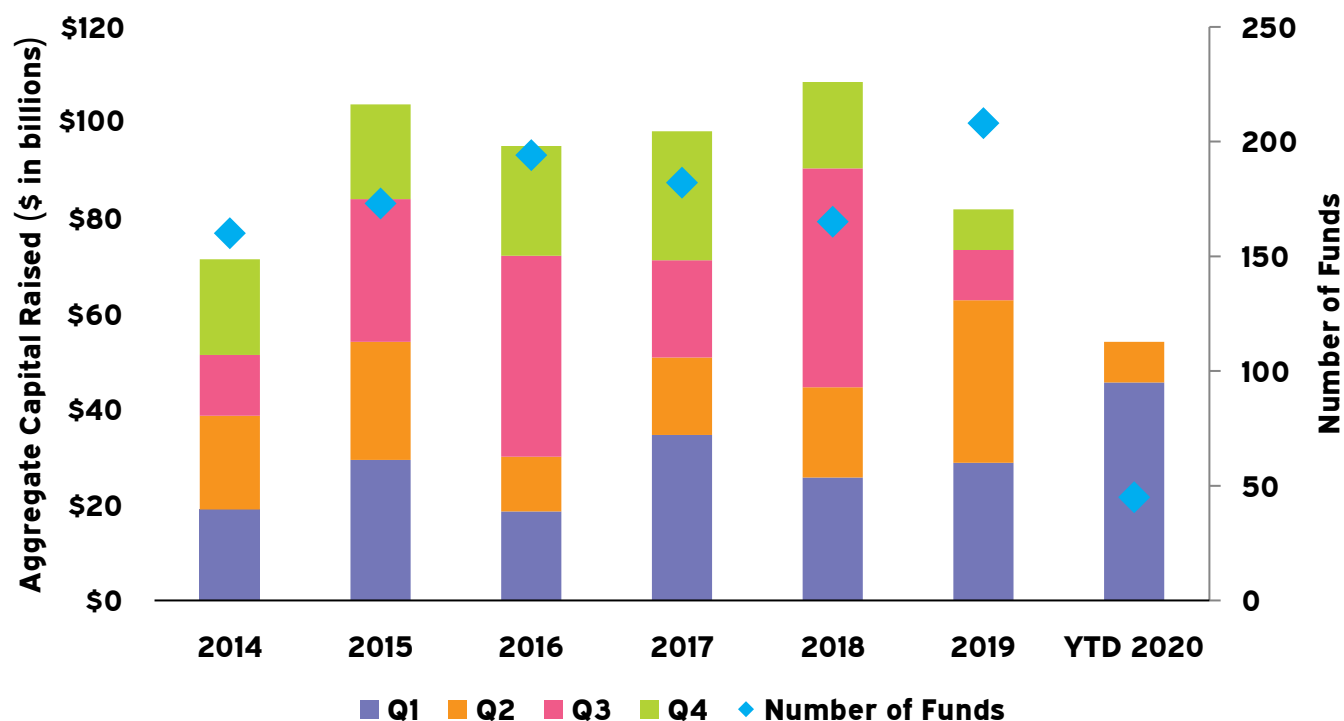
Secondary pricing in the middle market loans did not recover with the larger syndicated loan market. This may be an indication of capital markets' expectations that smaller companies may struggle more than larger more diverse companies as a result of COVID-19.

Senior Loan Secondary Market Pricing¹



¹ Source: Refinitiv LPC

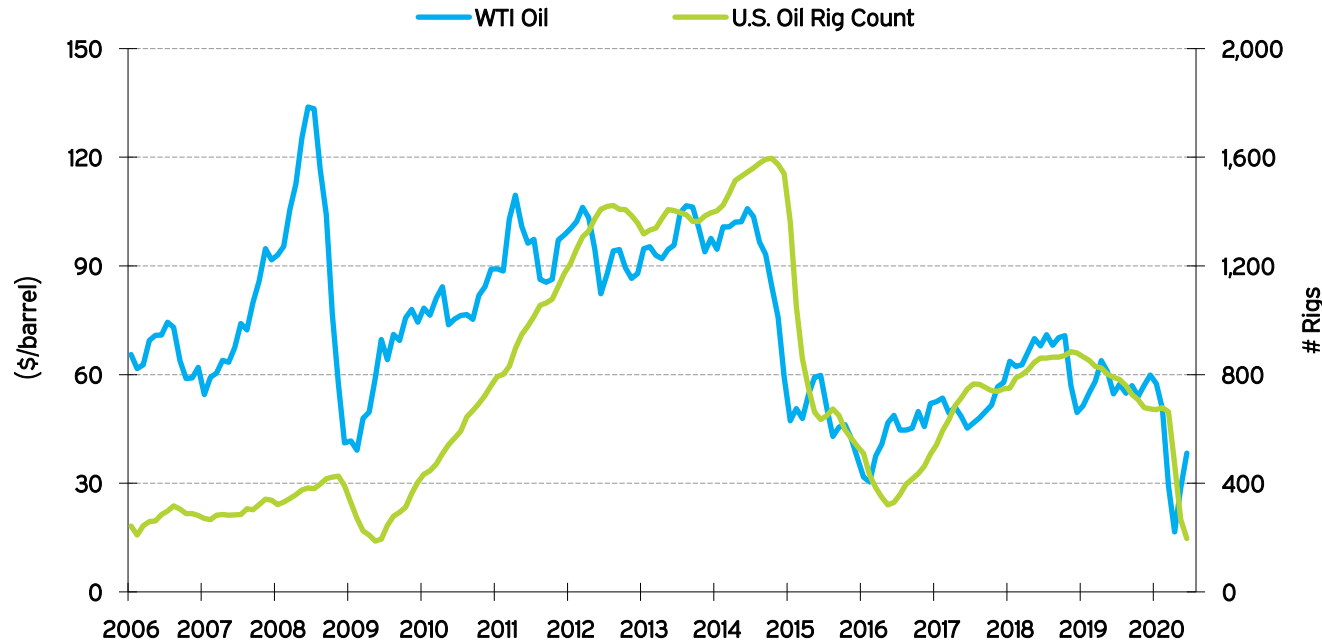
Global Quarterly Unlisted Natural Resource Fundraising¹



Fundraising momentum slowed in the second quarter of 2020, with \$9 billion in commitments compared to over \$40 billion in the first quarter. The number of funds decreased from the average per quarter in 2019 with just 15 funds, but the average fund size increased from just under \$1 billion in 2019 to \$0.5 billion during the second quarter of 2020. As of June 30, 2020, Preqin reported a total of 322 unlisted natural resources funds with a combined fundraising target of approximately \$190 billion. The majority of natural resources managers fundraising during the second quarter were focused on North America, accounting for approximately 44% of cumulative targeted capitalization in the market.

¹ Source: Preqin Private Capital Fundraising Update, Q2 2020.

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

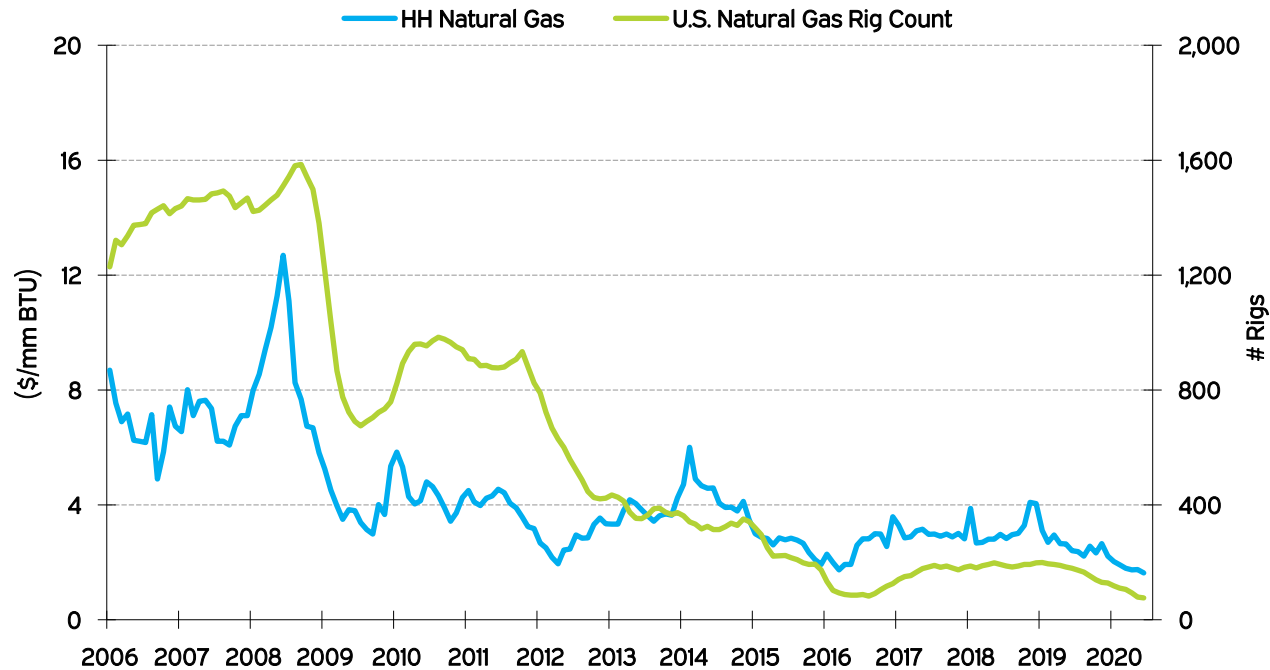


The confluence of decreased oil demand from travel restrictions and work-from-home policies stemming from the global pandemic, Russia and Saudi Arabia supply disagreements, and strong U.S. production contributed to historic volatility for oil prices during the quarter. Front-month oil price contracts briefly reached -\$40 a barrel in April but subsequently rebounded. Relative to the prior quarter, West Texas Intermediate oil prices increased by 31% to \$38 per barrel, while Brent prices increased 26% to \$40 per barrel. With lower prices, oil and gas companies temporarily shut-in production and reduced capex spending; however, many resumed production by the end of the quarter. The U.S. oil rig count fell by 663 to 196 during the quarter as companies curtailed capex spending. U.S. gasoline prices for regular blend decreased to \$2.26 during the second quarter, representing an 8% quarterly decrease and 24% decline from one year prior.

¹ Source: EIA and Baker Hughes.

Extracted Resources

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

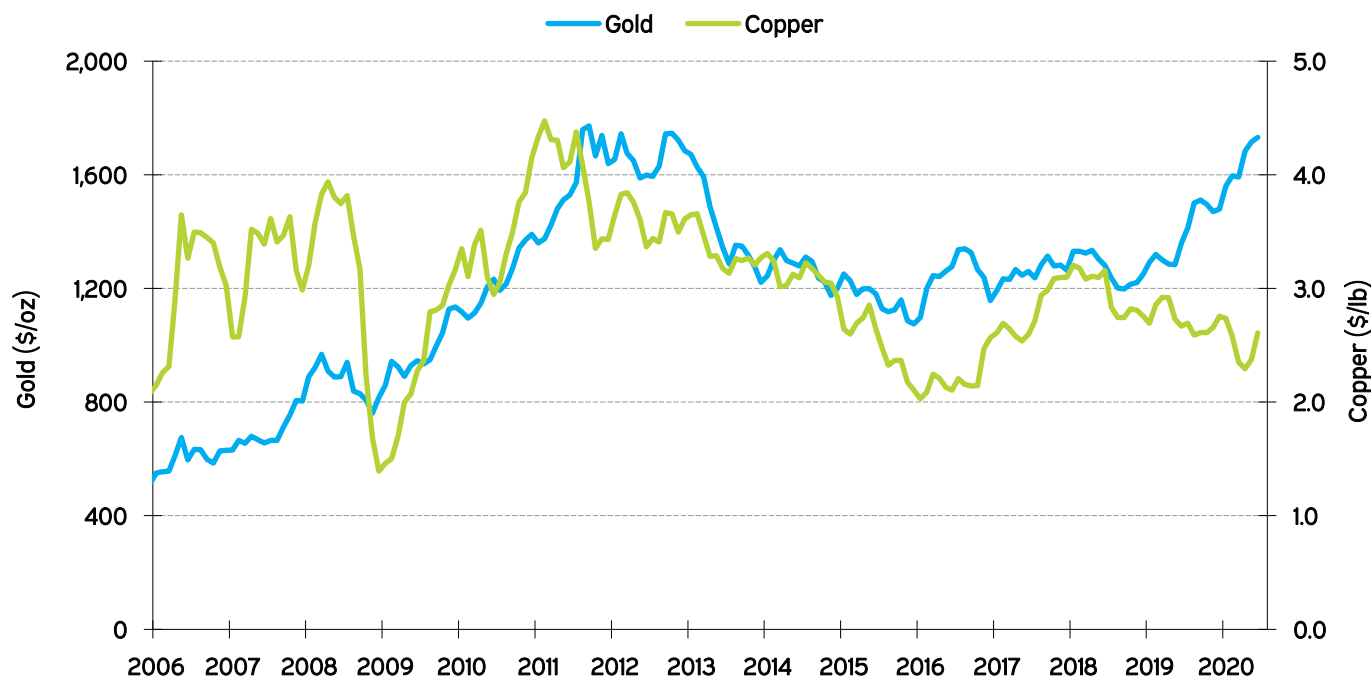


Henry Hub natural gas spot prices ended the quarter at approximately \$1.63/MM BTU, representing a 9% decrease relative to the prior quarter and a 32% decrease from one year prior. During the quarter, the U.S. natural gas rig count fell by 30 to 76. Total U.S. natural gas production averaged almost 98 billion cubic feet per day ("bcf/d"), a slight decrease from 103 bcf/d from the prior quarter.

¹ Source: EIA and Baker Hughes.

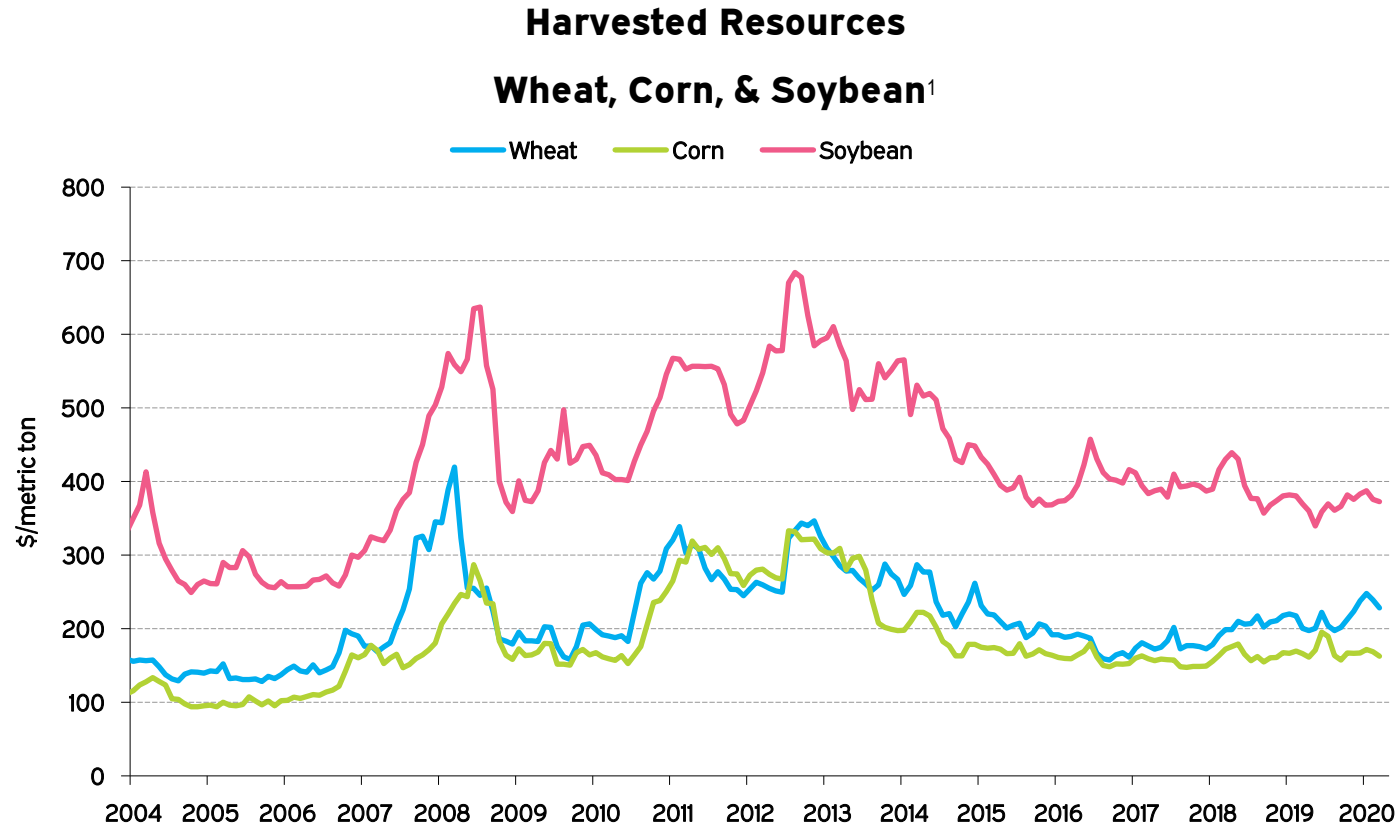
Extracted Resources

Metals Prices



Despite a rebound in the public equity markets in the second quarter, safe haven assets such as precious metals performed well. The price of gold continued its multi-year increase and finished the quarter at approximately \$1,732 per ounce, representing a 9% quarterly increase and 27% increase from one year prior. During the quarter, silver prices increased by 19% to \$17 per ounce. Copper prices increased by 11% during the quarter to \$2.61 per ounce and was largely driven by strong demand from China as its economy restarted.

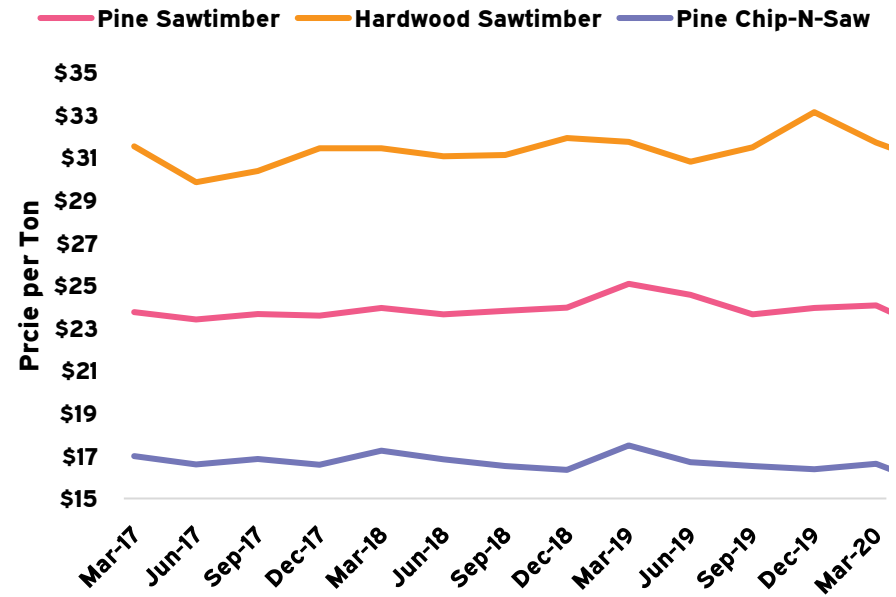
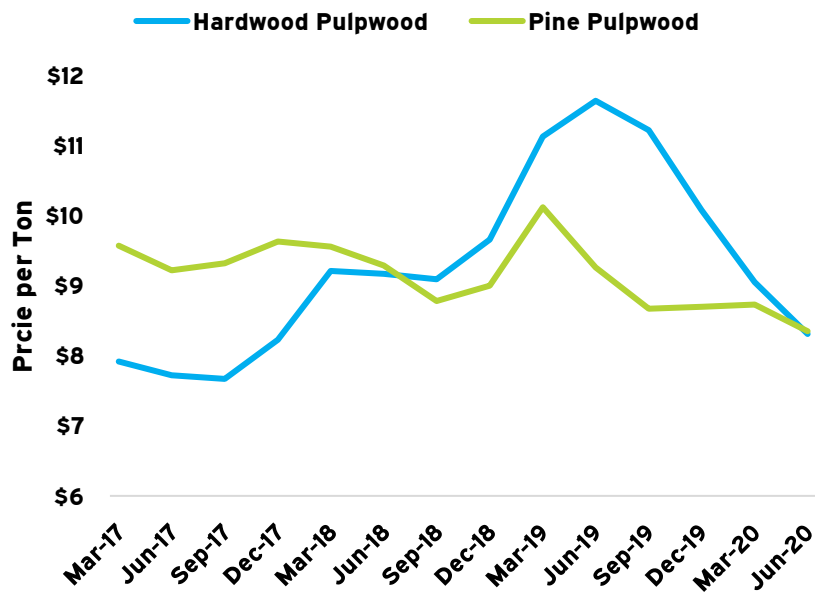
¹ Source: World Bank



U.S. grain prices have been under pressure for several years as the Chinese government curtailed purchases from U.S. farmers as a result of trade tensions and tariffs. A trade agreement between the U.S. and China reached in early 2020 provided hope for increased purchases. To date, China's purchases have increased; however, the amounts and trajectory are not currently expected to reach targeted amounts by year-end. During the quarter, wheat, corn, and soybean prices fell by 12%, 9%, and 1%, respectively. During the second quarter, the NCREIF Farmland index increased by 0.6% primarily driven by income returns of 0.6%.

¹ Source: World Bank

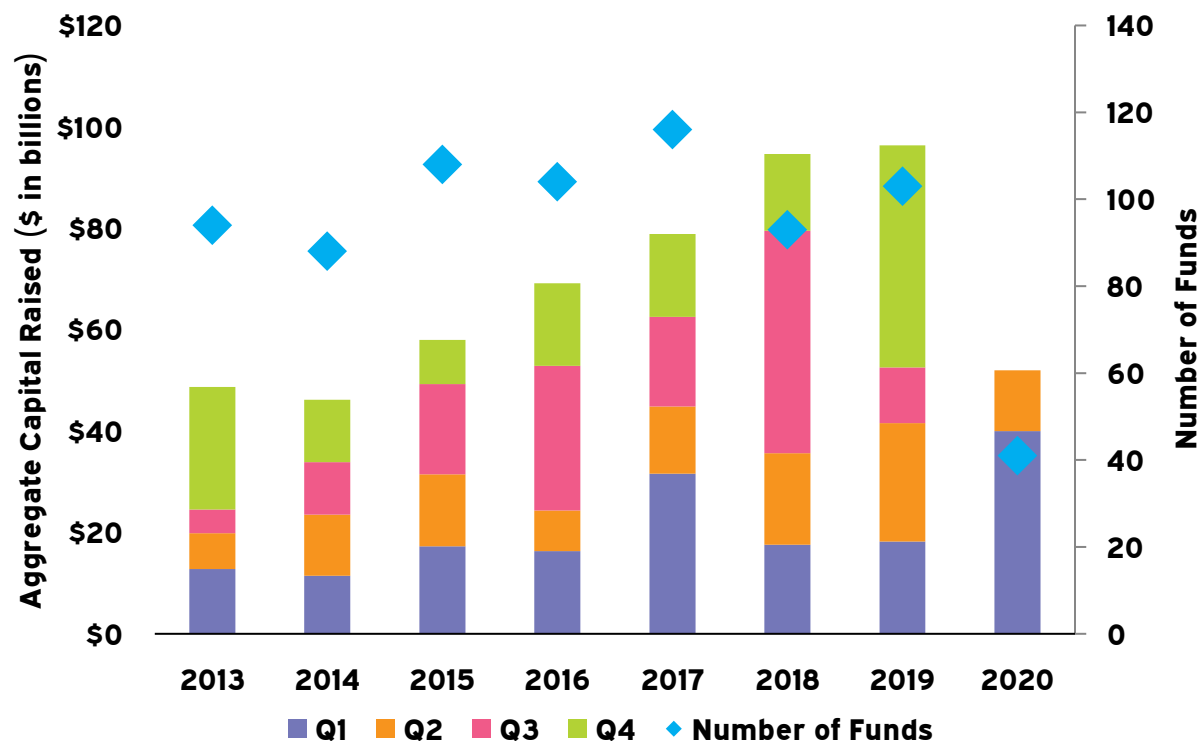
Harvested Resources U.S. South Timber Prices¹



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. Pulpwood are small to medium-sized trees chipped into small fibers primarily for conversion into paper products. Hardwood pulpwood experienced the largest decline in the second quarter decreasing by 8%. Over the past 12 months pine and hardwood pulpwood have decrease 29% and 10% respectively. Sawtimber, a more valuable product, is often used for furniture veneers or used as wood-based posts for electrical or telecommunications wires. Hardwood and pine sawtimber experienced decreases in average prices during the second quarter of 3% and 5%, respectively. The NCREIF Timberland index was flat for the quarter with income returns of 0.5% offsetting asset depreciation returns.

¹ Source: Bloomberg

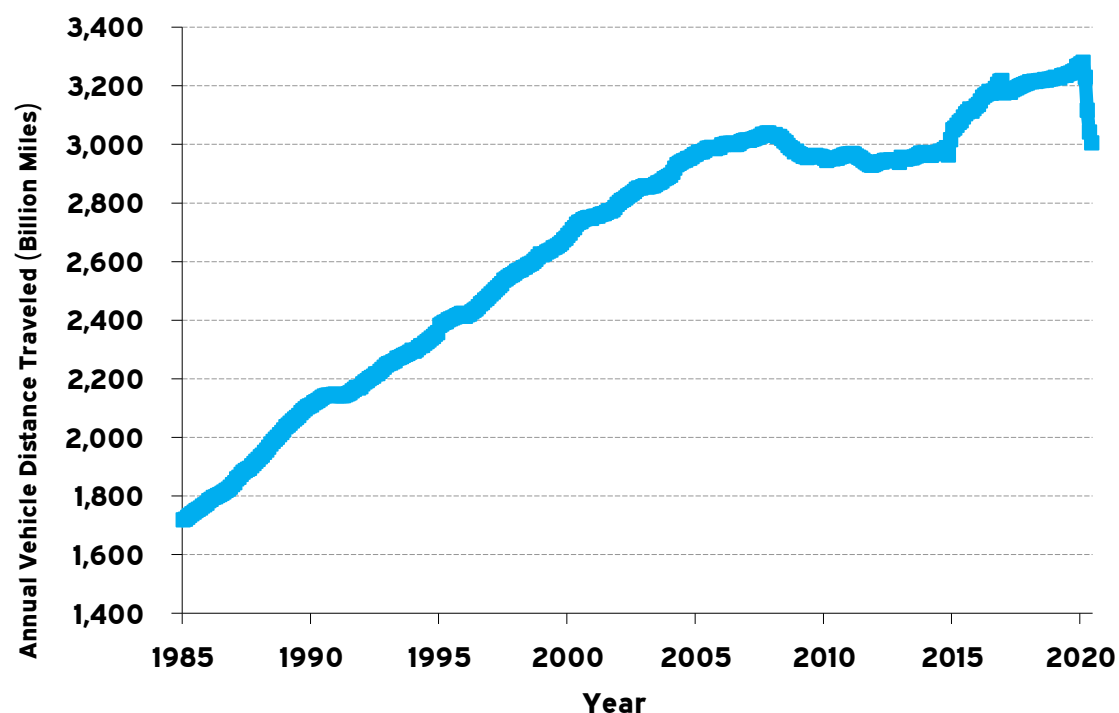
Global Quarterly Unlisted Infrastructure Fundraising¹



Capital raised in the second quarter of 2020 was the smallest second quarter fundraising since 2016. In the second quarter, the average fund raised was \$0.8 billion, less than the 2019 average of \$0.9 billion. As of June 30, 2020, a total of 246 unlisted infrastructure funds were in market, according to Preqin, with a combined fundraising target of approximately \$186 billion.

¹ Source: Preqin 2020 Global Infrastructure Report.

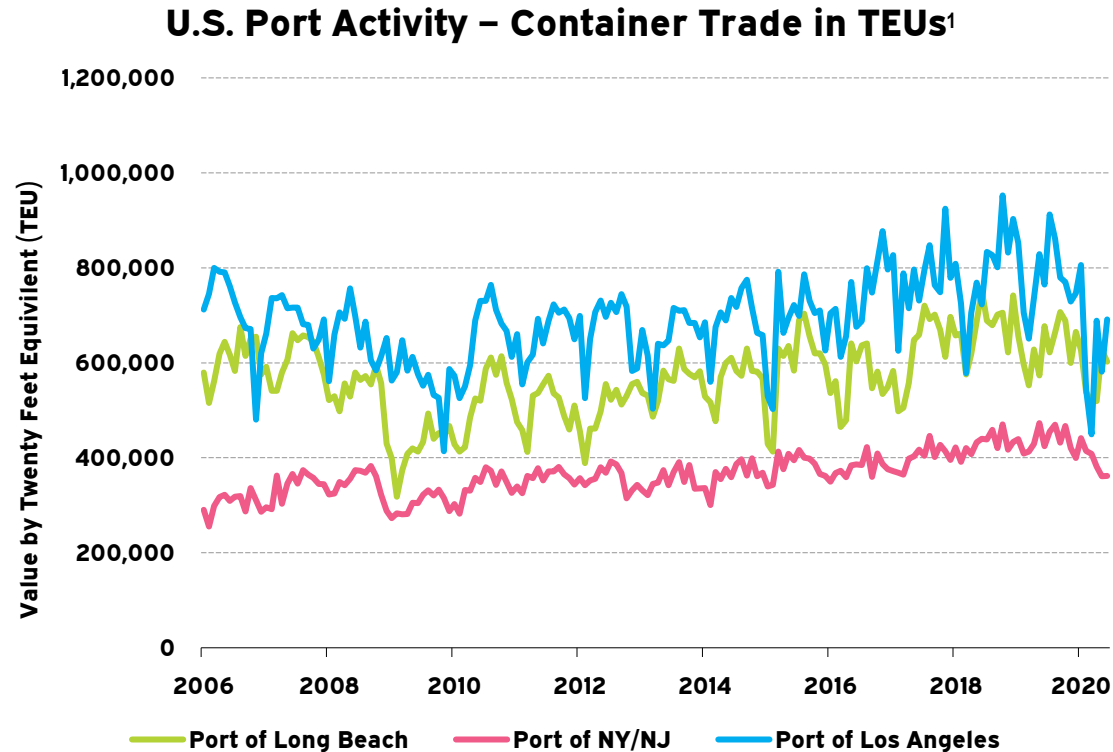
Moving 12-month Total on All U.S. Roads¹



Through June 2020, the second quarter was far below pace for travel on U.S. roads totaling approximately 627.4 billion miles. This represented a decrease of 25.8% 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.

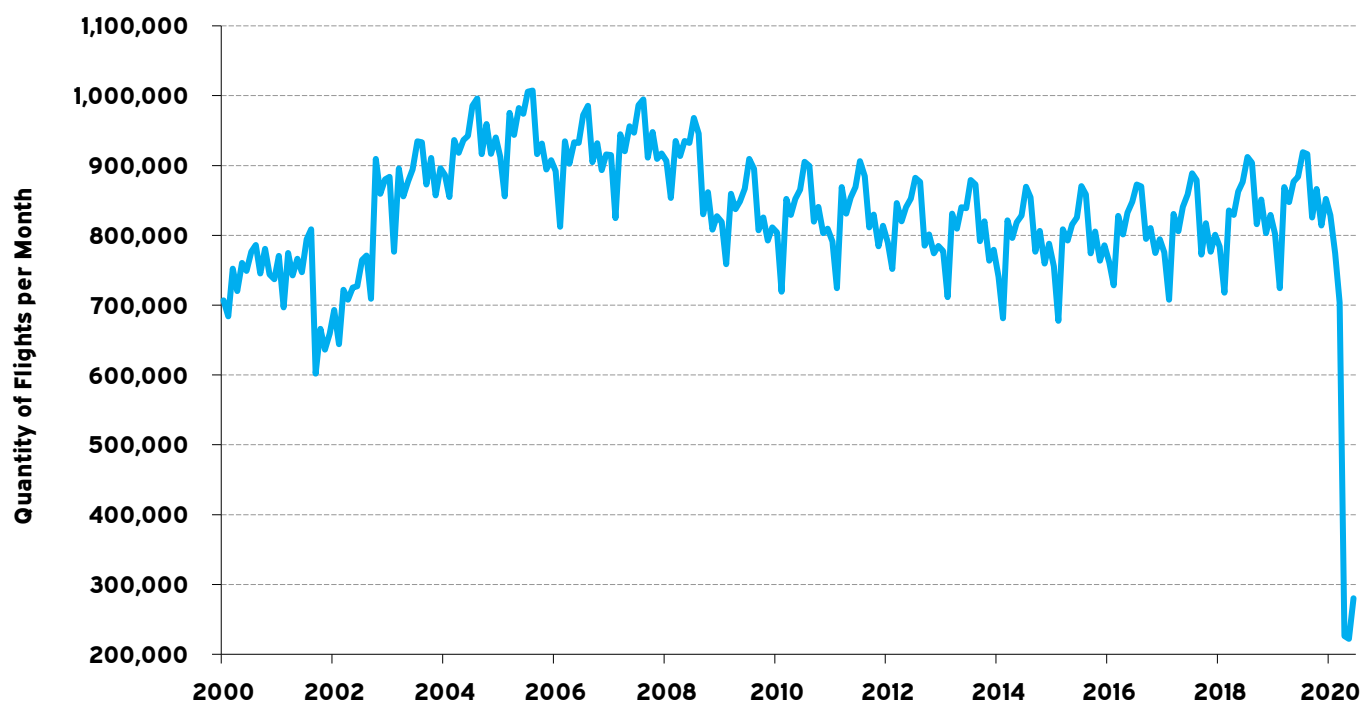


The chart represents the top three U.S. ports by container volume, as measured by twenty-foot equivalent units (TEU). Activity at the three ports provides a high-level representation of the volume of imports received into the U.S. more broadly.

During the second quarter of 2020, volumes at the three ports decreased by 718,390 units relative to the same period in 2019. On a year-over-year basis, the combined port volumes decreased by 1,785,996 TEU, or 7.85%, over the prior 12-month period. The Port of Long Beach recorded a decrease of 5.68% (444,295 TEU), the Port of NY/NJ reported an decrease of 4.1 % (214,335 TEU) and the Port of Los Angeles recorded a decrease of 11.64% (1,127,366 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

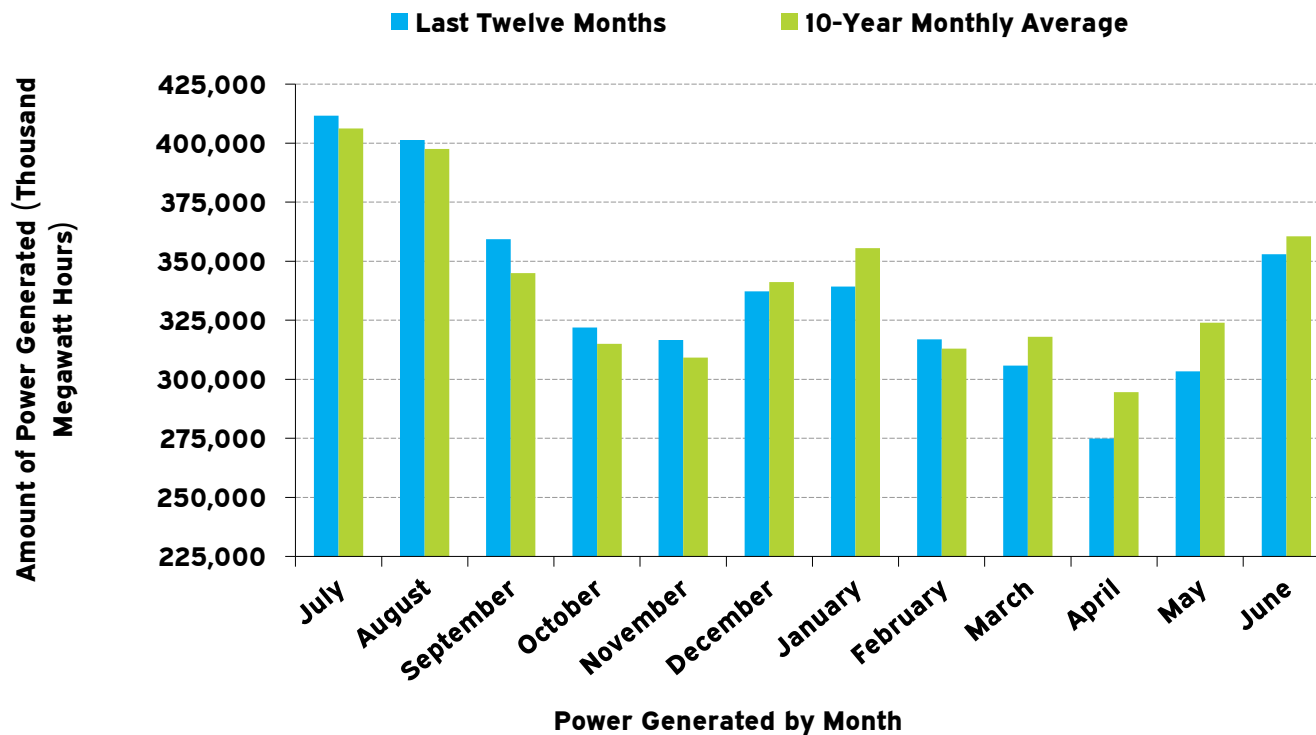


The chart above represents all U.S. domestic and international flights, excluding foreign point-to-point flights by month. Air traffic is cyclical with peaks in the summer months and declines in the winter months.

There were nearly 1.9 million less flights during the second quarter of 2020, representing a 72.1% decrease compared to the same period in 2019. Much of this loss was in April as air travel became unavailable and less recommended due to the pandemic. Air traffic activity decreased by 18.7% over the 12 months ending June 30, 2020 over the previous period. In addition to the number of flights during the second quarter decreasing year-over-year, the total number of passengers travelling on U.S. and international airlines decreased by 25.7% from 2019 to 2020 with the lowest international travelers since 2003.

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

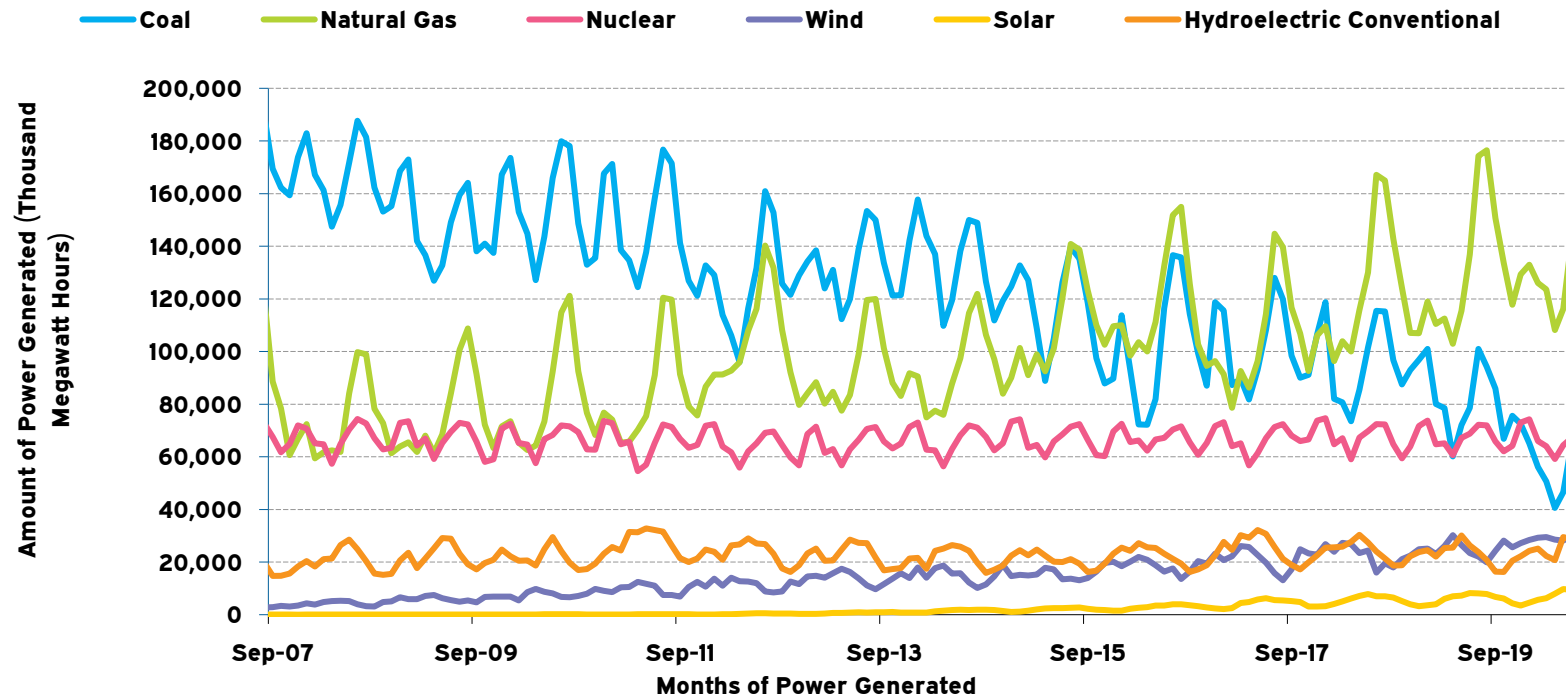
Total U.S. Power Generation¹



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 6 out of the 12 months, including the past four months. Net energy generation in the U.S. decreased by 4.5% during the second quarter, compared to the same period in 2019. For the 12 months ended June 30, 2020, net energy generation decreased by 2.2% over the previous 12 months.

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

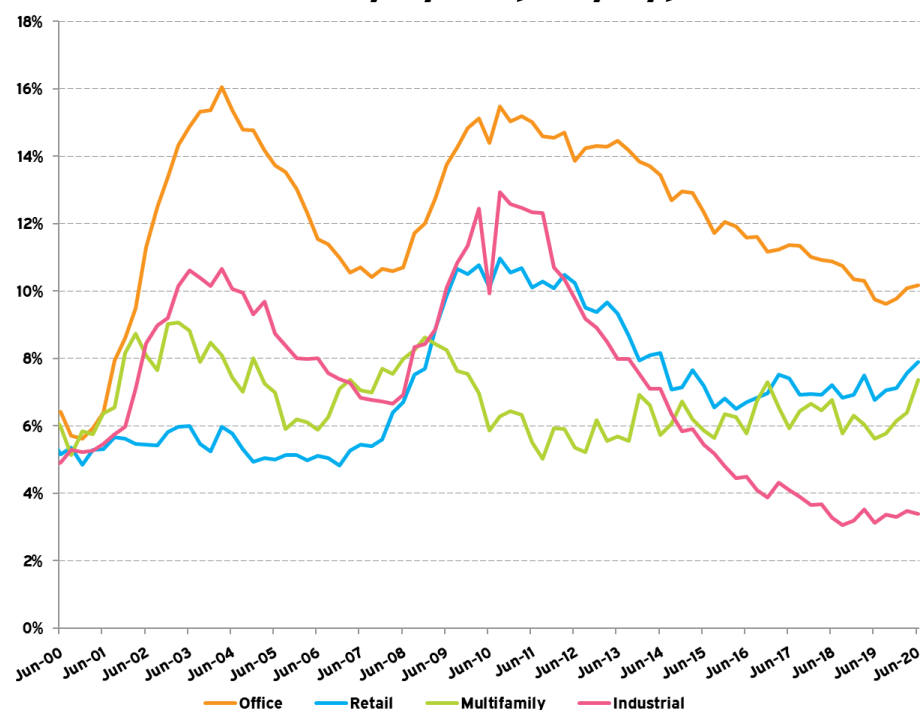
U.S. Power Generation by Source¹



Power generation sources in the U.S., natural gas, wind, and solar increased 3.5%, 8.5%, and 21.2%, respectively in the second quarter of 2020 (versus the same period in the previous year). Generation from coal, nuclear, and hydroelectric conventional dropped by 27.6%, 2.9%, and 3.6%, 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 9.3% and 2.9% of energy generation in the second quarter, while coal, natural gas, and nuclear accounted for 16.4%, 39.5%, and 20.5%, 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.

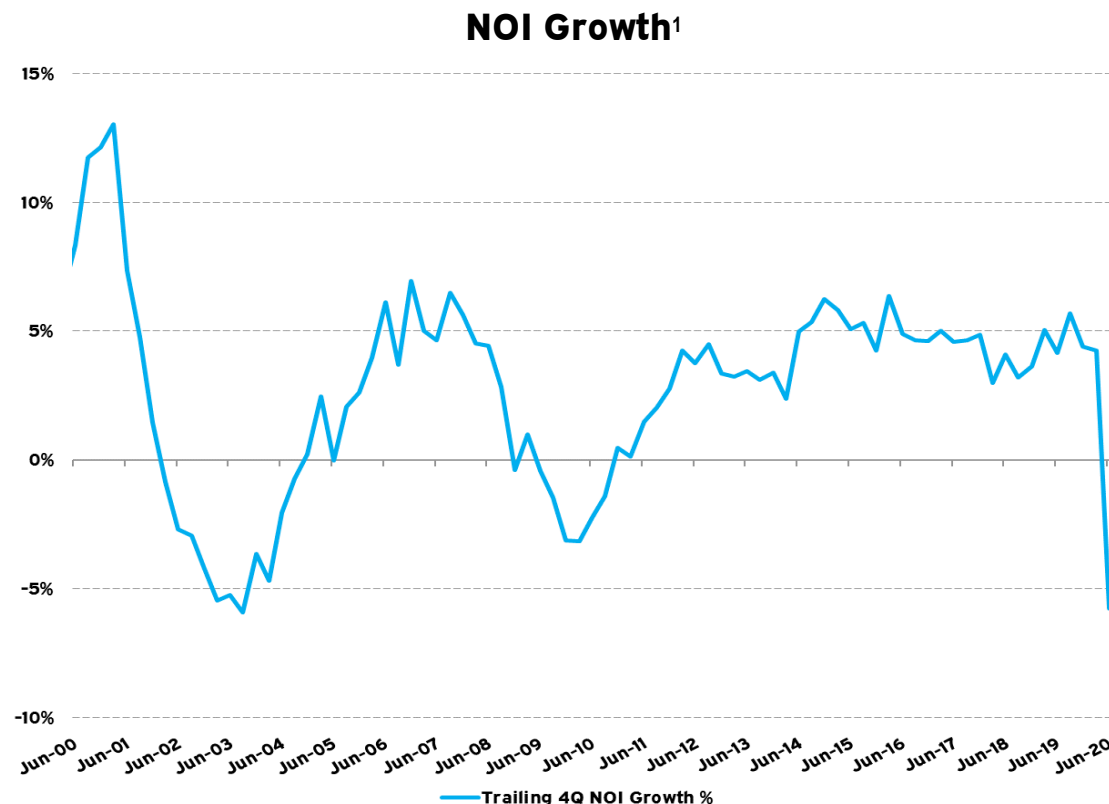
¹ Source: U.S. Energy Information Administration: Electric Power Monthly, June 2020.

Real Estate Fundamentals Vacancy by Property Type¹



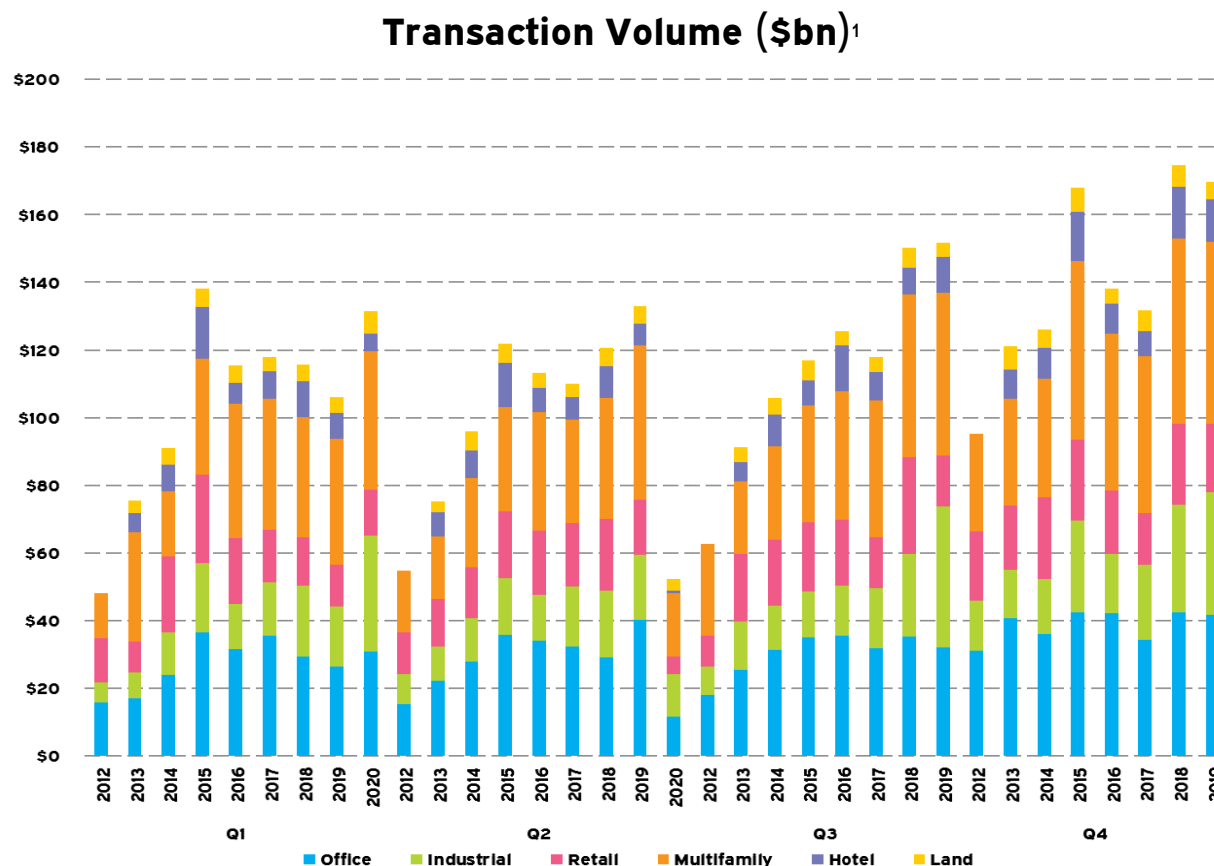
In the second quarter of 2020, vacancy rates increased for all property types except industrial. Multifamily vacancy has increased significantly in 2020, reaching its highest level since 2009. Retail and office vacancies have been increasing over the trailing twelve months. Industrial vacancies appear 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 175 basis points, office increased 43 basis points, industrial increased 26 basis points, and retail increased 114 basis points. Overall, the vacancy rate across all properties increased 85 basis points from Q2 2019.

¹ Source: NCREIF



The trailing twelve-month rate of NOI decreased significantly to -5.8% in the second 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 trended down to 5.6% for the trailing year ending Q2 2020. Office NOI growth trended down slightly to 2.3% year-over-year, and Apartment NOI moved down to -1.5%. Retail NOI growth for the trailing four quarters decreased significantly to -32.7%.

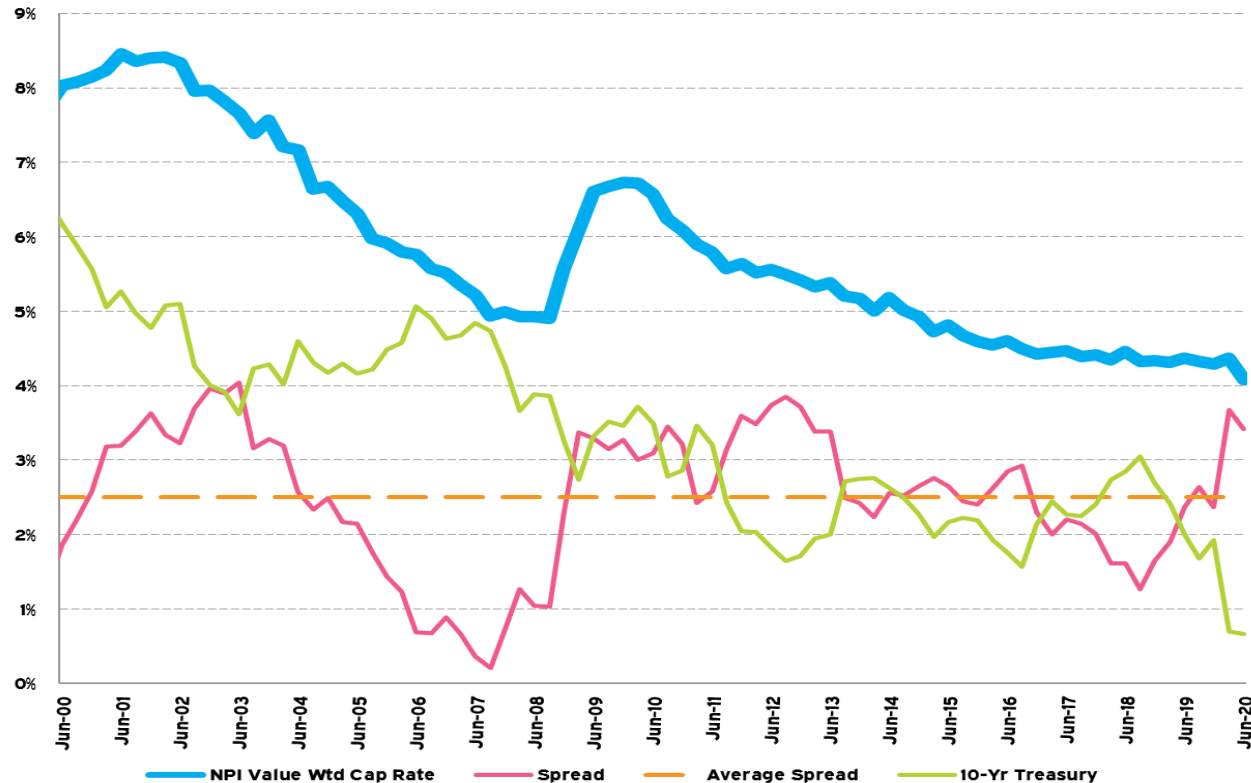
¹ Source: NCREIF



Private real estate transaction volume for properties valued over \$2.5 million for Q2 2020 was down significantly from Q2 2019 to \$52.3 billion. Compared to a year ago, industrial (-36.2%), multifamily (-59.2%), office (-69.3%), retail (-68.7%), and hotel (-89.9%) experienced a decrease in transaction volume. Multifamily and industrial properties made up the largest percentages of total transaction volume during the quarter, at 36% and 24%, respectively.

¹ Source: PREA

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



The NPI Value Weighted Cap Rate dropped in Q2 2020 to 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 stayed for Q2 2020. The spread between cap rates and treasury yields increased dramatically in Q1 2020 and now is 342 basis points in Q2 2020, which is 92 basis points above the long-term average spread.

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

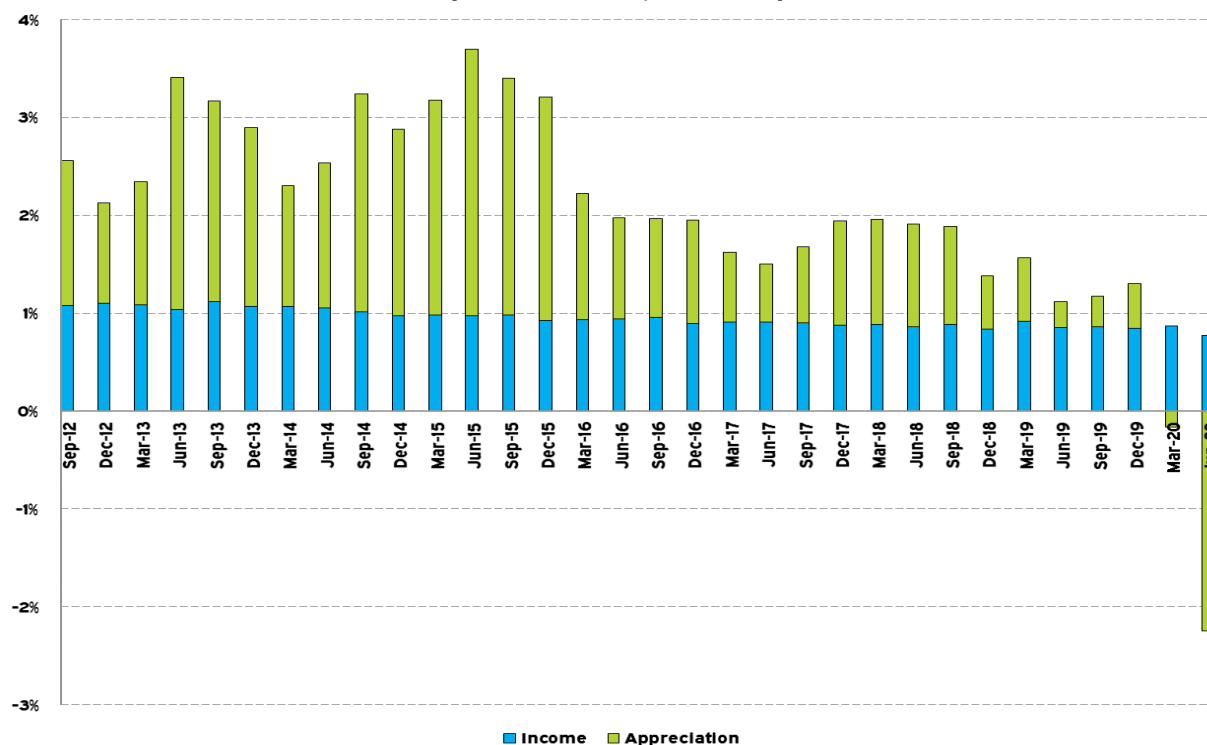
Trailing Period Returns¹

<i>As of June 30, 2020</i>	1 Year	3 Years	5 Years	10 Years
NFI-ODCE (EW, net)	1.7%	5.1%	6.7%	10.0%
NFI-ODCE (VW, net)	1.3	4.7	6.4	9.8
NCREIF Property Index	2.7	5.4	6.8	9.7
NAREIT Equity REIT Index	-6.5	3.4	6.5	10.4

Private real estate indices posted negative quarterly returns in Q2 2020, but are still 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 -23.4% in Q1 2020 and 13.3% in Q2 2020.

¹ Source: NCREIF

ODCE Return Components¹ (Equal Weight, Net)



The NFI-ODCE Equal Weight return for Q2 2020 was negative, down to -1.5%, which is 218 basis points lower than the previous quarter. The income component of the quarterly return dropped slightly from the previous quarter to 0.8%, but appreciation for the quarter was -2.3% due to valuation adjustments caused by COVID-19.

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.