

# DIGITAL INFRASTRUCTURE UPDATE

## Q4 2020

Digital infrastructure broadly refers to the real assets that keep us all connected. The digital ecosystem includes multiple layers of infrastructure assets, equipment and technologies that all work together to provide us with the broadband coverage, capacity and computing power needed to live, work and play in today's virtual era. Data centers, cell towers, fiber optic networks, and other essential digital infrastructure assets are the backbone of the internet, cloud computing, mobile broadband and much more.

**These are generally essential, highly resilient assets that provide potential for consistent cash flow, non-correlated returns and capital appreciation.**

We believe the sector is set for sustained and substantial growth, with market demand fundamentals intact and tailwinds created by the acceleration of digital transformation across the business world as result of the pandemic. The impact of COVID-19 has highlighted the importance of these essential assets and the connectivity that we all depend on.

This report utilizes public market trend and sector analysis. This is provided for illustration, educational and hypothetical purposes only.

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## **/ EXECUTIVE SUMMARY**

### **2020 In Review**

#### **Connectivity Is Essential**

Modern economies require critical utilities and infrastructure to provide water, power, gas and connectivity, among other essentials such as food, housing and healthcare services. The COVID-19 pandemic has underscored that people everywhere need universal, reliable, affordable, high-speed internet to do their jobs, participate in remote school learning and stay connected to the things and people that matter most. The infrastructure that supports high-speed broadband connectivity is now more essential than ever for consumers, businesses and government agencies.<sup>1</sup>

#### **Increased Digital Transformation**

Demand is surging for digital services, driven by trends like remote work and off-premises computing, connected home entertainment, online learning, telemedicine, double-digit e-commerce growth and more.<sup>2</sup>

#### **5G Deployment Is Catalyzing Infrastructure Growth**

The introduction and continued deployment of fifth generation mobile broadband ("5G") is catalyzing growth in the digital infrastructure market. Faster speed, lower latency, higher bandwidth connectivity should continue to fuel growth in connected devices and other AI-powered applications, requiring more densification of digital infrastructure assets.<sup>3</sup>

#### **Increased Demand From Institutional Investors**

Increased capital allocations and widespread access to low-cost capital points to a favorable investment outlook for digital infrastructure. Many infrastructure funds, institutional investors and lenders are increasing allocations to the digital infrastructure sector.<sup>3</sup> As an example in the data center industry, from Q4 2018 to Q4 2020 CBRE noted an increase of 85% in the number of NDA's ("non-disclosure agreements") signed by institutions for data center offerings. In their most recent annual Global Data Center Investor Sentiment Survey, nearly 95% of all respondents, many of whom include the largest institutional real estate investors globally, responded that they were looking to increase their capital deployment in the data center sector in 2021.<sup>4</sup>

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1. Inside Towers, "Broadband, 5G Are On Biden's To-Do List", November 10, 2020.

2. Research and Markets, "Data Centers see Surge in Demand as COVID-19 Pushes Users Online".

3. Data Center Knowledge, "Investment Bankers Expect the Pandemic to Fuel a Long-Term Data Center Boom", October 21, 2020.



4. CBRE, Global Data Center Investor Sentiment Survey 2021, March 2021.

## EXECUTIVE SUMMARY (CONTINUED)

### Tenant Performance Remained Strong For Essential Digital Infrastructure Companies

Due to the essential nature of digital services, tenant performance and rent collection rates of data center and cell tower companies were the highest of the public REIT sectors throughout the pandemic, generally at or near 100% rent collection rates for companies that reported.<sup>5</sup>

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 	Reported Rent Collection								
	April	May	June	July	August	September	October	November	December
Data Center	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cell Tower	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Manufactured Housing	98.3%	98.3%	98.3%	97.5%	97.5%	97.5%	98.0%	98.0%	98.0%
Apartment	97.8%	97.4%	97.1%	97.5%	97.5%	97.6%	98.0%	98.0%	98.0%
Single Family Rental	96.0%	97.0%	97.5%	98.5%	98.0%	98.0%	98.0%	98.0%	98.0%
Self-Storage	97.2%	97.8%	97.8%	96.3%	97.0%	97.0%	98.0%	98.0%	98.0%
Healthcare	96.7%	96.6%	96.9%	97.1%	96.1%	97.5%	98.0%	98.5%	98.5%
Industrial	97.9%	97.7%	97.8%	98.2%	97.9%	98.3%	98.0%	99.0%	99.0%
Student Housing	94.8%	93.3%	93.0%	95.0%	95.0%	97.0%	--	--	--
Office	96.4%	96.4%	96.4%	97.0%	97.7%	97.0%	97.0%	97.0%	97.0%
Net Lease	81.5%	80.6%	82.1%	90.8%	91.6%	91.8%	93.0%	90.8%	89.1%
Shopping Center	75.2%	75.3%	75.6%	86.8%	87.8%	87.8%	89.7%	91.4%	93.0%
Malls*	51.3%	52.1%	56.7%	83.4%	84.1%	85.7%	85.0%	90.5%	90.5%

### Fundamental Demand Drivers Should Mitigate Interest Rate Risk

In the event of a rising interest rate environment, strong secular growth drivers for digital infrastructure along with upticks in institutional allocations, generally healthy balance sheets, long-term financing, modest leverage and relatively high margins across the broader sector should help insulate valuation risk in digital infrastructure assets. In addition, real assets tend to perform well in inflationary macroeconomic scenarios as they are generally total return vehicles, not fixed income streams.<sup>6</sup>

Strategic Capital Fund Management is an alternative investment management firm focused on innovative digital infrastructure investments with a goal of providing attractive risk-adjusted returns while protecting investor capital. The company strives to create investment opportunities with superior management teams, cutting-edge asset classes and distinct product structures that can help provide durable income, growth potential, reduced volatility and low correlation to traditional markets.

This report is an update to the data provided in our Spring 2020 research report *Digital Infrastructure Update: COVID-19 Impact and Risk Assessment and subsequent quarterly reports*.

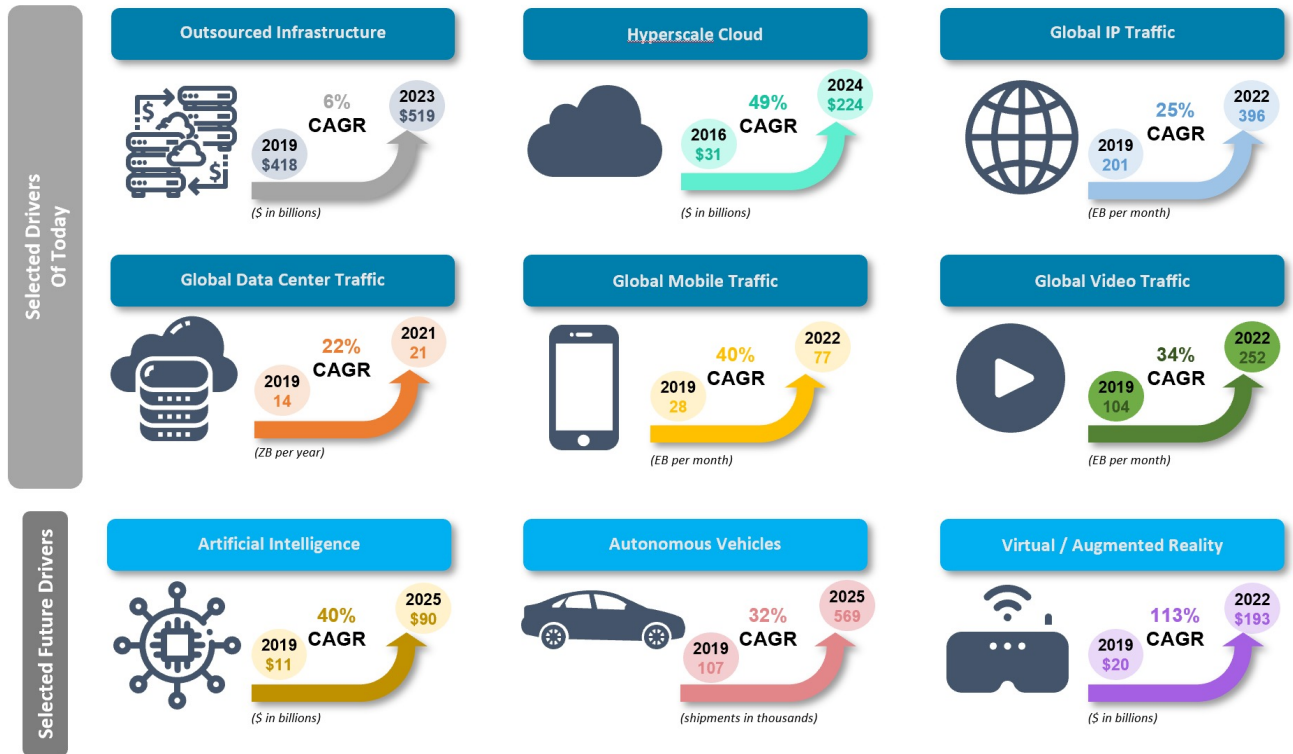
5. Seeking Alpha, "REITs: This Time Was Different", March 15, 2021. Rent collection data is provided for educational purposes. There is no guarantee that these trends will continue.

6. Barclays Research: Implications of Rising Interest Rates, 2019.

## / SECULAR DEMAND DRIVERS FOR DIGITAL INFRASTRUCTURE

The surge of new applications over the next few years is expected to complement several transformative drivers already in motion today that are creating an unprecedented demand for digital infrastructure services globally.

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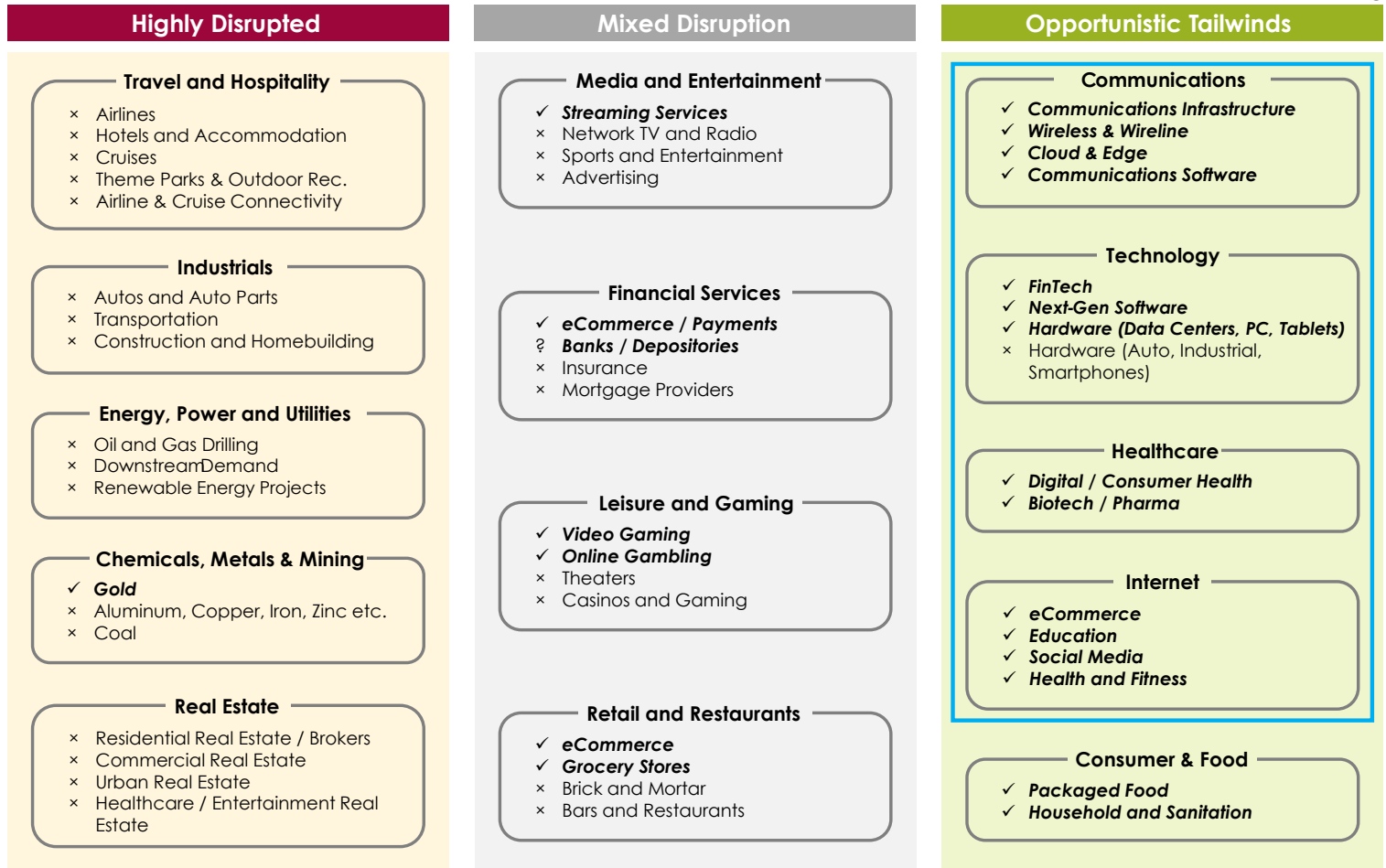


7. Sources: Barclays Research, Outsourced Infrastructure: 451 Research and Structure Research, Hyperscale Cloud: Structure Research, Global IP Traffic / Global Data Center Traffic / Global Mobile Traffic / Global Video Traffic: Cisco Indices, Artificial Intelligence: Statista, Autonomous Vehicles: BI Intelligence Estimates, Virtual / Augmented Reality: IDC; Statista estimates.

## / SNAPSHOT OF COVID-19 IMPACT ACROSS THE BROADER ECONOMY

In the current context, the basic essentials are food, healthcare and **connectivity**. We believe the current shifts in consumer behavior, remote working, businesses outsourcing IT functions, and increasingly digitized healthcare and education platforms continue to create opportunistic tailwinds for the digital infrastructure sector.

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8. Barclays, COVID-19 Insights & Opportunities, June 2020.

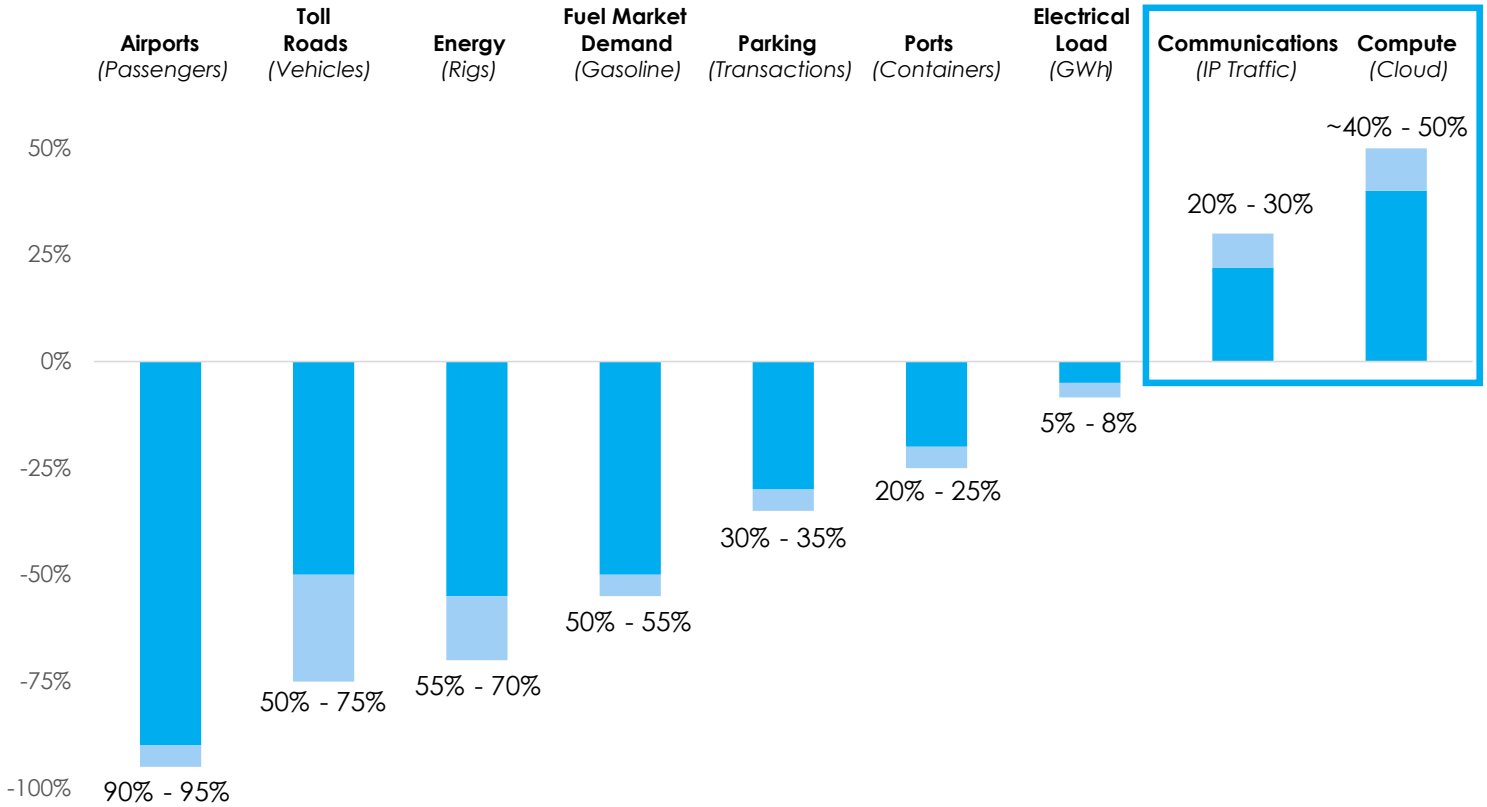
## IMPACT OF COVID-19 ON INFRASTRUCTURE SEGMENTS

Looking at the comparative demand volume changes in various infrastructure segments further supports how digital infrastructure experienced an uptick in utilization in 2020, due in part to COVID-19.

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### Infrastructure Industry Volume Data

(Units in Parentheses)



Sources: TSA Website (Airlines); Moody's Rating Agency Report (Toll Roads); Baker Hughes (Energy); Valero and Marathon Earnings Call Transcripts (Fuel Market Demand); SP Plus Corporation (Parking); Port of Los Angeles, Port of Long Beach, Port of New York and New Jersey (Ports); BNEF (Electrical Load); Verizon (Communications); Amazon/Microsoft/Google/Kingsoft (Cloud).

9. Barclays, COVID-19 Insights & Opportunities, June 2020.

## / IMPLICATIONS OF RISING INTEREST RATES & INFLATION

Public data center and tower REITs were some of the top performing real estate securities through Q3 2020 as investors largely fled to quality and real asset classes with strong recurring revenue streams in a risk-off cycle. In Q4 2020, many of these securities traded downward, likely due to REIT sector rotation and as an immediate reaction to increases in treasury yields.<sup>10</sup>

While interest rates are certainly an important variable in asset valuation methodologies, we believe the broader relationship between interest rates and REIT valuations specifically are nuanced and widely misunderstood. REITs are not simply a fixed income stream, but rather a total return vehicle.<sup>10</sup> Additionally, pricing of real asset transactions in the private markets have little correlation with public market securities performance. Specifically in the digital infrastructure segment, Strategic Capital Fund Management teams did not experience similar volatility in value that was seen in public REIT securities. Valuations on data centers and wireless infrastructure assets in our pipelines remained relatively stable, with slight upticks year-over-year.

### Real Assets Historically Performed Well During Periods of Rising Interest Rates

During sustained periods of rising interest rates, REITs have generally performed well. Interest rates rise for a variety of reasons and ultimately whether rates are rising or falling does not appear to be the key driver of REIT performance over the mid to long-term in our opinion. Rather, it may be more important to address the underlying factors that are driving rates higher or lower.<sup>11</sup> Setting aside company-specific idiosyncrasies or secular trends in a subsector, rising rates during inflationary periods may reflect economic growth, which typically results in increased business activity, higher occupancy, and higher rental rates.<sup>10</sup>

### Historical REIT Performance During Sustained Periods of Rising Interest Rates<sup>11</sup>

TIME PERIOD	U.S. 10-YEAR TREASURY YIELD			CUMULATIVE TOTAL RETURN OVER PERIOD		
	BEGINNING YIELD (%)	ENDING YIELD (%)	CHANGE (%)	REITS (%)	STOCKS (%)	DIFFERENCE (%)
December 1976 - September 1981	6.9	15.3	8.5	137.4	46.0	91.4
January 1983 - June 1984	10.5	13.6	3.1	35.6	16.5	19.1
August 1986 - October 1987	7.2	9.5	2.4	-10.1	10.9	-21.0
October 1993 - November 1994	5.3	8.0	2.6	-10.3	0.1	-10.3
October 1998 - January 2001	4.5	6.7	2.1	27.4	27.8	-0.4
June 2003 - June 2006	3.3	5.1	1.8	108.2	37.6	70.6

S&P Dow Jones Indices LLC, Bloomberg, The Federal Reserve. REIT total returns are based on the FTSE/NAREIT Equity Index from Dec. 31, 1971, to Dec. 31, 1986, and they are based on the Dow Jones U.S. Select REIT Index after Dec. 31, 1986. Stock total returns are based on the S&P 500. Past performance is no guarantee of future results. This is provided for educational purposes only. You cannot trade in an index.

10. Barclays Research: Implications of Rising Interest Rates, 2019.

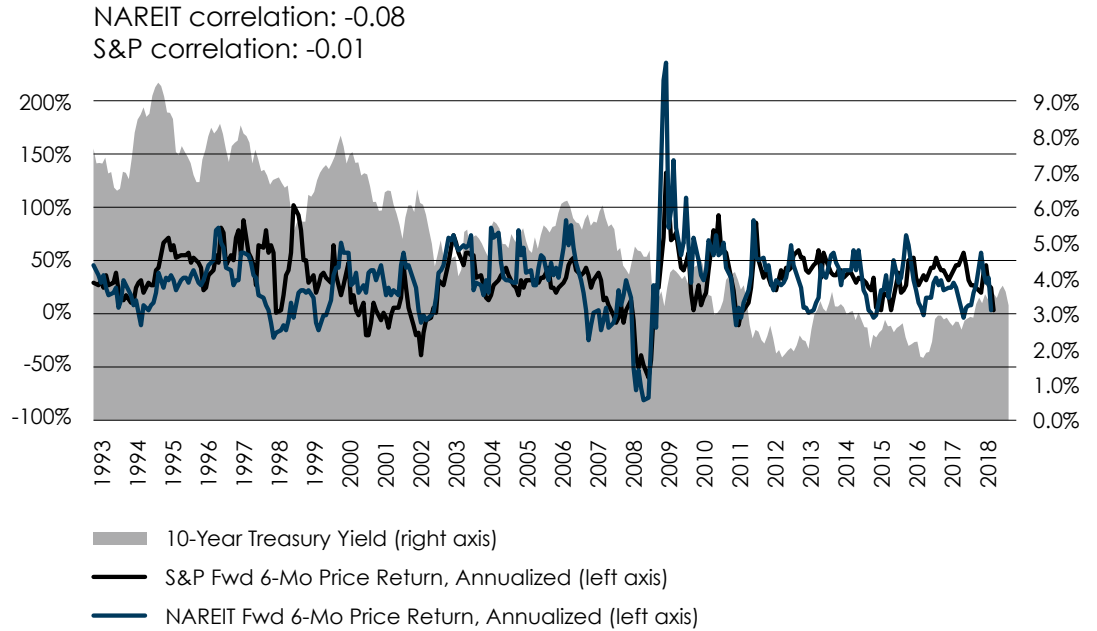
11. S&P Global: The Impact of Rising Rates on REITs.



**Mid to Long-Term REIT Performance Is Virtually Uncorrelated to 10-Year Treasury Yields**

Historically, public REITs have experienced a strong inverse correlation of approximately -0.83 with Treasury yields in the immediate term, possibly due to perceived high capital needs or a less attractive relative yield to alternative investment options. However, over the mid to long-term, there is virtually no correlation shown. 6 and 12-month forward REIT returns correlated at approximately -0.08 to the 10-Year Treasury Yield.<sup>10</sup>

**10-Yr Treasury Yield Uncorrelated to 6 and 12-Month Forward REIT Returns<sup>10</sup>**

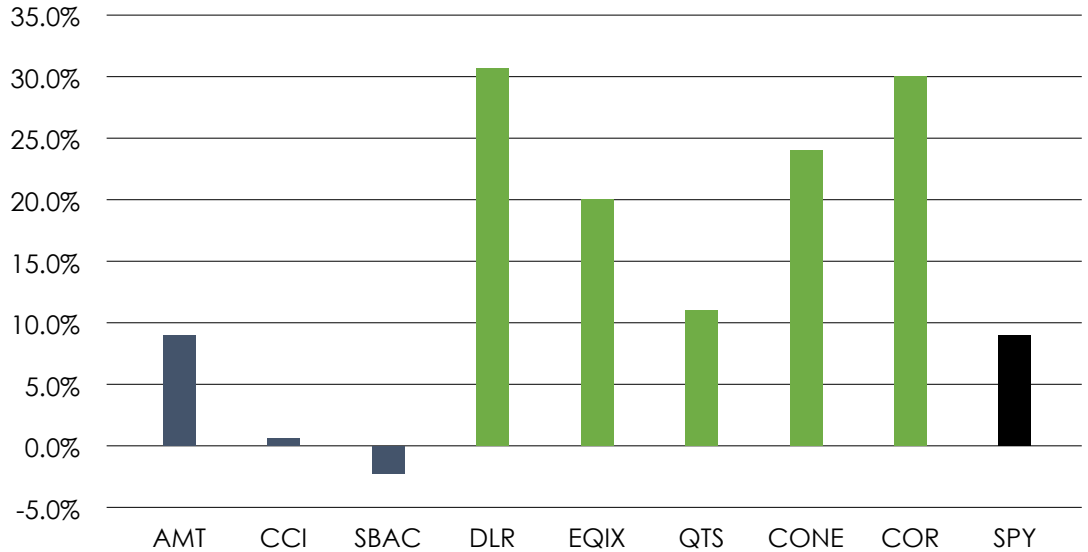


10. Barclays Research: Implications of Rising Interest Rates, 2019.

**Data Center & Tower REITs During the Previous Rate Hiking Cycle**

There is only a small sample size of public data center and tower REITs. However, during year one of the previous rate hiking cycle, data center REITs broadly outperformed the S&P 500 index, with price appreciation ranging from ~10.8% to over 30%.<sup>12</sup> Tower REITs were mixed, with SBA Communications declining 2.4% and American Tower gaining 9.2%. SPY increased 8.6% over the same time period.<sup>13</sup> Given the wide variety of outcomes, it's clear that interest rate hikes were not the driving force behind company performance in our opinion.

**Public Tower & Data Center REIT Price Appreciation in Year 1 of the Last Rate Hiking Cycle (12/16/2015-12/15/2016)<sup>13</sup>**



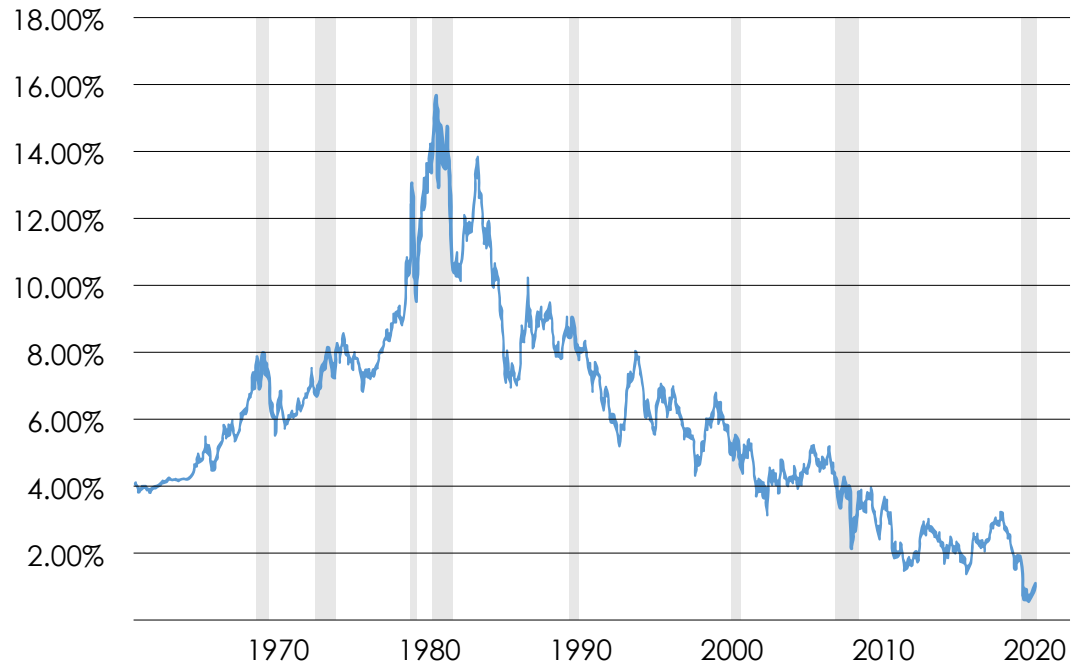
12. Barclays Equity Research: Data Center Scorecard Q4 2020.

13. Yahoo Finance, Historical Data, December 16, 2015-December 15, 2016.

### Treasury Yields Still Remain Near All-Time Lows

Despite an increase in rates over the last 6 months, current 10-Year Treasury yields of ~1.6% are still near all-time lows and have generally remained under ~3% over the last decade.<sup>14</sup> Given current national debt levels, it is expected that capital markets will continue to operate in a relatively low interest rate environment compared to historical rates.<sup>15</sup>

### Historical 10-Yr Treasury Yields<sup>15</sup>



14. Barclays Equity Research: Manager Call Feb 23, 2021.

15. Macrotrends.net, 10 Year Treasury Rate - 54 Year Historical Chart, April 9, 2021.

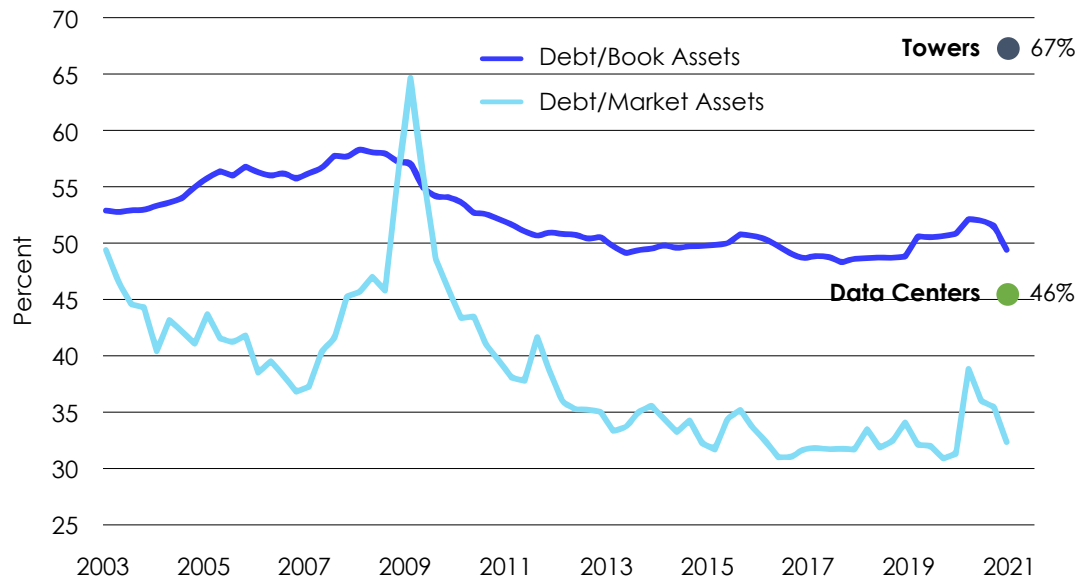
**REITs Are Generally Well Positioned**

Rising interest rates can potentially increase cost of debt for REITs and negatively impact their margins. Therefore, it's important evaluate debt exposure that a particular REIT may have in relation to its capital stack, cash flows and the terms of the indebtedness.

Broadly, listed equity REITs have been reducing debt to total assets since the previous recession and are generally well positioned. As of YE 2020, the largest five data center REITs have a weighted average debt to total assets ratio of ~46%.<sup>16</sup> The three major tower REITs have a weighted average debt to total assets ratio of ~67%.<sup>16</sup> Tower REITs generally employ higher leverage due to their strong recurring revenue streams and because they enjoy access to very low interest rates on debt financing.

Looking at cash flow exposure, generally REITs are also well positioned. Interest expense is only approximately 20% of net operating income (NOI) across all US listed equity REITs. Data center REITs and tower REITs have relatively low exposure, at ~12% and ~17% respectively. Additionally, there has been a trend of increasing average maturities of outstanding debt on REITs broadly, as well as in the digital infrastructure sector, as many companies have taken advantage of low interest rates and other favorable financing terms. Most data center and infrastructure REITs are also keeping debt to EBITDA ratios at approximately 6x or lower, with the exception of SBA Communications at over 7.2x.

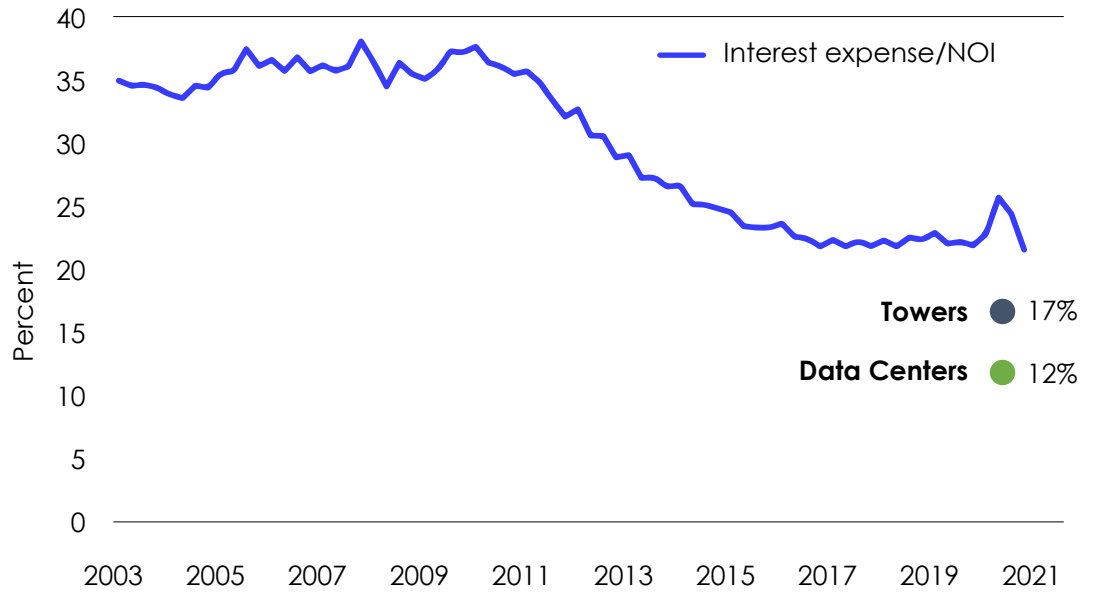
**Debt to Total Assets (All US Equity Listed REITs)<sup>16</sup>**



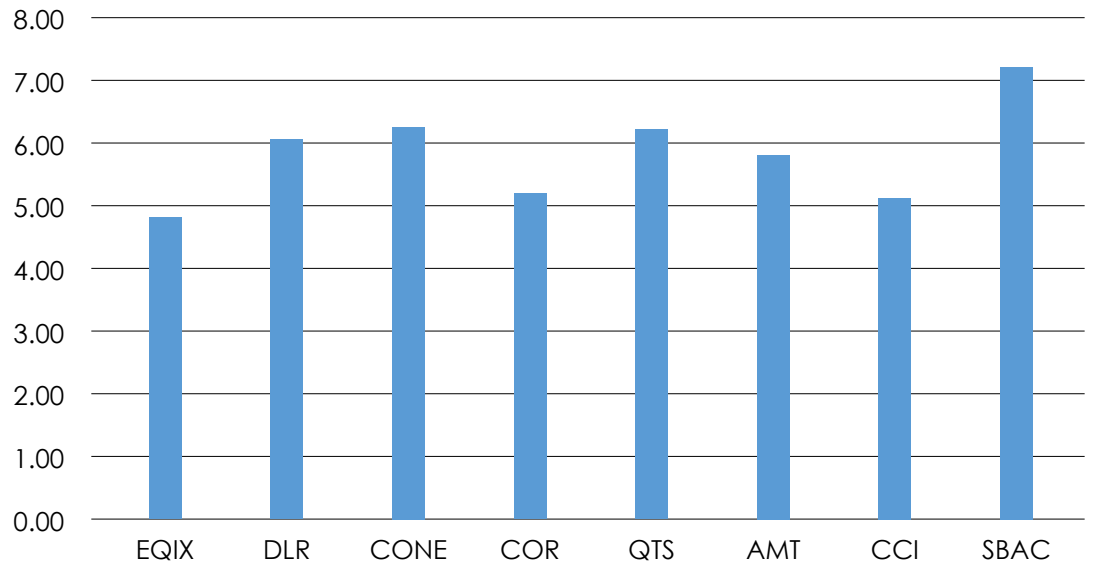
The information from this chart focuses on public REITs and is used for educational purposes only and to illustrate the current performance in these sectors. Private funds have different dynamics compared to publicly traded funds. These include expenses, access to capital, liquidity and others. There may be no correlation between the performance of public REITs or other funds and these investments.

16. NAREIT Tracker Data, Strategic Capital Fund Management Research.

Interest Expense to Net Operating Income (All US Equity Listed REITs)<sup>16</sup>



2020 Total Debt to EBITDA<sup>17</sup>



The information from these charts focuses on public REITs and is used for example only and to illustrate the current performance in these sectors. Private funds have different dynamics compared to publicly traded funds. These include expenses, access to capital, liquidity and others. There may be no correlation between the performance of public REITs or other funds and these investments.

16. NAREIT Tracker Data, Strategic Capital Fund Management Research.

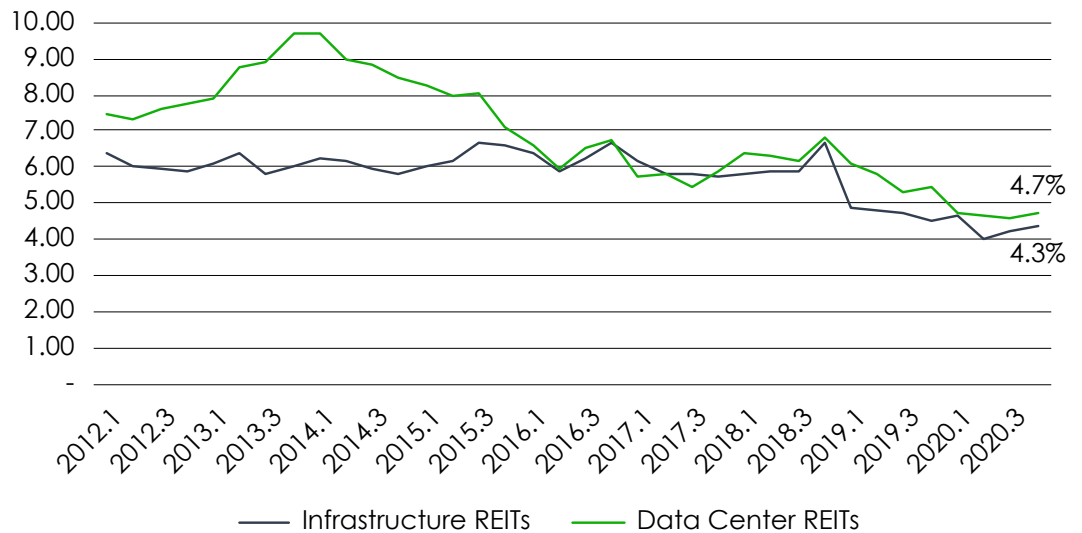
17. Company Filings, Strategic Capital Fund Management Research.

**Better Value May Be In the Private Markets**

Over the last seven years, implied cap rates on public data center REITs have been steadily declining as stock prices generally have risen across the sector. This means data center REIT valuation multiples have been expanding, as they trend closer toward infrastructure REIT valuations. Although public yields have increased slightly since Q3 2020, private market transactions are generally still offering higher cap rates than traded sector peers.<sup>18</sup>

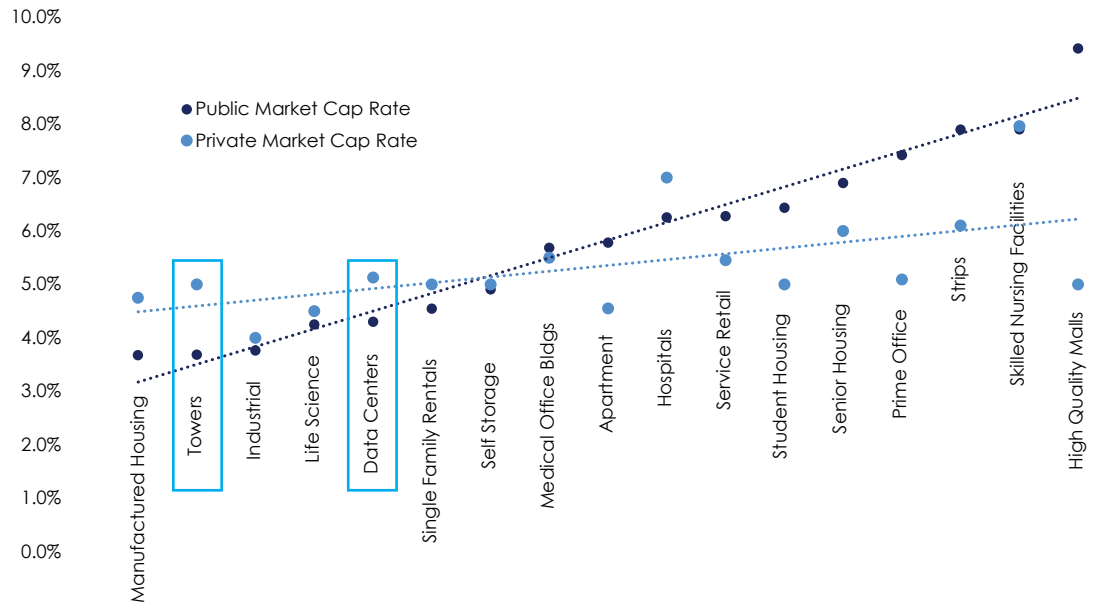
The datasets for digital infrastructure private transactions is highly nuanced, as the market is relatively fragmented and inefficient. We believe this market inefficiency allows experienced management teams to create value. Anecdotally, and in our proprietary private acquisition pipelines, we note that cap rates and CAD multiples are more attractive in private markets. For data centers, this is particularly true of secondary and tertiary markets on smaller acquisition sizes, particularly under \$50M. In the wireless infrastructure sector, acquisition pricing is generally 15-20%+ lower than current public tower REIT multiples.

**Public Data Center and Infrastructure REIT Implied Cap Rates (%)<sup>18</sup>**  
 Years 2012-2020, Quarterly



18. NAREIT TTracker Data, Strategic Capital Fund Management Research (as of March 31, 2021).

Private & Public Market Cap Rates<sup>19</sup>



Source: Bloomberg and CSIM as of August 2020

19. CenterSquare White Paper: The Alternative Real Estate Revolution, September 2020.

## // DATA CENTERS

### 2020 Data Center Market Trends

Looking back on 2020, unexpected COVID challenges led to record leasing activity and new opportunities in the data center sector. Five of the top ten markets in North America – Dallas, Phoenix, Northern California, Northern Virginia and New Jersey – had their largest growth year ever. Two other top ten markets – Atlanta and Chicago – had their second best year ever.<sup>20</sup>

#### COVID Pandemic Forced Digital Transformation

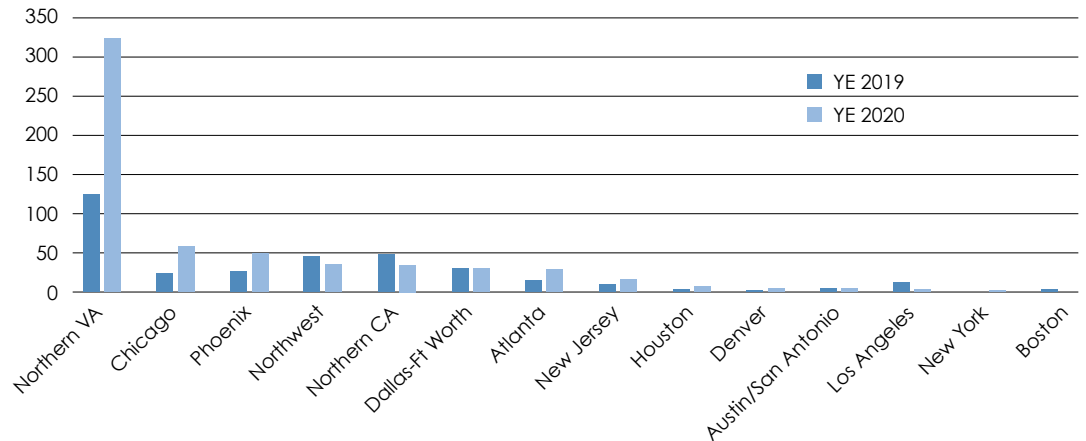
Many companies were forced to deal with their outdated IT infrastructure plans as the pandemic disrupted businesses across the globe and many organizations were forced to prepare remote work environments.<sup>21</sup>

#### Huge 2020 Leasing Surge, Demand Began Spreading Across More Major and Secondary Markets

After a record 2019, data center lease absorption in the top U.S. markets surged to a new all-time high in 2020. JLL reported a total of over 619 MW of absorption, an estimated increase of 72.9% compared to 2019.<sup>22</sup> Data Center Hawk estimated total absorption of closer to 680 MW for FY 2020.<sup>21</sup>

Leasing also began to spread across more than just the Northern Virginia epicenter. Maturing cloud providers began to move into smaller or additional strategic markets. On a global basis, public cloud computing has become an enormous business, generating over \$140 billion in revenues in 2020.<sup>23</sup>

#### Absorption (MW) by Market, Year End 2020<sup>22</sup>

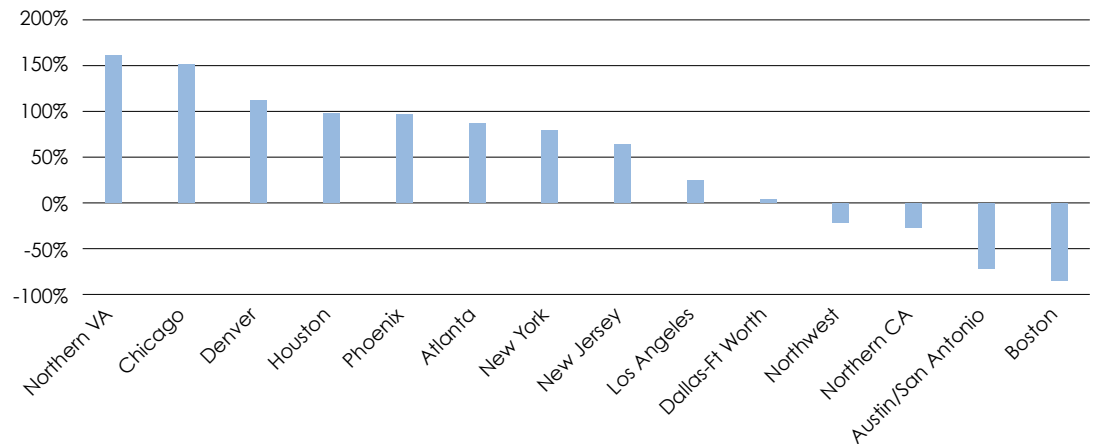


There is no guarantee that these trends will continue.

20. Data Center Hawk, 4Q Data Center Industry Analysis, February 2021.  
 21. Data Center Hawk, 4Q North American and European Data Center Market Analysis, February 2021.  
 22. JLL Research: 2020 Year End Data Center Outlook. March 15, 2021.  
 23. ARK Invest, Big Ideas 2021, January 26, 2021.



YoY Change in Absorption (%)<sup>22</sup>



In 4Q 2020, data center activity finished the year strong, primarily led by cloud provider expansion. Top North American markets grew by 4.4% in 4Q 2020, growing to 4,742 megawatts.<sup>24</sup>

Total absorption in 2020 was estimated at up to 680 MW, a record year driven by large cloud providers taking down large capacity to meet the massive uptick in demand from customers. Vacancy across all major US markets declined 7% for the year.<sup>25</sup>

Note that data center absorption is often lumpy, primarily due to big deals from a relatively small core group of less than 20 major hyperscale companies. Anecdotally, these operators have continued to increase their lease commitment sizes. Several years ago, it was not uncommon to see 4 MW+ leases. Over the last year, there have been single lease commitments north of 60 MW.<sup>26</sup>

22. JLL Research: 2020 Year End Data Center Outlook. March 15, 2021.

24. Data Center Hawk, 4Q North American and European Data Center Market Analysis, February 2021.

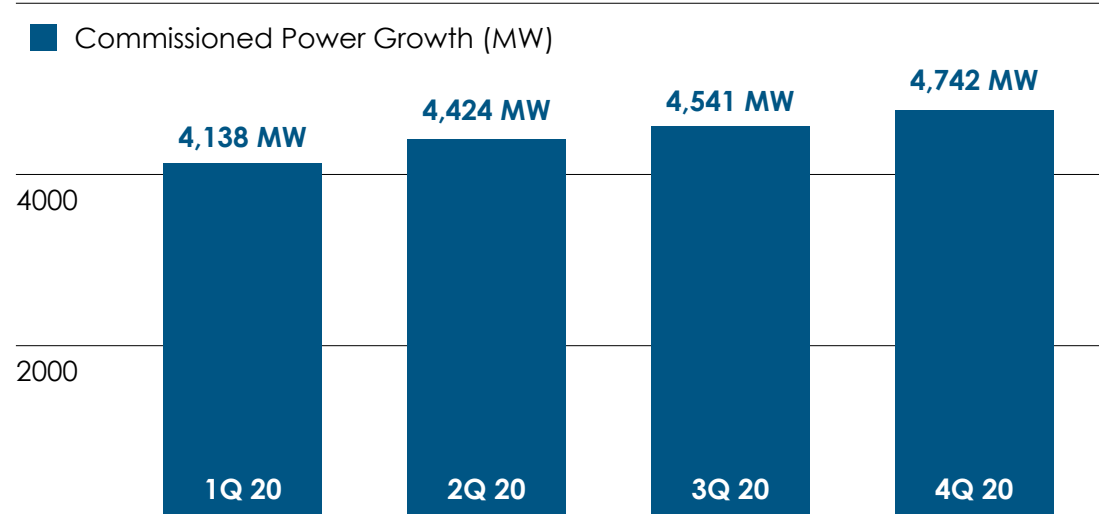
25. Cushman Wakefield, The Signal Report: Global Guide to CRE Investing in 2021, March 2021.

26. Data Center Hawk, 4Q Data Center Industry Analysis, February 2021.

It is expected that this increased level of investment and leasing activity will continue into 2021, as well as a bounce-back in leasing activity for colocation facilities later in 2021 through 2022.<sup>25, 27</sup>

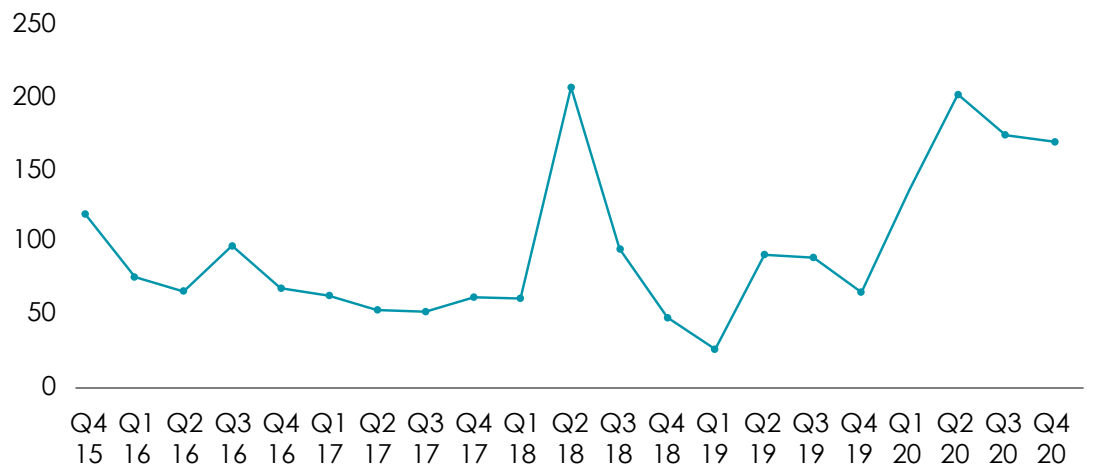
### 4Q 2020 Commissioned Power, Top North American Markets<sup>24</sup>

The top 18 North American data center markets grew by 4.4% in 4Q 2020



Note: Atlanta, Boston, Chicago, Dallas/Fort Worth, Houston, Los Angeles, Minneapolis, Montreal, New York, Northern California, Northern New Jersey, Northern Virginia, Phoenix, Portland, Quincy, San Antonio, Seattle, and Toronto are included in these figures. Pre-leasing in counted as commissioned power.

### U.S. Absorption (MW)<sup>25</sup>



C&W Research, Data Center Hawk

24. Data Center Hawk, 4Q North American and European Data Center Market Analysis, February 2021.

25. Cushman Wakefield, The Signal Report: Global Guide to CRE Investing in 2021, March 2021.

27. CBRE, Global Data Center Investor Sentiment Survey 2021, March 2021.

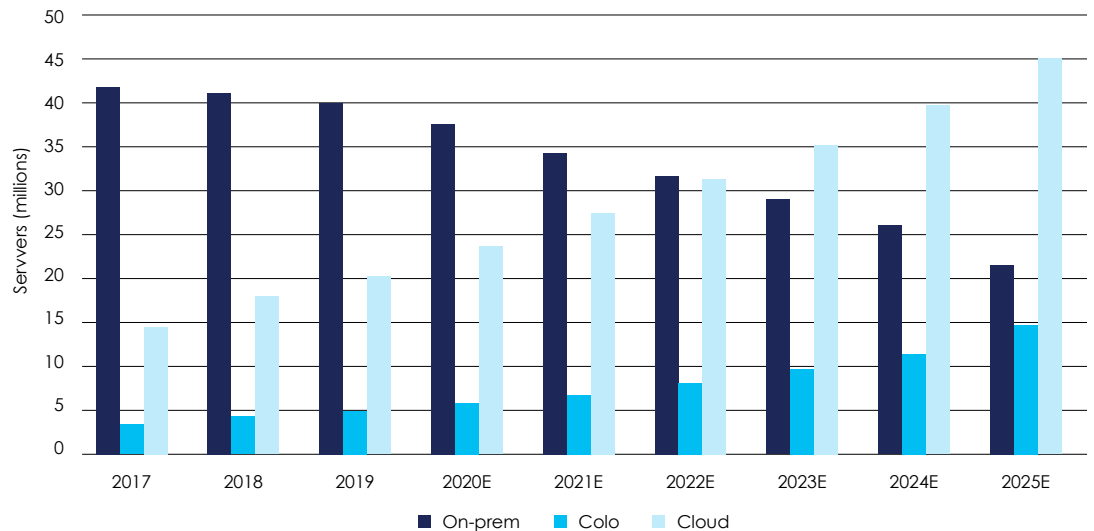
**Surging Web Traffic and Data Processing Pointing to Increased Need for New Edge Deployments**

Work from home (“WFH”) trends and newer technologies like 5G, autonomous vehicles, augmented reality and other emerging virtual use cases are signaling an increased need for Edge data center deployment. Edge data centers can provide data storage and computing power closer to the consumer and are designed to offload strain put on the networks to support these newer technologies.<sup>28</sup>

**Powered Shell and Shifts in Enterprise User Demand**

The powered shell approach is becoming more favorable as data center operators look to meet end-user demand, conserve capital and speed up time-to-market for new data center deployments. Enterprise users were generally more impacted by the pandemic, as some companies temporarily paused to reevaluate their needs and CapEx budgets. This segment has potential to be a major demand growth contributor in 2021 as these companies typically need significant IT infrastructure, managed and cloud services.<sup>28</sup> Despite growth in colocation and hyperscale cloud, there is still significant market need for enterprise data centers. Many companies are finding hybrid-cloud IT infrastructure as an optimal solution.

**Projected Servers Needed For On-Prem, Colo and Cloud Computing Needs <sup>29</sup>**



Source: 650 Group; Barclays Research

28. Data Center Hawk, 4Q North American and European Data Center Market Analysis, February 2021.

29. Barclays Equity Research: US Communications Infrastructure: Towers/Data Center initiation.

## **/ DATA CENTERS**

### **Notable Market Activity and Transactions**

#### **January 2021**

- » Blackstone's JV acquisition of 90% interest in eight single tenant powered shells totaling 1.3 million square feet, valued at \$293 million.<sup>30</sup>
- » Harrison Street & 1547 Critical Systems Realty acquisition of Pittock Block, a carrier hotel located in downtown Portland for \$326 million.<sup>30</sup>

#### **December 2020**

- » DataBank's acquisition of zColo's U.S. and U.K. data center assets consisting of 44 data centers in 23 markets for an undisclosed sum.<sup>30</sup>

#### **October 2020**

- » Goldman Sachs invests an initial \$500mn in Global Compute Infrastructure, LP to target data centers.<sup>31</sup>
- » Equinix's acquisition of thirteen data centers in Canada, consisting of 1.2 million gross square feet, and their operations from BCE Inc. ("Bell") for \$780 million.<sup>32</sup>

#### **September 2020**

- » GI Partners closes its first digital infra fund at \$1.8bn.<sup>33</sup>

#### **August 2020**

- » EQT Infrastructure's acquisition of EdgeConnex for \$2.75 billion, including over 40 facilities in 33 markets across North America, Europe and South America.<sup>30</sup>

#### **March 2020**

- » EQT and Digital Colony acquire Zayo, which has 133,000-mile fiber network in North America and Europe. Zayo owns and operates a Tier 1 IP Backbone and 44 carrier-neutral data centers.<sup>30</sup>

#### **February 2020**

- » Brookfield announces it will allocate 15% of its \$20bn mega-fund to digital infrastructure.<sup>34</sup>

30. CBRE Research, Global Data Center Investor Sentiment Survey 2021, March 2021.

31. Business Wire, "Goldman Sachs Merchant Banking Division Partners With Leading Data Infrastructure Management Team and Commits up to \$500 Million to Form Data Center Platform, Global Compute", October 20, 2020.

32. Equinix.com, "Equinix Completes US\$780 Million Acquisition of 13 Bell Data Centers in Canada", October 1, 2020.

33. Infrastructure Investor, "GI Partners closes fundraising on debut data infra fund at \$1.8bn", September 8, 2020.

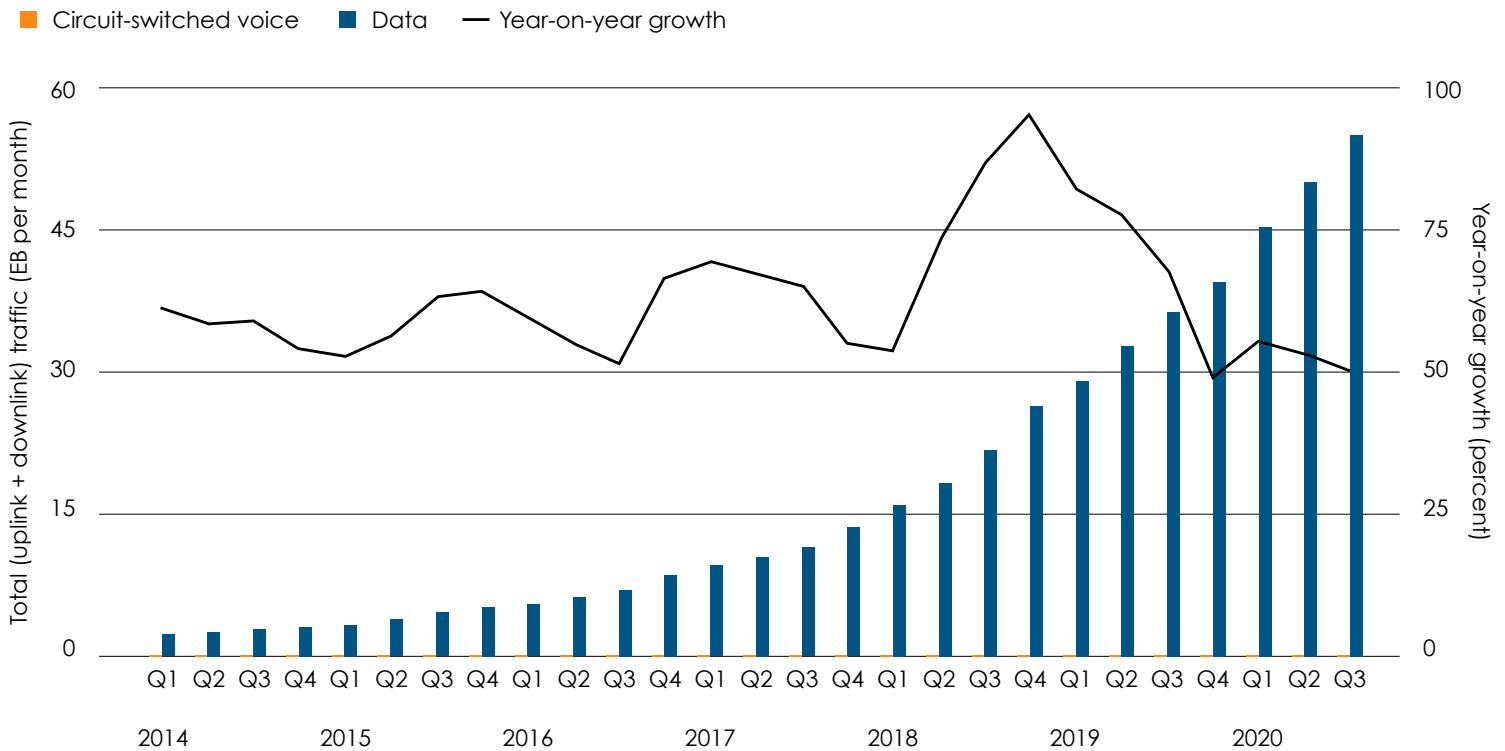
34. Infrastructure Investor, "Digital is the new infrastructure darling", October 1, 2020.

## WIRELESS INFRASTRUCTURE

### 2020 Wireless Infrastructure Industry Trends

#### Continued Growth in Mobile Data Traffic

With pre-COVID data traffic growth rates already at ~30-40%, carrier networks experienced an additional surge in demand in 2020 as result of COVID-19, supporting the need for additional infrastructure. COVID-19 related restrictions continue to be reflected in consumer communication patterns. Over the long-term, mobile data traffic growth is driven by both the rising number of smartphone subscriptions and increasing data volumes per subscription, fueled primarily by video streaming and other data-hungry applications. Generally, mobile traffic is to a certain extent still geographically shifted from public and office locations to homes and remote work locations.<sup>35</sup>



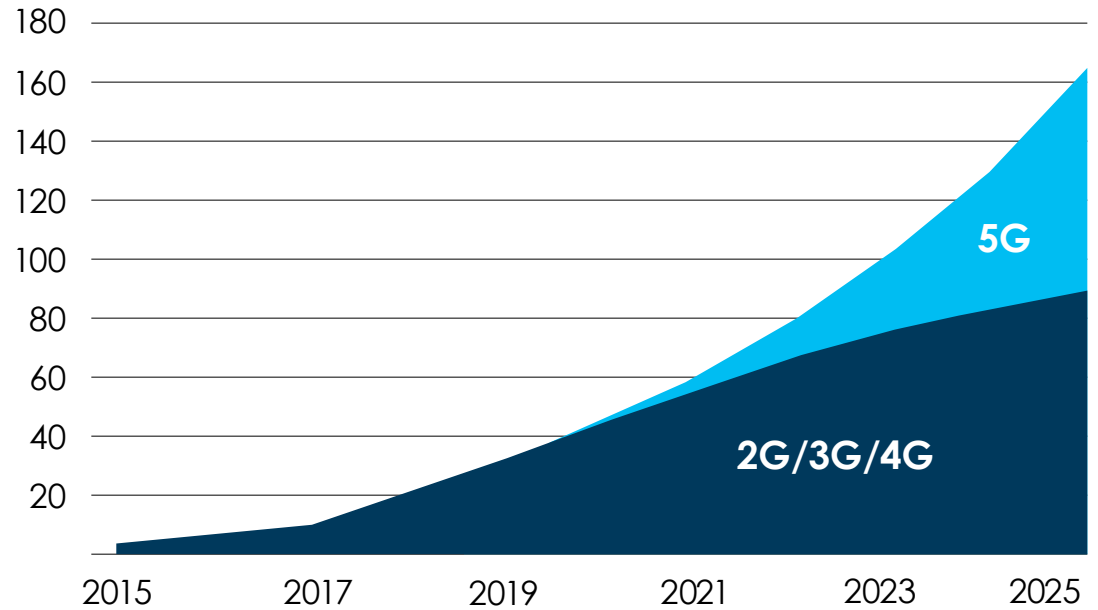
Note: Mobile network data traffic also includes traffic generated by fixed wireless access (FWA) services.

35. Ericsson Mobility Report, November 2020.

**No Immediate End in Sight for Mobile Data Traffic Growth**

Global total mobile data traffic is estimated to reach around 51EB per month by the end of 2020 and is projected to grow by a factor of around 4.5 to reach 226EB per month by 2026. This figure represents the mobile data that will be consumed by more than 6 billion people using smartphones, laptops and a multitude of new devices at that time. Video traffic currently accounts for 66 percent of all mobile data traffic, a share that is forecast to increase to 77 percent by 2026.<sup>35</sup>

**Global Mobile Data Traffic Growth (EB Per Month) <sup>35</sup>**



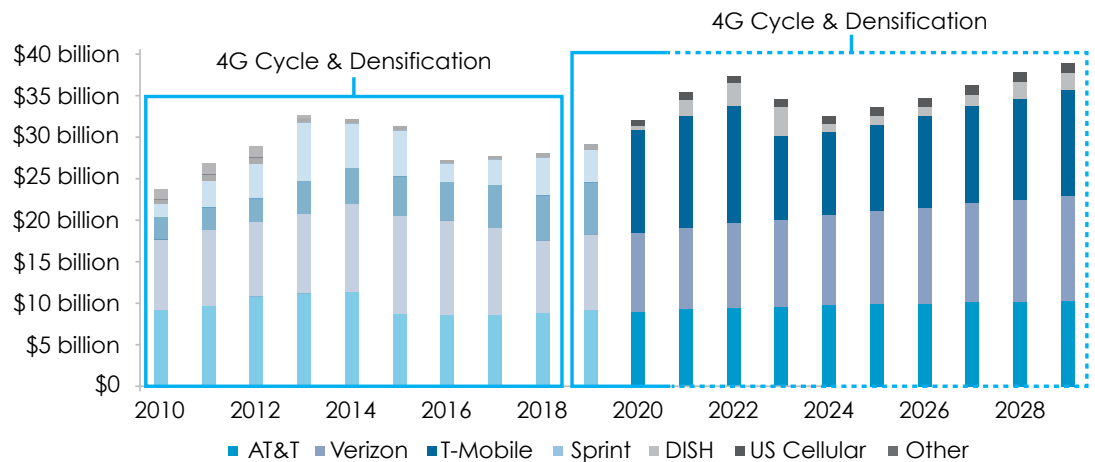
35. Ericsson Mobility Report, November 2020.

### Carrier Activity Levels Rising

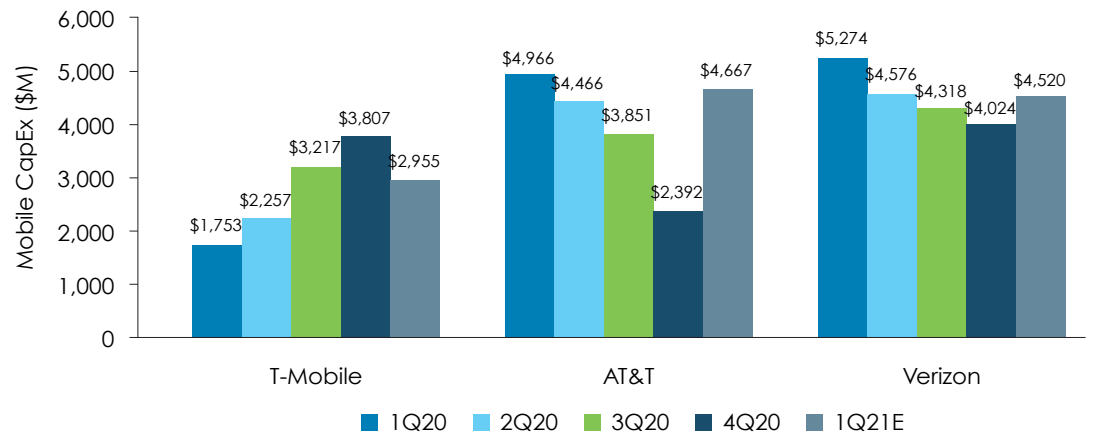
Major tower companies reported year-over-year increases in activity from the nations largest carriers, led by the new T-Mobile, following its merger with Sprint in April 2020.<sup>36</sup> Acquiring mobile broadband spectrum and nationwide 5G network deployments, in addition to densifying current 4G/LTE coverage, remains top priority for carriers. Network densification and new broadband technology deployments are important positive indicators for wireless infrastructure companies, as these activities generally signal potential for increased activity in tower lease amendments, increased tenancy on existing sites and the demand for additional cell sites nationwide.<sup>37</sup>

Carrier CapEx is expected to ramp substantially during the 5G network deployment cycle and longer-term as the companies continue to densify their networks over the coming years. Verizon and AT&T CapEx declined in Q2-Q4 2020, as they likely anticipated the needed capital for the January 2021 C-band spectrum auction. CapEx for 2021 and into 2022+ is anticipated to rise as the carriers put the newly acquired spectrum to use on tens of thousands of cell sites across the country.<sup>36</sup>

### Annual U.S. Wireless Infrastructure Spending Projections<sup>38</sup>



### 2020 Carrier CapEx and Projected 1Q 2021<sup>36</sup>



Source: S&P Capital IQ.

36. Barclays Equity Research: Towerco Q4 State of the Industry.

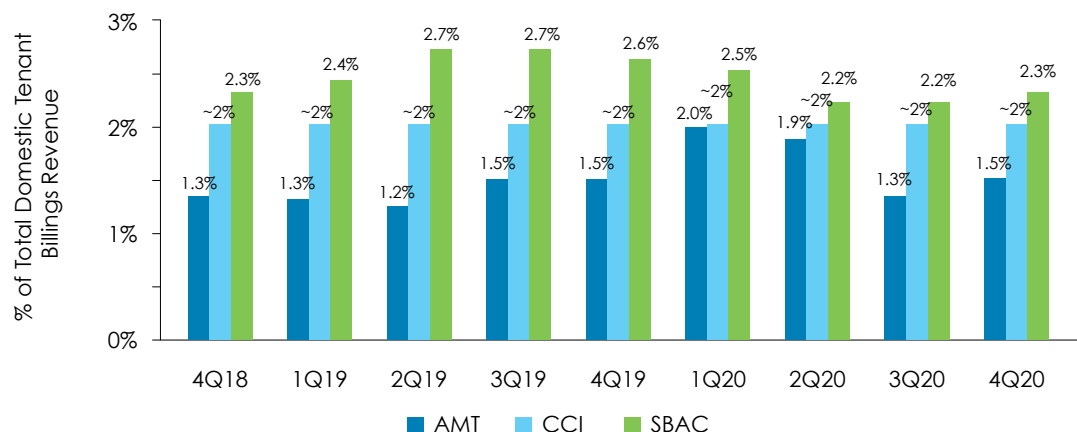
37. Credit Suisse Equity Research: 2021 Outlook, The Cloud Has Four Walls.

38. Deutsche Bank Research, citing company reports and their own estimates, Lightreading.com, "U.S. wireless carrier capex projected to grow 11% in 2021 to \$35B", June 29, 2020.

### Low Domestic Tenant Churn

Anchor tenants for tower companies have very high lease renewal rates, generally between 96-98%. This is primarily due to several key factors, including their need to maintain, expand and improve network coverage and capacity, costs of relocation, and network interruption due to the honeycomb-like design of cell sites. In 2020, tenant churn rates of the largest tower companies remained relatively steady, ranging from 1.3% to 2.5%.<sup>39</sup>

### Towerco Domestic Churn Rates<sup>39</sup>



### Record Breaking Mid-Band Spectrum Auction

C-band spectrum is an important component of the next generation wireless networks. These mid-band frequency waves are anticipated to be a large part of the nationwide 5G deployment on towers and other cell sites across the country utilized by the nations leading carriers.

In February 2021, the Federal Communications Commission ("FCC") announced the results of January's C-band auction, totaling bids of over \$81 billion. The top bids were led heavily by Verizon and AT&T, followed by T-Mobile. Verizon accounted for 56% of the total at over \$45 billion, awarded with 3,511 licenses in 406 Partial Economic Areas ("PEAs"). AT&T accounted for 29% at over \$23 billion, awarded with 1,621 licenses in 406 PEAs.<sup>40</sup>

### Amount Spend on C-band Bidding (\$billions)<sup>40</sup>

	Total C-band bids	% of total
VZ	\$45,455	56%
T	\$23,407	29%
TMUS	\$9,336	12%
DISH	\$3	0%
CHTR	\$0	0%
CMCSA	\$0	0%
COX	\$0	0%
Other Bidders	\$2,968	4%
<b>Total</b>	<b>\$81,169</b>	

39. Barclays Equity Research: Towerco Q4 State of the Industry.

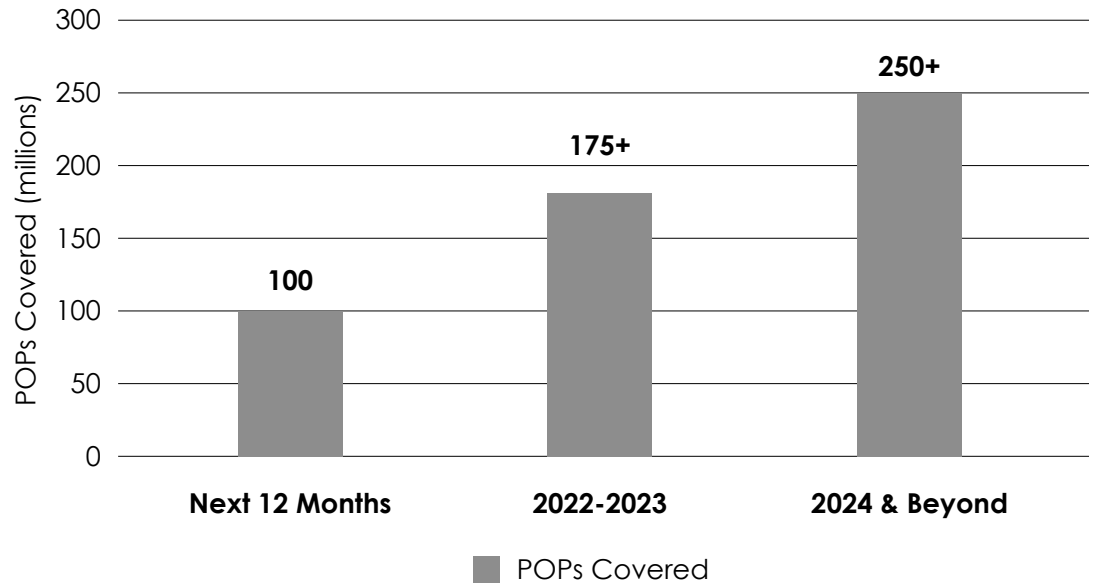
40. Barclays Credit Research: C-Band Auction Results: Telcos Dominate As CableCos Shrug; Financing Next.



### Verizon Releases C-band Build Plans

In its March 2021 Investor Day conference, Verizon released the company's plans to deploy C-band as part of its nationwide 5G rollout. Verizon plans to deploy C-band on 7,000-8,000 cell sites in 2021 on existing infrastructure, scaling into 2024E.<sup>41</sup>

#### Verizon C-band Build Plans<sup>41</sup>



### AT&T Expects to Deploy Some C-band in 2021

Following the C-band auction, AT&T announced that it expects to begin deploying the first 40 MHz of its C-band spectrum by the end of 2021, with the majority of its expected \$6-8 billion deployment spend to come in 2022-2024.<sup>42</sup>

41. Inside Towers, "Verizon Unveils C-Band Build Plans", March 12, 2021.

42. Fierce Wireless, "AT&T to spend up to \$8B on C-band deployment", March 12, 2021.

## **/ WIRELESS INFRASTRUCTURE**

### **Notable Market Activity and Transactions**

#### **February-March 2021**

- » DISH signs long term master lease agreements with American Tower, Crown Castle, SBA Communications, Vertical Bridge and seven other private towercos to gain access to up to an estimated 65,000+ cell sites across the U.S. and Puerto Rico in preparation to deploy their new nationwide 5G networks.<sup>43, 44</sup>

#### **February 2021**

- » AT&T enters into a deal with private equity firm TPG to spin off its underperforming DirecTV, AT&T TV and U-Verse businesses. Notably, AT&T will receive ~\$7.6 billion in cash at closing. This move is generally viewed as a positive for AT&T, as it gives them ability to pay down debt and focus on its connectivity and streaming assets.<sup>45</sup>

#### **January 2021**

- » American Tower Corporation announcing acquisition of Telxius Towers for ~\$9.4 billion, including approximately 31,000 existing communications sites in Germany, Spain, Brazil, Chile, Peru and Argentina. American Tower expects to spend an additional ~\$500 million to construct a committed pipeline of approximately 3,300 new sites in Germany and Brazil through 2025.<sup>46</sup>

#### **November 2020**

- » American Tower acquires InSite Wireless for \$3.5bn, including more than 1,400 towers in the U.S., more than 200 towers in Canada and about 70 DAS networks in the U.S.<sup>47</sup>
- » Melody Investment Advisors closes on the purchase of 1,150 cell towers from CTI Towers.<sup>48</sup>

#### **June 2020**

- » Melody Investment Advisors acquires approximately 500 towers from Uniti Towers for ~\$220 million.<sup>49</sup>

#### **March 2020**

- » Phoenix Tower purchases 197 cell towers from Tower Ventures for an undisclosed sum.<sup>50</sup>

43. Inside Towers, "American Tower and DISH Announce Long-Term Master Lease Agreement", March 15, 2021.

44. Inside Towers, "DISH Steps Up 5G Network Plans", February 23, 2021.

45. Barclays, Satellite TV and Wireless: Recovering the Satellites, March 3, 2021.

46. Business Wire, "American Tower Announces Telxius Towers Transaction", January 13, 2021.

47. Business Wire, "American Tower Closes InSite Wireless Group Acquisition", December 23, 2020.

48. PR Newswire, "Melody Investment Advisors Closes on Acquisition of CTI Towers", October 6, 2020.

49. PR Newswire, "Melody Investment Advisors Acquires Wireless Towers from Uniti", May 11, 2020.

50. PR Newswire, "Phoenix Tower International acquires 197 wireless communication tower sites located throughout the United States from Tower Ventures", March 5, 2020.

## **/ IMPORTANT INFORMATION**

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Investments in digital infrastructure are subject to various risks, including but not limited to the following:

- » Adverse changes in economic conditions including changes in the financial conditions of tenants, buyer and sellers, changes in the availability of debt financing, changes in interest rates, real estate tax rates and other operating expenses;
- » Adverse changes in law and regulation including environmental laws and regulations, zoning laws and other governmental rules and fiscal policies;
- » Environmental claims arising in respect of digital infrastructure acquired with undisclosed or unknown environmental problems or as to which inadequate reserves have been established;
- » Changes in the relative popularity of property types and locations;
- » Risks and operating problems arising out of the presence of certain construction materials; and

An investment in digital infrastructure involves a high degree of risk, including possible loss of principal amount invested, and is suitable only for sophisticated investors who can bear such losses. The value of shares/ units and their derived income may fall or rise.

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