Consumer and Investment Management Division

Impact of COVID-19 on the Real Estate Market (Tenth in a Series)

April 24, 2020

Investment Strategy Group

Overview of Today's Call

- Update on COVID-19
- Performance of Public Real Estate
- Impact of COVID-19 on the Real Estate Market
  - **Alan Kava,** Co-Head of the Merchant Banking Division (MBD) Real Estate Group in the Americas, Goldman Sachs
  - **Ralph Rosenberg,** Global Head of Real Estate at KKR
  - **Roy March,** Chief Executive Officer at Eastdil Secured

Source: Investment Strategy Group.

Consumer and Investment Management Division

Speaker Introduction: Alan Kava, Goldman Sachs

Alan Kava

Speaker Overview

- Co-head of the Merchant Banking Division (MBD) Real Estate Group in the Americas.
- Responsible for the design and implementation of MBD's real estate investment strategy in the Americas.
- Member of the MBD Real Estate Investment, Urban Investment Group Investment, Private Real Estate Investment and Firmwide Investment Policy Committees.

Goldman Sachs MBD Real Estate Overview

- Over 25 years of experience across global markets, property types, risk profiles, capital structures and investment cycles. Invested $50bn in real estate equity and debt strategies[1] since 2012.
- MBD Real Estate Stats: ~$38bn in AUM across real estate equity and credit[2], 18 offices in 13 countries, over 300 dedicated real estate professionals[3]
- Investment Strategies (US, EMEA, and Asia):
- Real Estate Private Equity: Core, Income and Value-Oriented, Opportunistic, Development
- Real Estate Private Credit: Senior Credit, Mezzanine Loans, Non-Performing Loans

1. MBD Real Estate reflects the integration of the MBD, UIG, GSSG, GSAM PRE, as announced in June 2019 and effective on August 26, 2019. Figures as of December 31, 2019 and exclude GSAM Japan. 2. As of December 31, 2019, reflects integration of MBD, GSSG, and other business areas.
Source: Investment Strategy Group.

Speaker Introduction: Ralph Rosenberg, KKR

Ralph Rosenberg

Speaker Overview

- Global Head of KKR's Real Estate Platform; joined KKR in 2011.
- Prior to joining KKR, Mr. Rosenberg was a partner at Eton Park Capital Management and also managed his own firm, R6 Capital Management, which later merged into Eton Park.
- Partner at Goldman Sachs until 2006.

KKR

KKR Overview

- KKR has been a global provider of equity and debt across real estate investment strategies since 1981
- Company Stats: (1) $12.7bn in AUM globally ($9.9bn in Americas, $1.5bn in Europe, $1.3bn in Asia), (2) 85 professionals across 11 cities (3) own or lend on $68bn of real estate assets based on asset value and collateral value.
- Investment Strategies:
  - Value Add & Opportunistic Equity: US and European Investment Funds
  - Real Estate Credit: Senior Mortgage (Ticker: KREF), Junior Tranche CMBS

Source: Investment Strategy Group, KKR

Speaker Introduction: Roy March, CEO Eastdil Secured

Roy March

EASTDIL SECURED

Speaker Overview

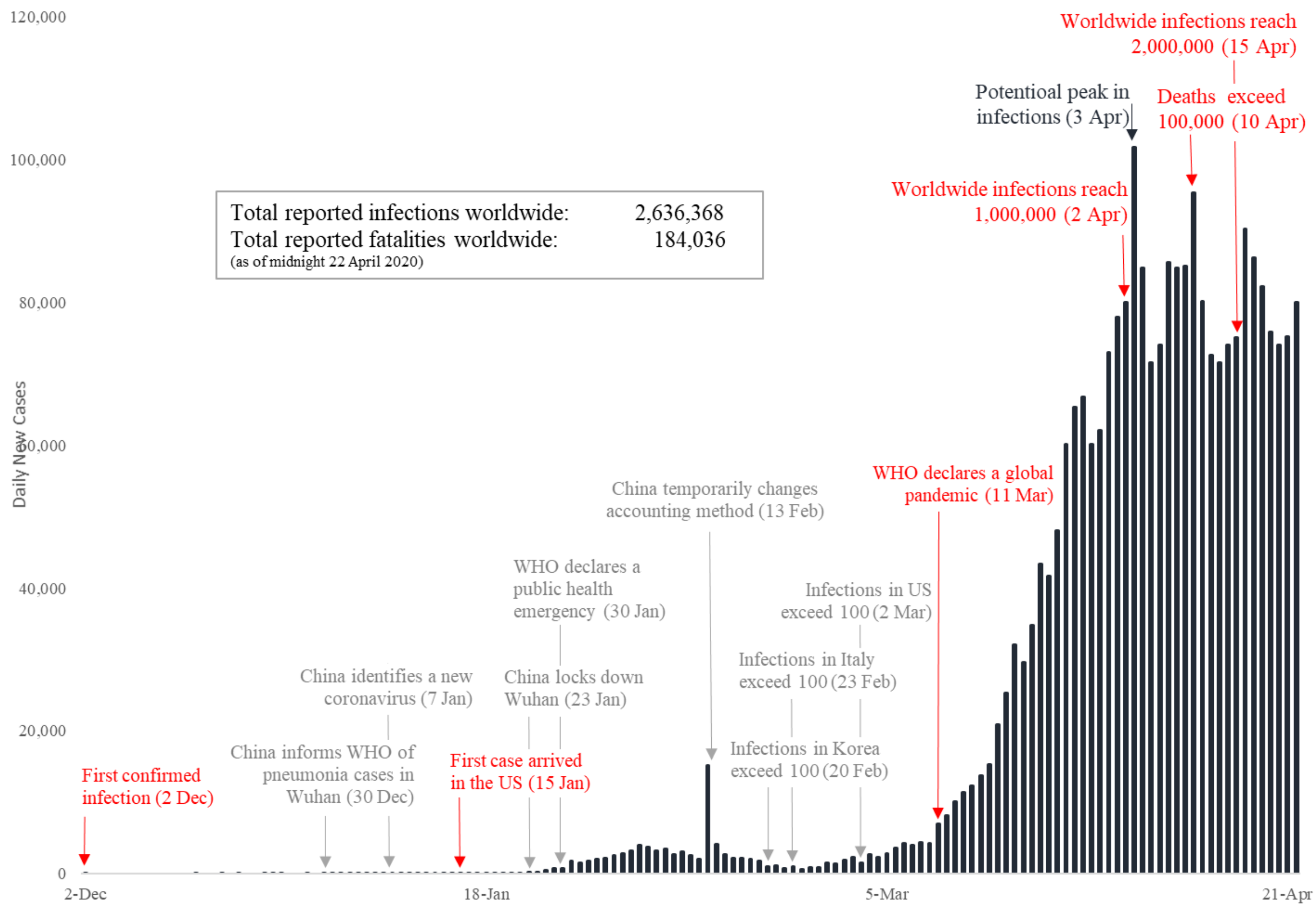
- CEO of Eastdil Secured, L.L.C., the leading real estate investment banking company in the United States.
- More than 42 years of real estate experience at Eastdil Secured across financing, sales, acquisition, and capital markets activities in the United States, Europe, and East Asia.
- Founded in 1967, Eastdil was the first real estate investment banking firm in the United States. The New York based firm has been involved in over $2.3 trillion in transactions since 2007.

Eastdil Overview

- Eastdil Secured is a leading private real estate investment banking company with the mission to create value for our clients, and to be the most relevant and trusted advisor in the commercial real estate capital markets.
- In 2019, Eastdil Secured has completed over $170 billion of global capital market transactions, including the $18.7 billion industrial portfolio sale for Global Logistics Partners, which is the largest private market sale in U.S. history.

Source: Investment Strategy Group, Eastdil Secured LLC.

SARS-CoV-2 Pandemic Timeline

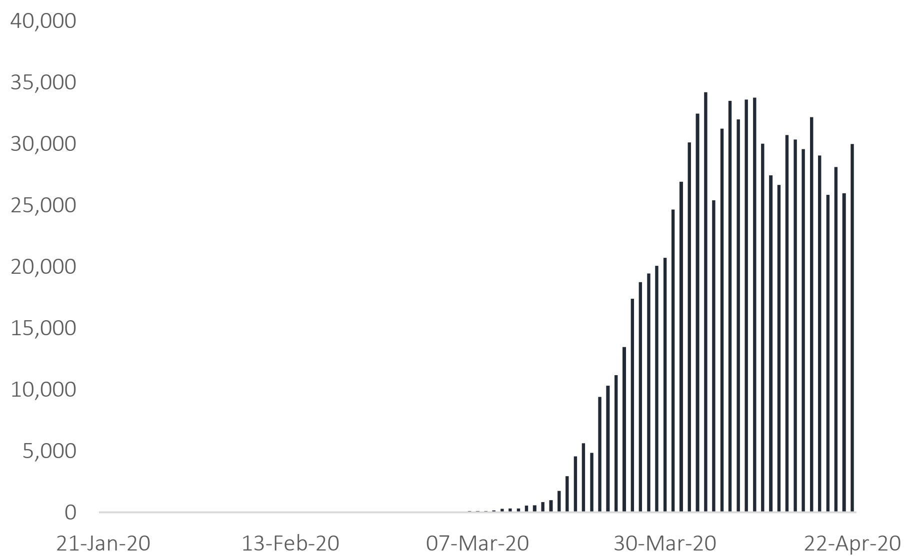


* As of April 22, 2020

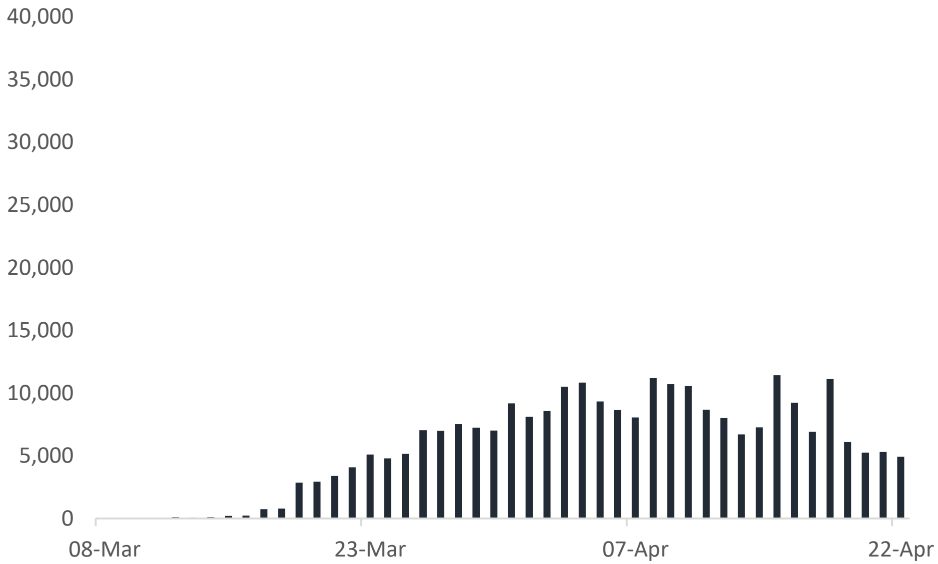
Source: Investment Strategy Group, WHO, CDC, National Health Commission of People's Republic of China, John Hopkins University, Worldometers.

Pandemic Appears to be Slowing Down in the United States

1. United States Daily New Cases



2. New York Daily New Cases



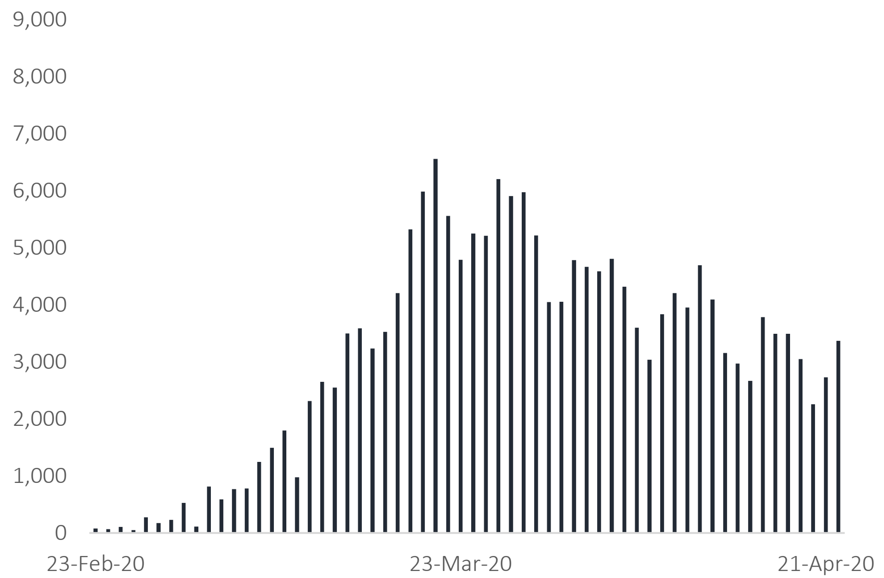
- While the number of new daily infections remains high in the United States, the pandemic appears to have plateaued and may now be on a downward trajectory.

- In New York state, which accounts for over a third of total US confirmed infections, new cases of infections appear to have peaked and are generally decreasing now.

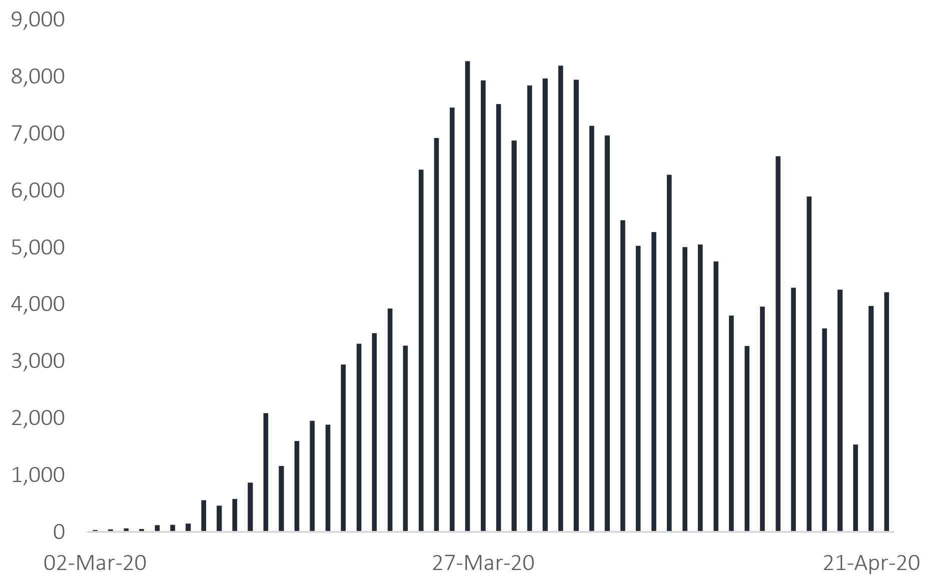
* As of April 22, 2020
Source: Investment Strategy Group, Worldometers, Washington Post

Light at the end of a Long Tunnel in Europe

1. Italy New Infections



2. Spain New Infections



- Italy and Spain, two of the top three nations globally with most cases of reported infections and fatalities, appear to have contained the outbreak.

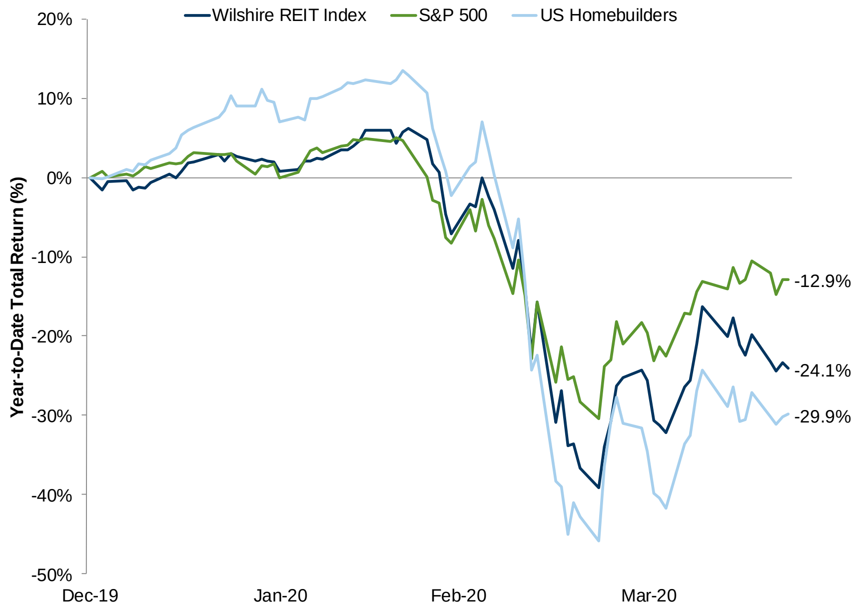
- In parts of Europe like Germany, lockdowns and social distancing measures are now gradually being relaxed.

* As of April 22, 2020

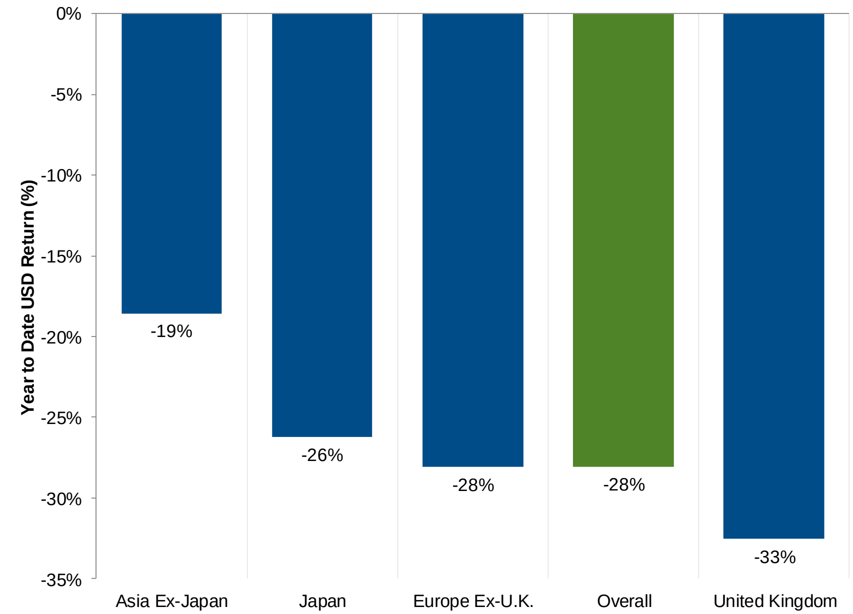
Source: Investment Strategy Group, Worldometers, WHO

Performance of US and Global Public Real Estate

1. Year-to-Date US REIT Total Returns Versus S&P 500



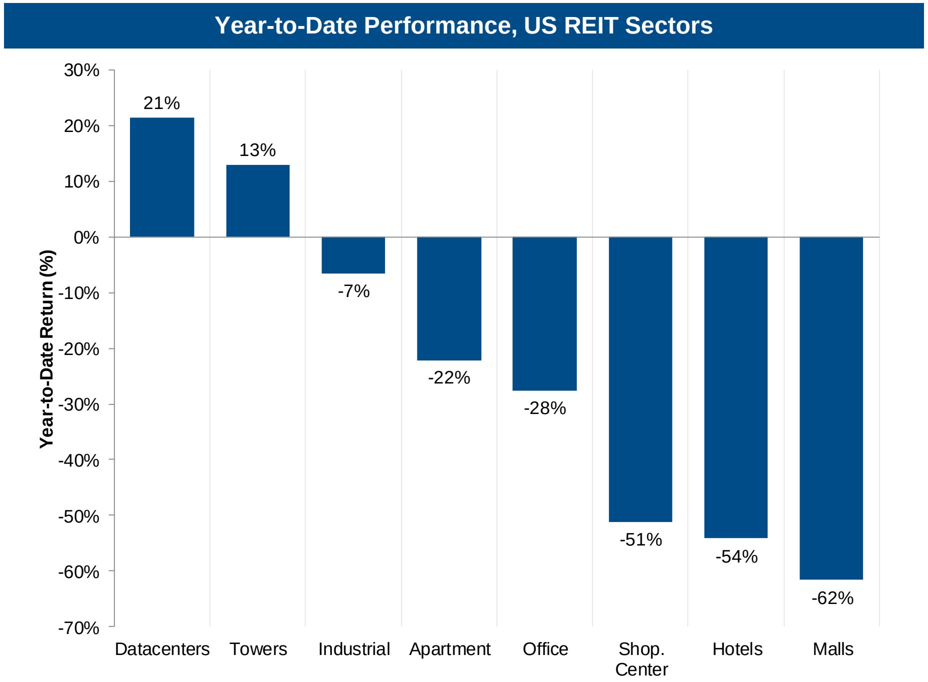
2. Year-to-Date Performance of International REITs



- US REITs have underperformed the S&P 500 by more than 11% year-to-date; deterioration of the macro backdrop has translated to slowing demand, potential tenant bankruptcies, and a deteriorating financing environment.
- Homebuilders have also underperformed; Goldman Sachs Global Investment Research (GIR) expects a 23% qoq decline in housing starts in Q2, from an annualized rate of 1.47 million in Q1 to 1.13 million in Q2.
- REITs have underperformed equity benchmarks across other developed markets as well; a global REIT benchmark[1] is down nearly 28.0% (in USD terms) year-to-date, relative to the MSCI World index at -15.7%.

1. FTSE EPRA NAREIT Developed REIT Index. For the US, performance is calculated using the Wilshire REIT index. For international markets, performance is computed using the regional components of the FTSE EPRA NAREIT Developed REIT Index. Data as of Apr 23, 2020.
Source: Investment Strategy Group, Bloomberg, Factset.

Sizable Dispersion in Performance Across Sectors



- Considerable dispersion in sector performance; malls, shopping centers and hotels that were severely affected by COVID-19 underperformed, as well as companies with higher leverage and shorter lease terms.
- Newer non-core REIT sectors such as datacenters and towers have outperformed, along with industrials/warehouses which benefit from a physical to digital transition.

Performance based on Bloomberg US REIT Sector indices except Datacenters and Towers where a basket of companies was used to calculate year to date returns for the sector.

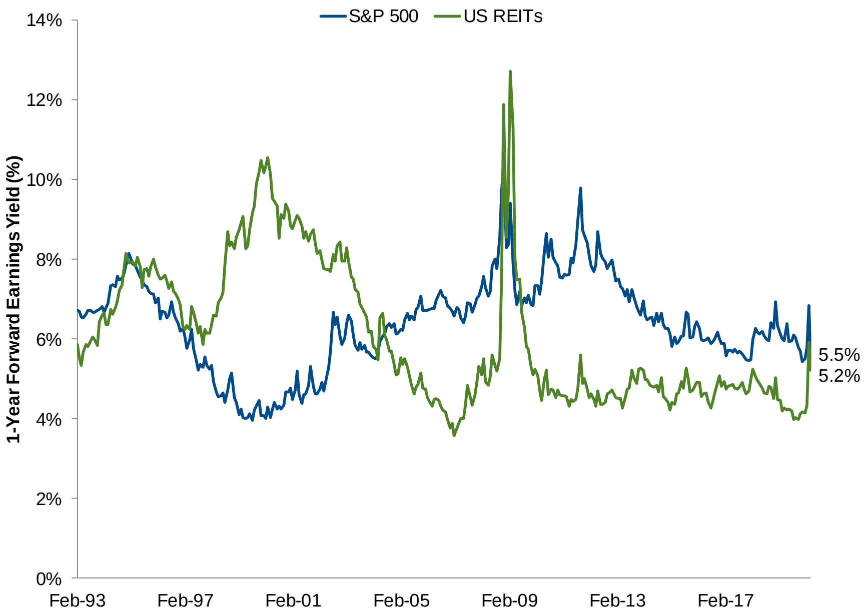
Source: Investment Strategy Group, Bloomberg, Factset. Data as of Apr 23, 2020

US REITs Seem Fairly Valued Relative to Equities, but Cheap vs. Fixed Income

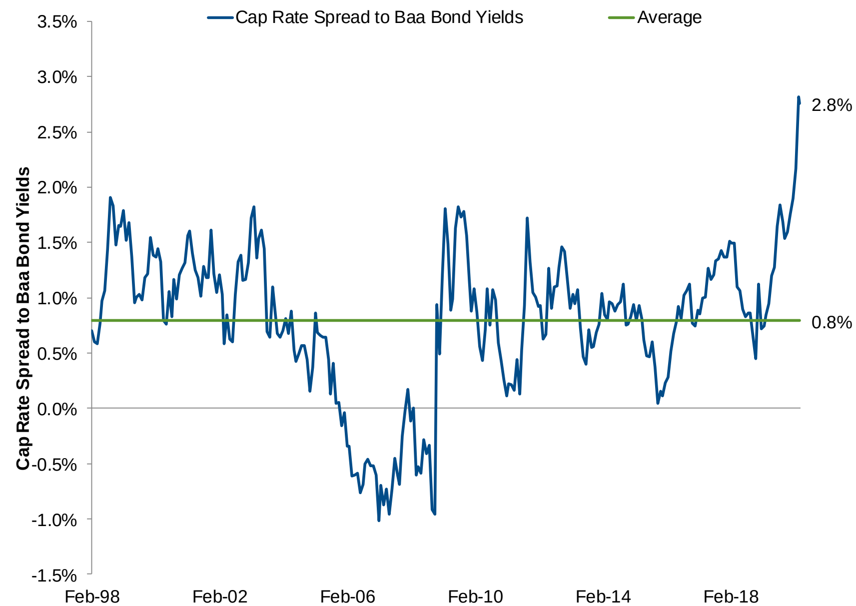
Consumer and Investment Management Division

Goldman Sachs

1. Earnings Yield of US REITs Versus S&P 500 Index



2. Spread of Implied Cap Rates[1] to Baa Corporate Bond Yields



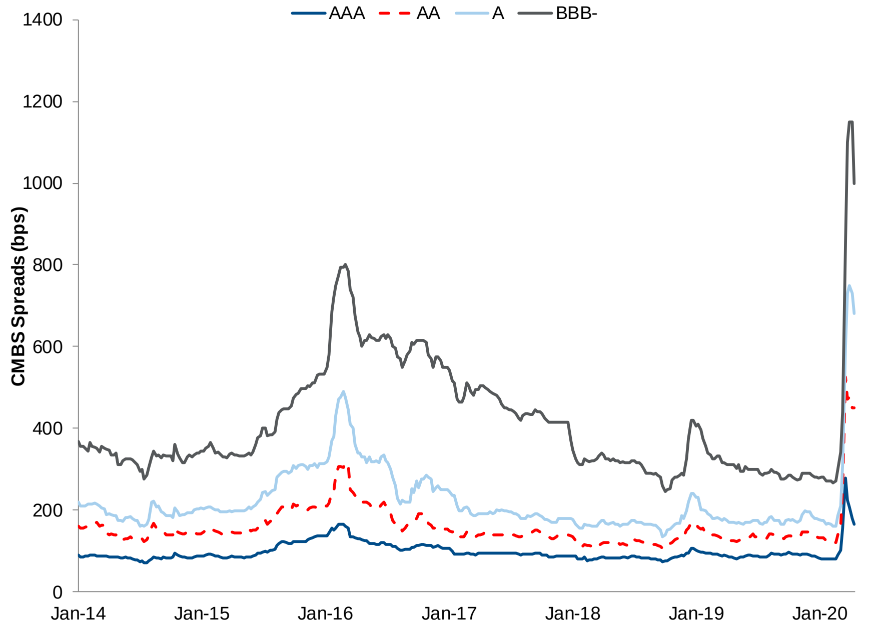
- The Adjusted Funds From Operations ("AFFO") yield to price for REITs, a measure akin to the earnings yield for the S&P 500, stands at 5.2%, which is inline to the S&P 500 earnings yield of 5.5% measured on a 1-year forward basis.
- The spread between the cap rate implied by REIT prices[1] and other measures of yield such as the spreads of Baa corporate bonds stands at its highest levels relative to history.

1. For implied cap rates, each of the five major sectors is given a 20% weight; weighting within each sector is based on total public market value of assets (i.e., market cap + debt). Other assets are assumed to experience the same percentage change in value as operating real estate.

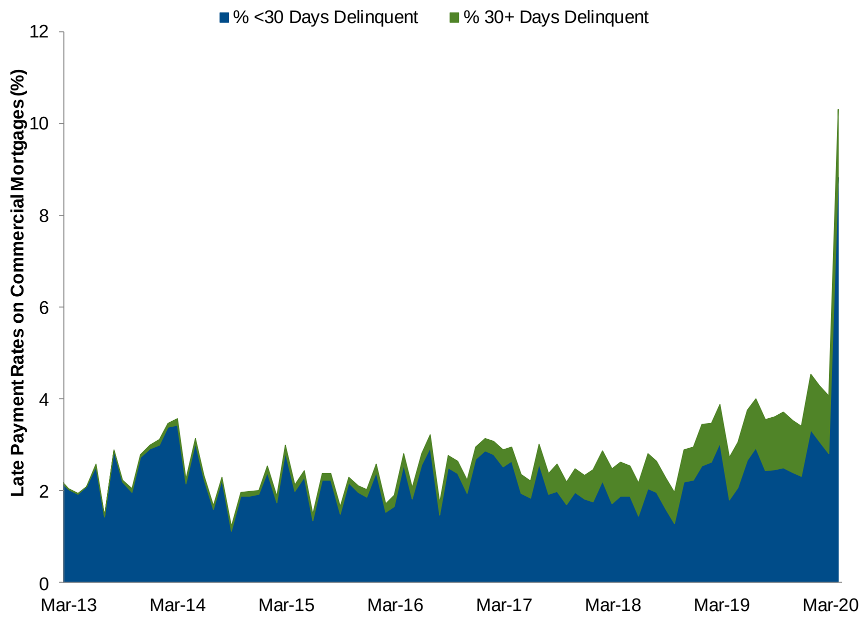
Source: Investment Strategy Group, Green Street Research. Data as of Apr 20, 2020

Elevated CMBS Spreads and Rising Late Payment Rates Among Commercial Mortgages

1. CMBS Spreads to Swaps, by Rating (bps)



2. Late Payment Rate[1] on 2012-2020 Vintage US CMBS (From GIR)



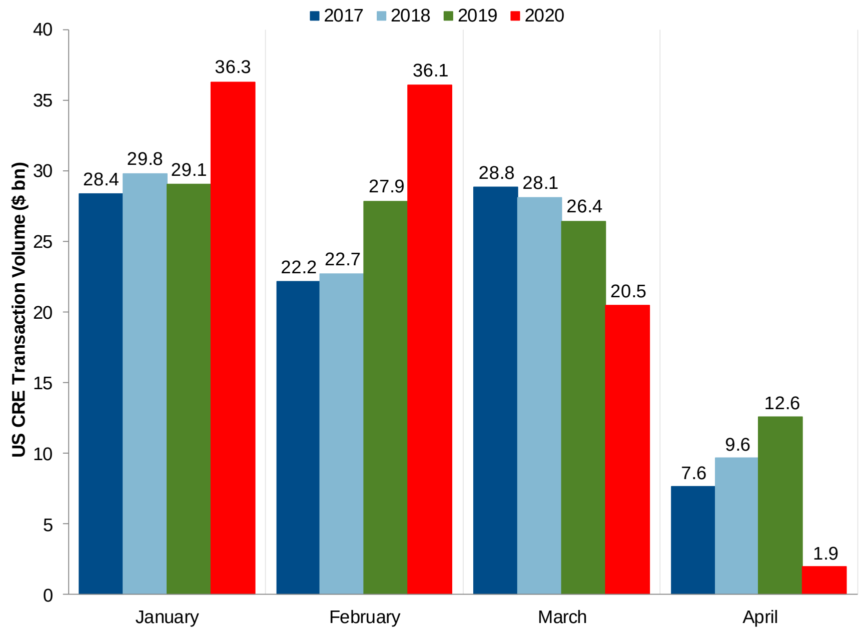
- COVID-19 has led to dramatic widening in spreads across CMBS in all rating tranches.
- We see deterioration in credit metrics in the commercial mortgage space, as demonstrated by late payment rates[1] among commercial mortgages which spiked up in April.
  - Stress was particularly seen among hotels, retail and mixed-use properties.

1. The late payment rate for CMBS includes all loans past their due date, including those less than 30-days delinquent. Data as of Apr 1, 2020.

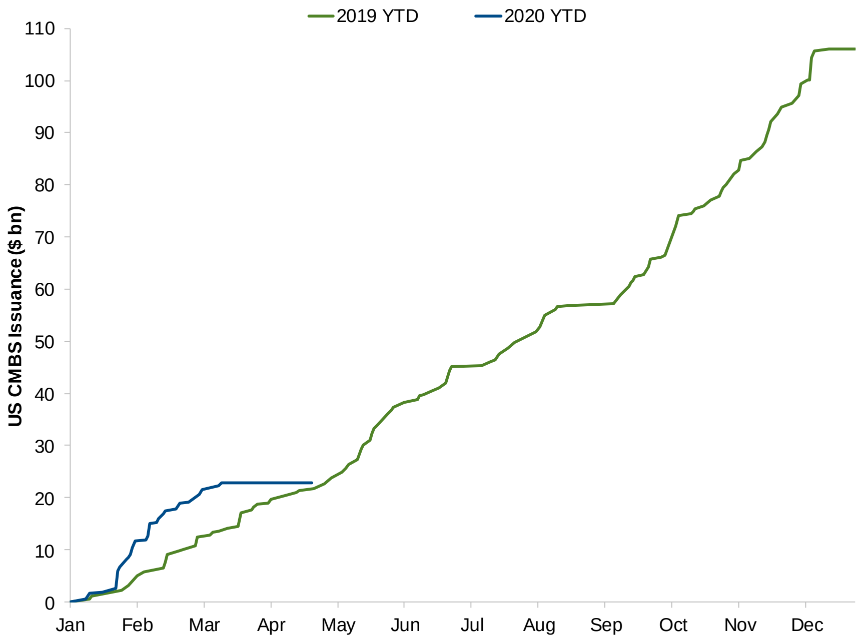
Source: Investment Strategy Group, Bloomberg, crenews.com, Trepp, Goldman Sachs Investment Research. CMBS spread data as of Apr 17, 2020.

Transaction Volume in Capital Markets

1. US Commercial Real Estate Transaction Volume – 2020 Versus Prior Years[1]



2. GIR Year-to-Date US CMBS Volume, 2020 Versus 2019[2]

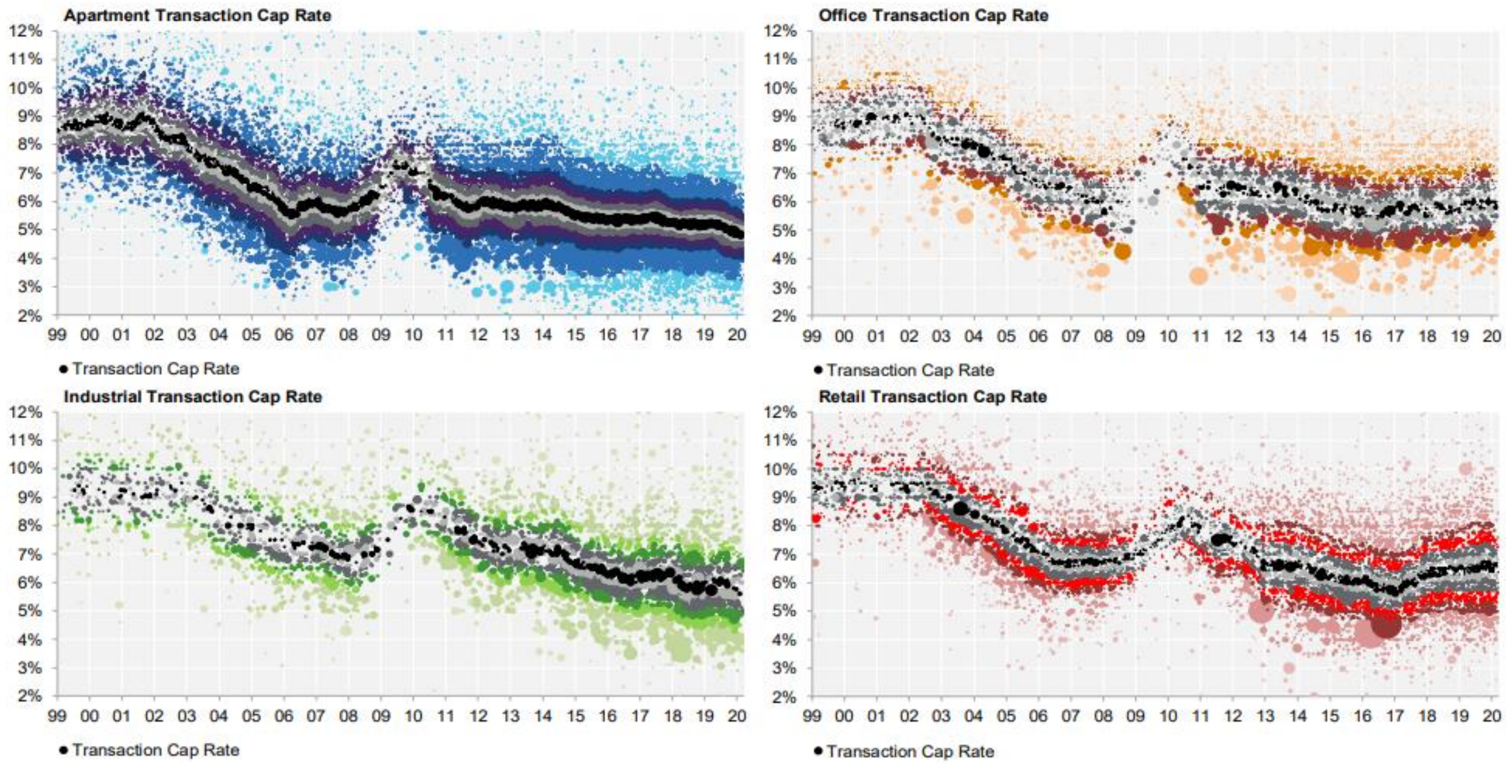


- COVID-19 has contributed to a slowdown in private real estate transaction volume. Equity transaction volume has materially declined since the spread of the virus.
- The debt capital markets have also come to a dramatic halt, especially in the CMBS space, and any new loan issuances have been executed at much wider spreads.

1. Reflects combined retail, industrial, multifamily, and office volume. Data as of April 21, 2020. 2. Data as of April 23, 2020.
Source: Investment Strategy Group, GS MBD, Costar, GS Investment Research

Cap Rates

US Commercial Real Estate Cap Rates[1]

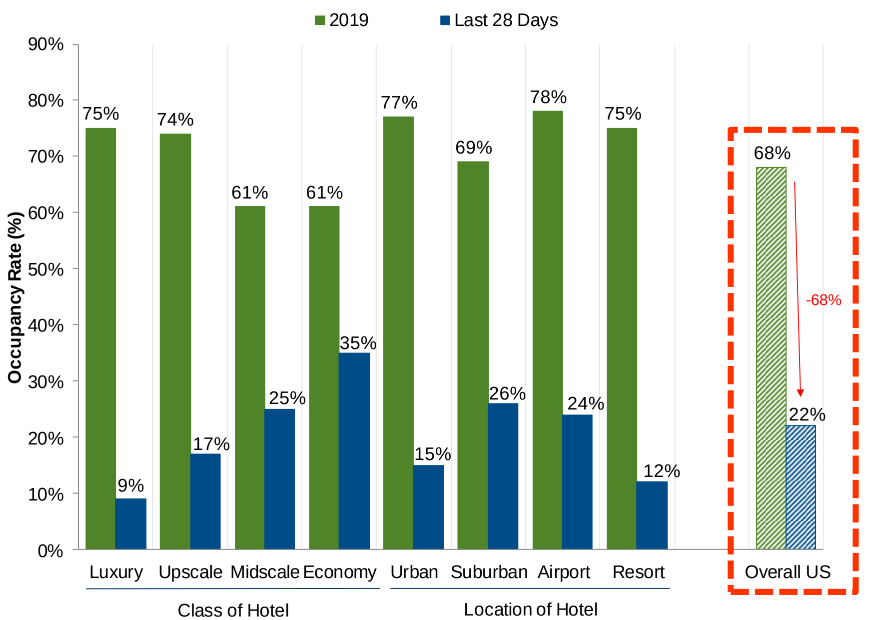


- Although it is too early to determine the impact of COVID-19 on cap rates, the prior cycle demonstrated that stressed market environments can result in temporary periods of dislocation where cap rates widen, but then return to historic downward trajectory in line with a declining interest rate environment.

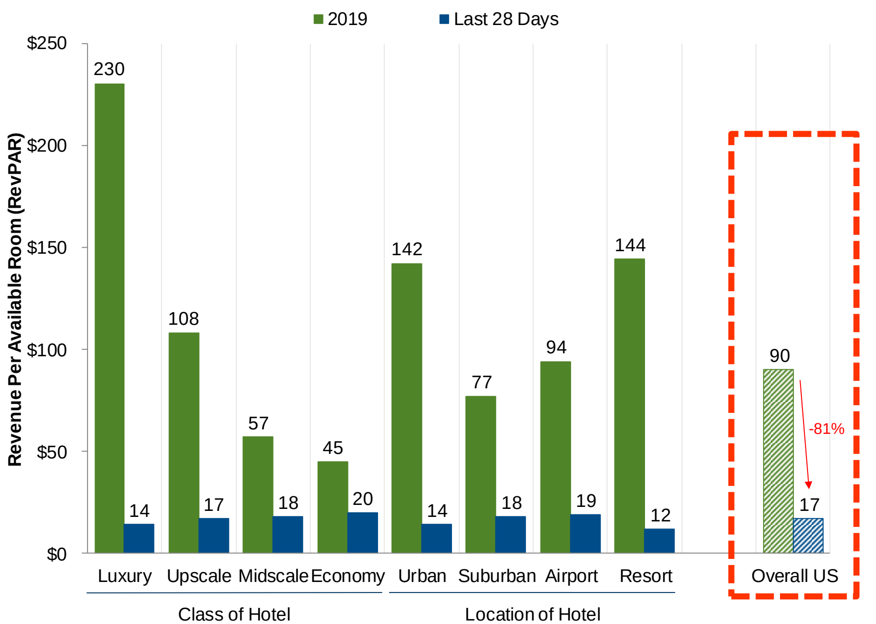
1. Cap rates are shaded by distance from trailing average to identify trend. Includes industrial assets selling for at least $5 million. Data as of April 6, 2020
Source: Investment Strategy Group, GS MBD, Costar.

Hospitality Sector

1. US Hotel Occupancy Rates – Last 28 Days Versus 2019[1]



2. US Hotel RevPAR Rates – Last 28 Days Versus 2019[1]

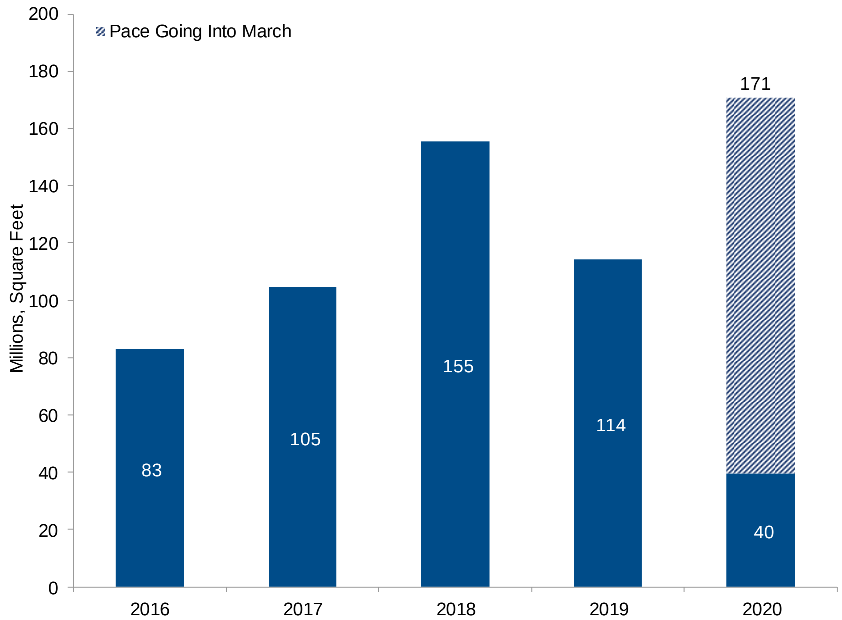


- Most global travel has ground to a halt. Trailing 28-day hotel occupancy across the US has dipped materially to 22% as of April 22, 2020 from 68% in 2019.
- Many hotel owners are choosing to close hotels, with over half of Manhattan hotels currently closed.

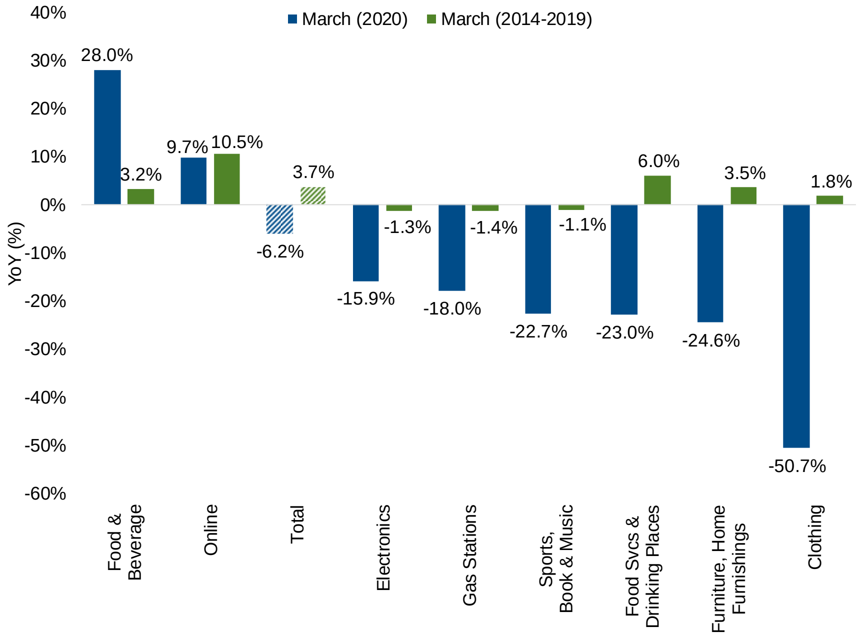
1. Data compares occupancy and RevPAR for the last 28 days ending April 22, 2020 relative to the same period in 2019.
Source: Investment Strategy Group, GS MBD, STR. Data as of April 22, 2020.

Retail Sector

1. Retail Store Closures (mm sq. ft)[1]



2. Retail Sales Growth Pre and Post-COVID-19[2]

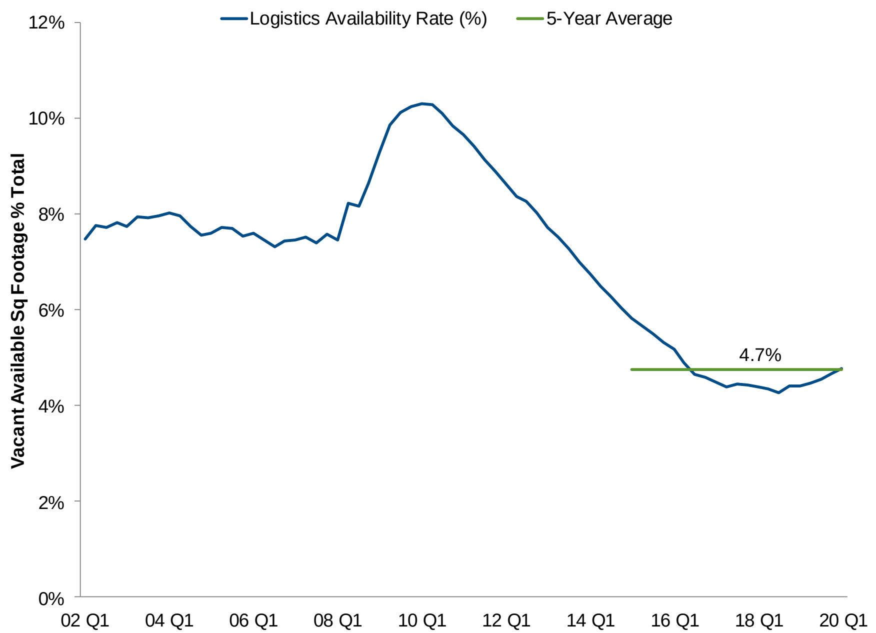


- Prior to COVID-19, retail was experiencing signs of distress as declining sales have led stores to permanently close.
- In fact, before COVID-19, 2020 was expected to have 171mm SF of store closures, more than prior years.
- COVID-19 has exacerbated declining retail sales, with the exception of food and beverage (mostly grocery stores) and online retail, as many retailers are forced to close temporarily.

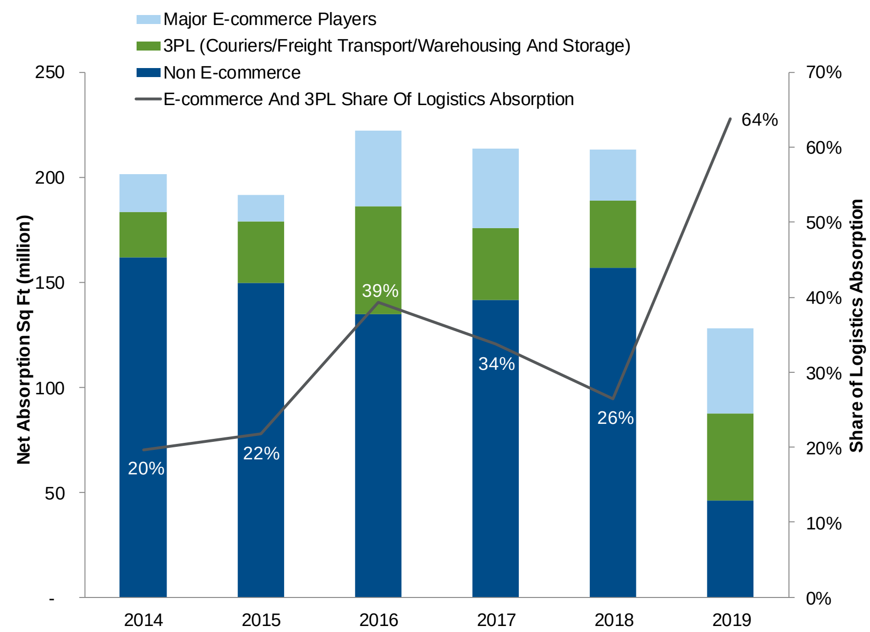
1. Estimate for 2020 based on announced store closures. Data as of Feb 29, 2020. 2. Note that Food & Beverage is mostly grocery stores. Data as of March 2020.
Source: Investment Strategy Group, GS MBD, Costar.

Industrial Sector

1. Vacant/Available Square Footage (% of Total) for Logistics Real Estate[1]



2. E-Commerce Growth in Industrial Space Pre-COVID[2]

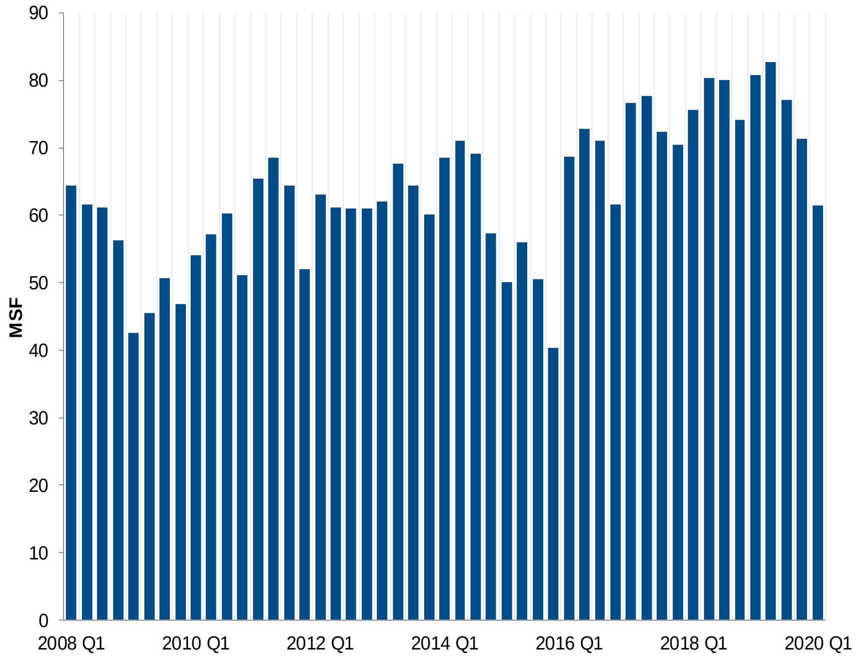


- Although supply chains have been disrupted, industrial real estate has continued to see tight vacancy levels. Availability rate for the sector stood at 4.8% at the end of Q1 2020, inline with its 5-year average.
- In addition, e-commerce prior to COVID-19 had already been benefiting from the continued growth of e-commerce, with e-commerce representing 64% of logistics absorption in 2019.

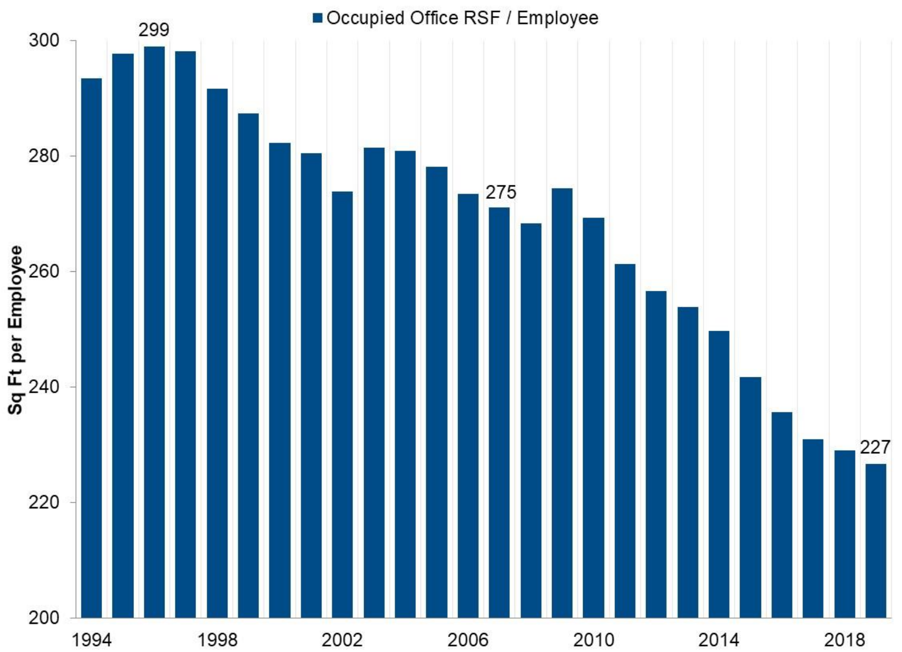
1. Data reflects logistics availability rate as of April 23, 2020 2. Data as of Dec 31, 2019.
Source: Investment Strategy Group, GS MBD, Cushman & Wakefield, Costar, CBRE

Office Sector

1. US Quarterly Office Leasing Activity[1]



2. Occupied Office SF per Employee in NYC[2]

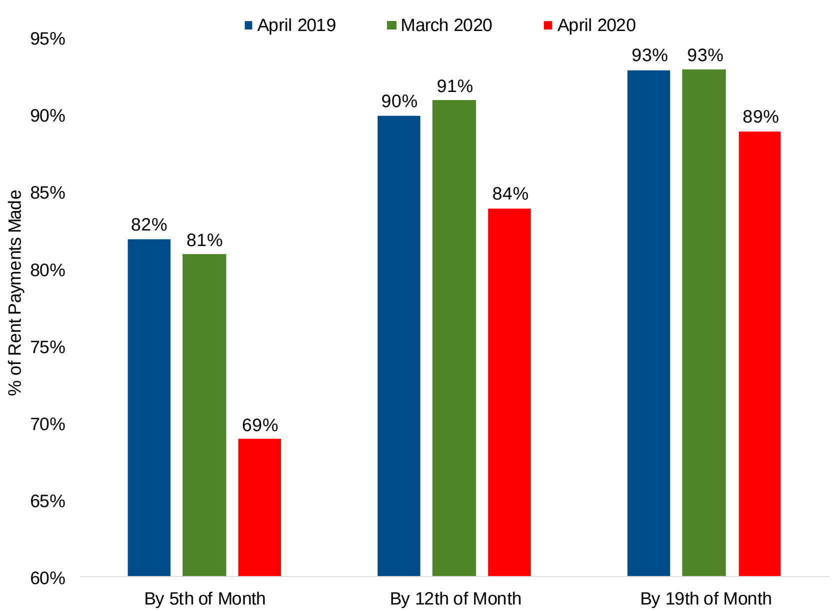


- Office leasing in the second half of Q1 2020 has decreased sharply, with total leasing nationally for the quarter at 61mm SF.
- Of note, New York City’s total office leasing of 4.5mm SF was the lowest experienced in at least 25 years.
- Although it’s too soon to determine how COVID-19 will impact office space use going forward, there has been a trend towards consolidation this cycle, with office space per employee decreasing over 17% (~50 SF) since 2009 in New York City, as a proxy.

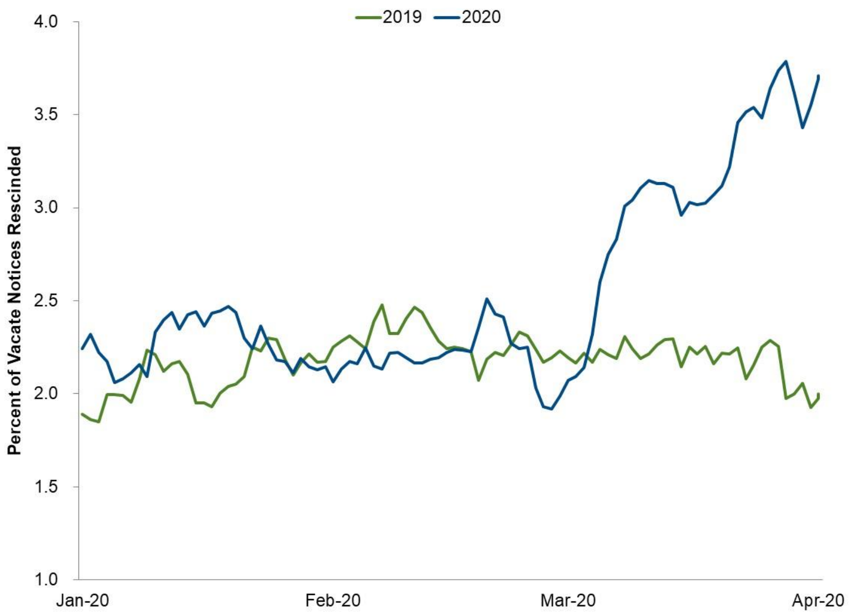
1. Data as of April 17, 2020. 2. Data as of Year End 2019.
Source: Investment Strategy Group, GS MBD, Cushman & Wakefield, JLL, Hodges Ward Elliot, REIS, ny.labor.gov

Multifamily Sector

1. US April Multifamily Rent Collections[1]



2. Percentage of Vacate Notices Rescinded[2]



- Multifamily rent collections were expected to be low due to a historic spike in unemployment. However, as of April 19th, 89% of apartment households made a full/partial rent payment, only slightly lower than 2019's rate of 93%.
- As in-person tours are not possible, COVID-19 has contributed a temporary slowdown in leasing activity with 36% fewer leases in April 2020 compared to 2019[2].
- However, more residents are choosing to renew their leases instead of vacating, helping preserve property occupancy.

1. Data is collected from 11.5 million apartment units. Data are collected weekly, with the first data collection happening the 1st through the 5th, followed by the 6th through the 12th, 13th through the 19th and so on for the remainder of each month. Data as of April 19, 2020. 2. Data sourced from Realpage and based on US property management database. Reflects rolling count of renters who decide to renew and rescind their vacate notices. Data as of April 18, 2020.
Source: Investment Strategy Group, GS MBD, NMHC, Realpage.

State of the Market?

"Alphabet Leads Tech Retreat on Real Estate Deals"

– *The Information, April 21, 2020*

"SL Green's $815 Million Deal to Sell New York City Office Tower Falls Apart"

– *Wall Street Journal, March 24, 2020*

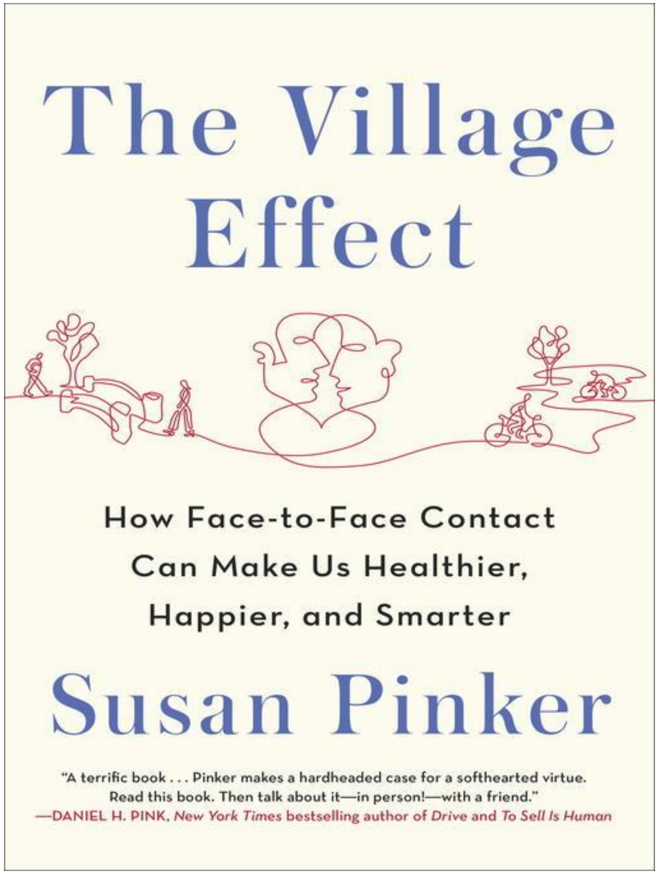
"Blackstone Abandons $20 Million Deposit on Scrapped Office Deal"

– *Bloomberg, April 1, 2020*

Source: Investment Strategy Group.

Less Use of Office Space?

Consumer and Investment Management Division



Source: Investment Strategy Group.

Consumer and Investment Management Division

Disclosures

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- ***Commodities***. Commodity investments may be less liquid and more volatile than other investments. The risk of loss in trading commodities can be substantial due, but not limited, to volatile political, market and economic conditions. An investor's returns may change radically at any time since commodities are subject to abrupt changes in price. Commodity prices are volatile because they respond to many unpredictable factors including weather, labor strikes, inflation, foreign exchange rates, etc. In a single account, because your position is leveraged, a small move against your position may result in a large loss. Losses may be larger than your initial deposit. No representation is made regarding the suitability of commodity investments.

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- ***Currencies***. Currency exchange rates can be extremely volatile, particularly during times of political or economic uncertainty. There is a risk of loss when an investor has exposure to foreign currency or holds foreign currency traded investments.
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Period	Gross Return	Net Return	Differential
1 year	6.17%	4.61%	1.56%
2 years	12.72%	9.43%	3.29%
10 years	81.94%	56.89%	25.05%

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