Communications Infrastructure

4Q23 wrap: Raising SBAC to Buy, lowering CCOI to Neutral, raising DC POs

Rating Change

Riding the DC wave, flipping SBAC/CCOI ratings

We continue to prefer data center (DC) fundamentals over Towers as we head out of the 4Q23 earnings season but we refresh our ratings based on relative stock price movement and our earnings outlook for 2024 vs. the Street. We upgrade SBAC to Buy (from Neutral) as green shoots emerge for carrier tower demand in 2H24 and refi rates are materially better than expected. SBAC is trading at multi-year lows, pricing in, we believe, known '24/25 headwinds (Sprint churn/rates). We raise our DLR (Digital Realty) and EQIX (Equinix) POs on the back of: (1) strong demand; (2) operating leverage; and (3) lower interest rates coming. We also downgrade CCOI (Cogent) to Neutral (from Buy) as (1) wavelength business revenue, and (2) cost savings (network expense and SG&A) inflection points are taking longer to reach than we previously thought. We have updated our Comm Infra estimates and PO's inside on pg. 14 (see Exhibit 1).

Additional 4Q takeaways

Comm. infra. 4Q23 earnings season wrapped up with multiple companies posting 4Q23 beats and 2024 guidance coming in mixed. Two key sector themes continued to be prominent: (1) data center pricing power remains strong, underpinned by dislocated supply/demand dynamics; and (2) domestic wireless carrier activity remains muted relative to history for Towers. **EQIX** is our top data center pick (+10% upside potential) with its (1) Comm Infra leading AFFO/sh growth; (2) balance sheet quality; and (3) positive business momentum. **AMT** (American Tower) is our top tower pick (+17% upside potential) as we favor its (1) holistic domestic MLA (master lease agreement) contract structures; (2) diverse international and data center exposure (~50% of revenues); and (3) peer-leading AFFO/sh growth over the next two years. **DY** (Dycom) is our Top SMID cap pick (+11% upside potential, more inside). We remain positive on the DY story as (1) the current estimated backlog is at elevated levels, excluding BEAD funding; (2) it is well-positioned to monetize incremental telecom and cable company wireline buildout initiatives in 2024+; and (3) BEAD funding upside is coming.

Data centers see growth as AI demand just begins

Data center management teams highlighted the strong pricing power they continue to see. Al (artificial intelligence) opportunities continue to surface for both DLR and EQIX, but the teams caution we remain in the very early stages of Al demand as a whole. To capture early-stage Al training deployment opportunities, DLR is focused on evolving its development JV program, while EQIX's focus on xScale JVs has increased.

Tower fundamentals bottoming, 2H could see acceleration

Beyond idiosyncratic factors (e.g., AMT's India and FX), most investors are focused on when a ramp in domestic carrier activity may occur. We believe carrier activity and investor expectations/sentiment has bottomed, and there is potential for a 2H24/2025+ ramp. AMT has noted an expected increase in 2H24 services activity (typically a leading indicator of carrier deployments) while SBAC expects a level-loaded year, which we believe can be attributed to a more conservative approach given current line of sight.

BofA Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Refer to important disclosures on page 23 to 26. Analyst Certification on page 22. Price Objective Basis/Risk on page 20.

07 March 2024

Equity
United States
Communications and Internet
Infrastructure

David W. Barden, CFA Research Analyst BofAS

+1 646 855 1320 david.w.barden@bofa.com

Alexander Waters Research Analyst BofAS +1 646 855 0684 alexander.waters@bofa.com

Shipra Pandey Research Analyst BofAS +1 646 743 6337 shipra.pandey2@bofa.com

Exhibit 1: BofA ratings for featured companies

Ratings, PO, and multiples for companies discussed herein

	PO	Rating	Multiple
AMT	240	Buy	22.0x
CCI	120	Neutral	17.0x
CCOI	75	Neutral	14*
DLR	170	Buy	24.5x
DY	149	Buy	9.0x*
EQIX	1,000	Buy	26x
SBAC	260	Buy	19.5x
UNIT	3.50	U/P	7.0x*

Source: BofA Global Research Note: Multiples based on '24 AFFO/sh for AMT, CCI, and SBAC. DLR and EQIX are based '25 AFFO and

Core FFO/sh, CCOI, DY, and UNIT are '24 EV/EBITDA.

BofA GLOBAL RESEARCH

BEAD: Broadband Equity, Access, and Deployment program

Comm. infra.: Communications Infrastructure

DC: Data Center

Contents

Updating our Comm Infra ratings	3
AMT 4Q23 wrap	6
CCI 4Q23 wrap	7
CCOI 4Q23 wrap	8
DY FY4Q24 wrap	9
DLR 4Q23 Wrap	10
EQIX 4Q23 wrap	11
SBAC 4Q23 wrap	13
UNIT 4Q23 wrap	14
Estimate changes and PO adjustments	15
Telco/Comm Infra comp table	19



Updating our Comm Infra ratings

SBAC to Buy on historically low valuation, solid outlook

In the middle of 2023 we downgraded SBAC and CCI to Neutral (see our 2023 Comm Infra wrap report here) after tower management teams noted an 'abrupt' decline in carrier activity and shared expectations for a weak deployment outlook for 2H23. This news, couple with a higher-for-longer rates outlook, translated into deteriorating investor sentiment and negative estimate revisions.

In the aftermath, tower companies now trade at or near 2017 valuation lows. Coming out of 4Q23 earnings, we believe carrier activity expectations have bottomed and there is potential for 2H24/2025+ improvement. AMT expects increased 2H24 services activity (typically a leading indicator of carrier deployments) while SBAC expects a level-loaded year, which we attribute to a more conservative public posture from the new senior management team. We do not expect robust new activity from domestic wireless carriers in 1H24, but we do believe any incremental (inevitable in our view) activity will represent upside to consensus estimates and renew positive Tower stock sentiment.

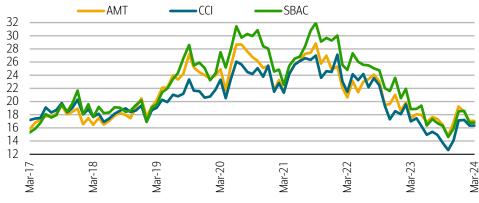
We upgrade SBAC to Buy from Neutral. We believe the following:

- 1. There is inevitable upside to domestic carrier macro tower activity to meet growing customer demand despite decade low valuations;
- 2. There is a rising chance of accelerating buybacks with leverage well below the company's target range, sitting at its lowest level in decades;
- The downside impact of upcoming 2025/26 Sprint churn is well understood by the market;
- 4. Interest expense headwind concerns will diminish as the potential for rate cuts in 2024+ grows.

We continue to view AMT as our top tower pick for its peer-leading AFFO/sh growth in 2024/25 but we also believe SBAC's current valuation of ~16x 2025 AFFO is now compelling. We reiterate our SBAC \$260 PO (~20% upside), which is based on a ~19.5x 2024 AFFO/sh multiple (or 19.0x 2025 AFFO/sh multiple). We also lower our refinancing interest rate assumptions to 4% from approx. 5.5% as SBAC has shown the ability to issue debt (or swap rates) at sub 4% rates.

Exhibit 2: Tower consensus AFFO/sh multiples over time

On an AFFO/sh t+1 multiple basis, Towers are trading at or under 2017 levels



Source: Bloomberg, BofA Global Research, Visible Alpha

Lowering CCOI, tempering merger execution expectations

We upgraded CCOI to buy shortly after the Sprint Wireline acquisition closed in May 2023 (see <u>our upgrade report here</u>) on the belief that (1) the newly launched wavelength business would add a new revenue growth vector; (2) the market underappreciated the breadth of payments to be received from TMUS; and (3) there would be significant cost savings realization once the asset was under CCOI ownership.

We are now almost one-year past the close of the acquisition and, current course and speed, some of the timelines/milestones we previously anticipated, and still expect, have been pushed out. Wavelength provisioning and its attendant revenue realization has been delayed due to underlying network conversion/optimization delays (something CCOI is working to improve). Costs are likely to remain elevated relative to the savings we originally anticipated in our model.

Longer term, we are believers in CCOI's business opportunity, inclusive of the wavelength business addressable market, and its ability to cut costs. Until the company can show investors material progress, however, we downgrade to Neutral (from Buy) as a positive inflection point seems more likely in 2025 vs. mid-year 2024 as we previously thought. Our \$75 PO (from \$85) represents a 14x 2024 EV/EBITDA multiple, in line with our prior multiple as our estimates now reflect the revenue and cost savings delays just mentioned. A 14x multiple is still a strong premium to historical multiples for wireline network operators.

Bumping data center POs as demand outlook strengthens

We have been bullish on the data center names for some time on the belief that strong secular demand for the economic benefits of shared infrastructure coupled with a dislocated supply/demand dynamic would translate into growing pricing power for traditional data centers. Both DLR and EQIX have materially outperformed tower companies year as the demand outlook, and sentiment, has only improved with the mainstream emergence of Gen AI beginning in mid-2023.

Both DLR and EQIX are starting to capture the very early beginnings of Al demand but we believe the vast majority of the total opportunity is yet to come. The supply picture, conversely, remains problematic given ongoing power procurement issues from utilities, which has pushed out new data center commencements globally. Outside of these fundamental factors, we believe falling interest rates will be a tailwind for both DLR and EQIX estimates, similar to towers, but we note DLR will likely benefit most from interest rate declines in the coming years.

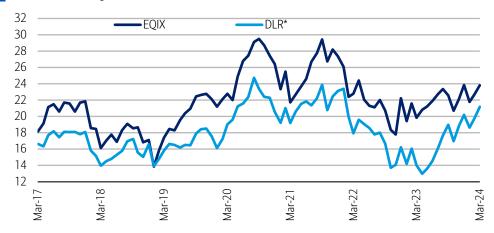
We increase our data center POs as we come out of earnings and roll forward to 2025 multiples.

- **DLR:** We raise our PO to \$170 (from \$150) based on a ~24.5x 2025E Core FFO/sh multiple (from ~22x on 2024 Core FFO/sh). This is a discount to its closet data center peer at 26x but a premium to the broader REIT average of ~18x.
- **EQIX:** We increase our PO to \$1,000 (from \$870), which is based on a ~26x 2025E AFFO/sh multiple (from 25x on 2024 AFFO/sh).

Historically, EQIX has traded at a ~3x AFFO multiple premium to DLR (Exhibit 3) and we anticipate this relationship will continue. Both EQIX and DLR project solid 2024 top-line revenue growth but at the bottom line (AFFO or Core FFO metrics) there are diverging stories. DLR expects to grow low-single digits and EQIX expects high-single digit growth in 2024. Strong bottom-line growth at EQIX underpins our Top Pick thesis, while DLR is more of a 'show me story' in this respect. DLR has long been a slower growth story than EQIX due to dilutive M&A, equity issuance, etc. This said, investors have shown they are able to look past this in anticipation of better growth in the future given top-line trends. We believe this will continue and the potential for lower rates and accretive corporate actions will improve DLR's Core FFO/sh growth into 2025E.



Exhibit 3: Data center consensus AFFO/sh multiples over time DLR is almost trading at its richest valuation



Source: Bloomberg, BofA Global Research, Visible Alpha

Note: DLR is Core FFO/sh



AMT 4Q23 wrap

AMT reported 4Q23 results that slightly beat on revenue and adj. EBITDA. AFFO/sh attributable to AMT beat estimates but was helped by including 'AFFO for unconsolidated affiliates and noncontrolling interests' (see 4Q23 AMT First Look report). AMT's 2024 guidance came in line vs. the Street on select financial metrics, but it includes a full year contribution from the India business. AMT shared its expectations for the India business contribution assuming an October 1, 2024 close (more below).

Exhibit 4: AMT 4Q23 Key Metric Summary

AMT reported 4Q23 results in line with BofA estimates

	Actual	BofA est.		Co	ns.
	4Q23	4Q23E	+/-%	4Q23E	+/-%
Revenues					
Domestic revenue	1,301	1,292	0.7%	1,296	0.4%
Data Center revenue	215	205	4.9%	219	-2.0%
International revenues	1,250	1,216	2.8%	1,199	4.3%
Total property revenue	2,766	2,713	2.0%	2,713	1.9%
Services revenue	21	27	-22.5%	24	-13.0%
Total revenue	2,787	2,740	1.7%	2,738	1.8%
Organic run-rate revenue					
Africa	208	205	1.7%	205	1.4%
Asia	163	160	1.6%	160	1.6%
Europe	124	124	0.1%	124	-0.2%
LatAm	276	275	0.5%	274	0.8%
US/Canada	1,164	1,160	0.3%	1,162	0.1%
Other metrics					
Adjusted EBITDA	1,761	1,733	1.6%	1,739	1.3%
AFFO attributable to AMT	1,070	1,038	3.1%	1,037	3.2%
AFFO attributable per share	2.29	2.23	2.7%	2.22	3.2%
Interest expense	351	356	-1.5%	360	-2.6%

Source: BofA Global Research estimates, Visible Alpha consensus, company reports

BofA GLOBAL RESEARCH

- **Domestic tower activity:** AMT anticipates 2024 domestic colocation/amendments of \$180-190mn, which underpins 4.7% organic 2024 revenue growth. Management noted it had one carrier comprehensive MLA roll off into a more activity-based MLA. There is anticipation of its tower services business gross margin increasing in 2024 to \$100mn (+\$16mn y/y). AMT is currently seeing customers making plans via RF (radio frequency) sheet activity, which has caused management to believe services will be more weighted towards 2H24.
- India sale: The \$2.5bn sale of the India business is expected to close in 2H24. The
 India business is expected to contribute 4Q24 revenue, adj. EBITDA, and AFFO/sh
 attributable of \$295mn, \$95mn, and \$0.09, respectively. AMT intends to use the
 proceeds to pay down \$2-2.5bn of revolver debt. Our model still reflects the
 divestiture occurring in 4Q24.
- Capital allocation: AMT ended 2023 with net leverage at 5.2x vs. its leverage post the CoreSite acquisition of 6.8x in 4Q21. AMT remains above its longer-term leverage target of 3.0x-5.0x and believes it will be within the target range by year-end 2024. There remains a dislocation between private and public M&A multiples and management noted 'there is no portfolio out there today' which meets its investment criteria. AMT will hold its annual dividend flat y/y, indicating a q/q step down in the dividend to \$1.62 per share (from \$1.70).
- **International expectations:** AMT expects the following: Africa (7% colo growth y/y, 4% churn y/y); Asia (3.5%/4%); Europe (3-4%/1%); and Latin America (5%/3%).



CCI 4Q23 wrap

CCI reported results that were in line with BofAe and the Street on adj. EBITDA and AFFO/sh (see 4023 CCI First Look report). With results, CCI maintained 2024 guidance for revenues, adj. EBITDA, and AFFO/sh. Long-time CFO Dan Schlanger will remain in his role after it was previously announced he would depart the company on March 31, 2024. Mike Kavanagh (COO) was appointed to EVP and COO of the Tower business. Finally, select members of the board of directors are 'progressing' with the strategic review of CCI's fiber business as well as conducting a search for CCI's next CEO, after CEO Jay Brown retired.

Exhibit 5: 4Q23 Actual vs. BofA/Cons. estimates

Reported results were in-line with estimates

	Actual	BofAe	+/-%	Cons.	+/-%
Revenues					
Tower site revenues	1,079	1,082	-0.3%	1,078	0.1%
Fiber site revenues	524	511	2.6%	506	3.5%
Site Rental Revenues	1,603	1,593	0.7%	1,584	1.2%
Network services	71	85	-16.8%	76	-6.5%
Total revenues	1,674	1,678	-0.2%	1,659	0.9%
Segment info					
Tower new leasing	32.0	32.3	-0.8%	30.8	3.7%
Tower churn	(7.0)	(7.1)	-0.8%	(8.8)	-20.7%
Fiber & Small cell new leasing	47.0	47.1	-0.3%	50.1	-6.2%
Fiber & Small churn	(30.0)	(30.0)	-0.1%	(36.5)	-17.9%
Other metrics					
Adj. EBITDA	1,076	1,071	0.5%	1,062	1.3%
AFFO/sh	1.82	1.79	1.5%	1.80	1.1%
Interest expense	223	234	-4.5%	223	-0.1%

Source: BofA Global Research estimates, Company reports, Visible Alpha

BofA GLOBAL RESEARCH

Key conference call items

We previously published our 4Q23 CCI earnings wrap (see <u>report here</u>) and note our takeaways below.

- Board of Director actions and mgmt. activity: CCI's newly enlarged board of directors is steeped in: (1) a strategic review of the fiber/small cell business; and (2) the search for a new CEO. Management did not share further color regarding either process on the 4Q conference call besides saying both are 'ongoing'. It is unclear if the plan is to create a plan and optimize CEO process to an individual best-suited to execute the plan, or the plan is to find a CEO best-suited to forge and own a new plan. CCI's CFO Dan Schlanger will remain in his role as CFO after it was previously announced he would depart the company on March 31, 2024. We believe at least some degree of overhang will persist in the near term as CCI works through its fiber/small cell business strategic review and ongoing CEO search process.
- **Small cells:** CCI completed 8k small cell nodes in 2023 along with 2k nodes completed towards the end of the year, which will begin billing in 1Q24. The majority of CCI's ~50k small cell backlog (vs. ~65k nodes on air) is comprised of orders from T-Mobile and Verizon and ~60% of the nodes are colocation. CCI continues to expect 'double-digit' small cell revenue growth in 2024, yet we note on the margin it does not move our numbers much since it comprises ~10% of CCI's revenues.



CCOI 4Q23 wrap

Exhibit 6: CCOI 4Q23 actual results vs. estimates

CCOI missed adj. EBITDA in 4Q23 vs. BofA and the Street

	4Q23	4Q23		4Q23	
	CCOI	BofA	+/-	Cons	
On-Net	141.2	130.6	8.1%	129.4	9.1%
Off-Net	123.7	124.4	-0.6%	126.5	-2.2%
Wavelength	*	7.3		4.4	
Non-core	7.3	7.4	-2.2%	8.8	-17.5%
Total Revenue	272.1	269.8	0.9%	269.1	1.1%
Network expense	174.2	167.2	4.1%	167.7	3.9%
SG&A	74.9	62.0	20.7%	59.0	27.0%
Adj. EBITDA	110.5	128.0	-13.6%	131.5	-16.0%
EBITDA mgn.	40.6%	47.4%	-14.4%	48.9%	-16.9%
Operational					
On-net conns.	88,733.0	89,965.9	-1.4%	91,126.0	-2.6%
Off-net conns.	36,895.0	35,685.5	3.4%	36,004.0	2.5%

Source: BofA Global Research estimates, company reports, Visible Alpha consensus

BofA GLOBAL RESEARCH

- Wavelength business: CCOI no longer anticipates ~\$20mn of wavelength revenues by 2Q24, as provisioning times remain elongated. Overall, wavelength provisioning has been impacted by ongoing network optimizations. To date, CCOI has sold wavelengths in 62 locations and has 285 additional locations that can provision waves. By the end of 2024, CCOI is 'feverishly' working towards being able to offer wavelengths in 800 locations. To do so, CCOI needs to: (1) interconnect the legacy CCOI network and Sprint network; (2) deploy transponder shells to accept wavelengths; and (3) reconfigure metro network rings, amongst other items. It is also working to have wavelength provisioning windows decrease from 60-120 days currently to less than two weeks for provisioning.
- Opex and SG&A costs: In 2024, CCOI expects SG&A costs to be around 27% of revenues for the next couple quarters, before declining into the mid- to low-20% of revenues after it is completed with severance payments for Sprint employees. On the network expense front, CCOI expects opex to decline gradually from ~64% in 4Q23.
- **Longer-term financial metrics**: CCOI expects to grow 2024 EBITDA marginally when compared to 2023. Longer term, management remains comfortable about hitting \$1.5bn revenues and \$500mn of wavelength revenues by 2028.



^{*} CCOI did not provide financial metrics for its wavelength segment

DY FY4Q24 wrap

DY reported FY4Q24 results that missed BofA and Street estimates on revenues and adj. EBITDA (see our FY4Q24 DY First Look report). DY is anticipating 1Q25 revenues to be 'in line to slightly lower' y/y and also include ~\$60mn of revenues from the Bigham Construction acquisition. This implies ~\$1,100mn of 1Q25 contract revenues vs. BofAe/Street at \$1,100mn/\$1,089mn. Adj. EBITDA margins are expected to expand by 25-75bps y/y (vs. BofAe/Street at 44/23bps). Looking ahead to 2Q25, DY mgmt. expects organic revenue growth (ex. acquired revenues from Bigham) to resume.

Exhibit 7: DY's FY4Q24 results were below BofA/Street estimates

BofA vs. Street estimates

Metric	Reported	BofA	+/-	Cons.	+/-
Revenues	952.5	969.4	-1.8%	969.8	-1.8%
Adj. EBITDA	93.7	98.9	-5.3%	97.9	-4.3%
Adj. EBITDA mgn	9.8%	10.2%		10.1%	
Net Income	23.4	27.2	-14.0%	27.9	-16.0%
EPS	0.79	0.92	-13.9%	0.94	-16.0%

Source: BofA Global Research estimates, Visible Alpha

BofA GLOBAL RESEARCH

- 4Q24 items: Much of the revenue miss was driven by January weather, limiting
 construction working days in the field more than average. Mgmt. noted adj. EBITDA
 margins, which came in at the lower end of guidance, were tracking 'a little ahead'
 of guidance before the impacts of weather.
- **Backlog growth:** DY continues to have a constructive view on the demand outlook for wireline deployments in FY2025. As of 4Q24, the estimated project backlog stood at \$6.92bn (NTM \$3.97bn), +24% higher than it stood at FY1Q23, driven by new bookings as well as renewals of existing contracts. Mgmt. believes backlog growth remains supportive of FY2025/26 business and noted there is nothing associated with BEAD funding within the current backlog. After a lumpy FY2024 given lack of weather impacts and customer front-end capex loading, DY expects to see customer activity picking up throughout 2025. Lastly, mgmt. continues to be 'encouraged' by the improvement in economic conditions and expects a lower-rate environment, relative to last year, to be conducive to industry growth.
- **BEAD funding:** The \$40bn BEAD funding process continues to evolve at the state level, as all states and territories have submitted proposals for NTIA (National Telecommunications and Information Administration). To date, one state has completed all required steps to receive funding, while ~15 others are close to receiving approval. Overall, BEAD funding is expected to start to flow to the states starting in April 2024, but we believe the vast majority will be allocated by CY2Q25, after which could mean revenues flowing to DY starting in late CY2025 and into CY2026.



DLR 4Q23 Wrap

DLR reported 4Q23 results that beat on adj. EBITDA vs. BofAe/Street and came in line on Core FFO/sh vs. Street estimates (see 4Q23 DLR First Look report). DLR's 2024 guidance came in mixed vs. the Street on select financial metrics. The revenue and Core FFO/sh guidance range is below Street estimates while adj. EBITDA guidance range is in line. DLR expects 2024 revenue of \$5,550-5,650mn (BofAe \$5,658mn/Street \$5,750mn), adj. EBITDA of \$2,800-2,900mn (BofAe \$2,817mn/Street \$2,838mn), and Core FFO/sh of \$6.60-6.75 (BofAe \$6.79/Street \$6.82).

Exhibit 8: DLR 4Q23 results summary

DLR reported 4Q23 results ahead of BofA and consensus expectations

	Actual BofA est. Co		BofA est.		Cons.	
	4Q23	4Q23E	Variance %	4Q23E	Variance %	
Revenue						
Rental Revenue	885.7	886.7	-0.1%	890.8	-0.6%	
Tenant reimbursements	363.1	396.6	-8.5%	388.6	-6.6%	
Total revenue	1,369.6	1,399.1	-2.1%	1,394.8	-1.8%	
Financial Metrics						
Adj. EBITDA	699.5	657.7	6.4%	662.3	5.6%	
Adj. EBITDA mgn.	51.1%	47.0%	8.6%	47.5%	7.6%	
Core FFO/share	1.63	1.63	0.1%	1.64	-0.3%	
AFFO/share	1.30	1.56	-16.8%	1.49	-13.0%	
Interest expense	113.6	111.3	2.1%	105.0	8.2%	
Сарех						
Recur. Capex	142.8	53.3	168.0%	68.1	109.8%	
Non-recur. capex	855.4	637.3	34.2%	639.9	33.7%	
Total capex	998.2	690.6	44.6%	708.0	41.0%	

Source: BofA Global Research estimates, company reports, Visible Alpha consensus

BofA GLOBAL RESEARCH

- Releasing spreads: DLR realized +8.2% cash rental rates on renewal leases in 4Q23 (vs. +7.4% in 3Q23), split between +5.9% for 0-1MW (+4.4% in 3Q23) and +12.8% for >1MW (5.6% in 3Q23). For 2024, DLR expects rental rates on renewal leases to be a healthy 4-6% on a cash basis. ~80% of lease expirations for 2024 are in the 0-1MW range and mgmt. expects inflation (e.g., CPI) to impact a portion of the releasing as it has come down y/y.
- ATM offering: DLR sold 8.7mn shares of common stock for ~\$1.1bn (average price
 of \$133.21, 8.7mn shares) via its ATM (at-the-market) program in 4Q23 and another
 ~\$84mn of common stock in 1Q24. Subsequent to 4Q, DLR amended its ATM
 program to provide an additional \$2bn of capacity.
- External funding: Mgmt. expects to raise \$1-1.5bn of external funding via asset dispositions and stabilized JV's in 2024, one-third of which has already been completed. Any contributions from Blackstone via the \$7bn development JV would be additional. DLR received \$250mn of the \$700mn phase 1 closing (remainder in 2Q). Total contributions from Blackstone will be \$900mn in 2024, inclusive of the \$250mn.
- **Leverage:** Via various funding programs in 2023, DLR delivered the balance sheet from ~7x to 5.8x exiting 2023. Mgmt. intends to lower leverage to 5.5x in 2024.
- NoVa: DLR's largest data center market is Northern Virginia (NoVa). It currently has 300MW of capacity to lease in Loudon County and Manassas (split 200/100MW respectively), of which it is in active negotiations with a 'handful of customers'. It also has 900MW of buildable capacity at its Digital Dulles campus that is expected to gain power access in 2026+.



EQIX 4Q23 wrap

EQIX reported 4Q23 results in line with BofAe and the Street on adj. EBITDA and slightly ahead on AFFO/sh (see $\frac{4Q23 \text{ EQIX First Look report}}{1}$). EQIX's 2024 guidance came in mixed vs. the Street on select financial metrics. The revenue range is in line with Street estimates while the adj. EBITDA and AFFO/sh guidance ranges are above. EQIX reported 287,300 cabinets billing, vs. 283,900 in 3Q23 (+1% q/q), mainly driven by 3% q/q growth in the Americas region. Global utilization fell slightly q/q to 79% (from 80% in 3Q23) and MRR (monthly recurring revenue) per cab increased to \$2,227 from Americas and EMEA operations.

Exhibit 9: EQIX reported 4Q23 results in line with BofA estimates

EQIX 4Q23 Key Metric Summary

Actual	BofA est.		Cons.	
4Q23	4Q23	Variance %	4Q23	Variance %
1,469.4	1,488.8	-1.3%	1,487.1	-1.2%
357.7	363.6	-1.6%	359.0	-0.4%
1,976.0	1,997.4	-1.1%	1,991.3	-0.8%
2,110.5	2,122.9	-0.6%	2,112.4	-0.1%
920.5	926.2	-0.6%	921.9	-0.2%
44%	43.6%	0.0%	43.6%	-0.1%
996.0	935.1	6.5%	935.4	6.5%
690.8	679.7	1.6%	683.7	1.1%
7.30	7.19	1.5%	7.25	0.7%
287,300	289,211	-0.7%	288,765	-0.5%
79.0	79.7	-0.9%	79.5	-0.6%
	1,469.4 357.7 1,976.0 2,110.5 920.5 44% 996.0 690.8 7.30 287,300	4Q23 4Q23 1,469.4 1,488.8 357.7 363.6 1,976.0 1,997.4 2,110.5 2,122.9 920.5 926.2 44% 43.6% 996.0 935.1 690.8 679.7 7.30 7.19 287,300 289,211	4Q23 4Q23 Variance % 1,469.4 1,488.8 -1.3% 357.7 363.6 -1.6% 1,976.0 1,997.4 -1.1% 2,110.5 2,122.9 -0.6% 920.5 926.2 -0.6% 44% 43.6% 0.0% 996.0 935.1 6.5% 690.8 679.7 1.6% 7.30 7.19 1.5% 287,300 289,211 -0.7%	4Q23 4Q23 Variance % 4Q23 1,469.4 1,488.8 -1.3% 1,487.1 357.7 363.6 -1.6% 359.0 1,976.0 1,997.4 -1.1% 1,991.3 2,110.5 2,122.9 -0.6% 2,112.4 920.5 926.2 -0.6% 921.9 44% 43.6% 0.0% 43.6% 996.0 935.1 6.5% 935.4 690.8 679.7 1.6% 683.7 7.30 7.19 1.5% 7.25 287,300 289,211 -0.7% 288,765

Source: BofA Global Research estimates, company reports, Visible Alpha

BofA GLOBAL RESEARCH

- **2024 focus areas:** In 2024, mgmt. is focusing on four main areas:)1) expanding its global reach in new markets (India, Malaysia, and South Africa), capacity in existing markets (New York, Paris, and Tokyo), and accelerating xScale; (2) continuing to expand its Digital Services offering; (3) focusing on sustainability; and (4) driving relationships with key partners like Nvidia.
- xScale: EQIX currently has 300MW of xScale capacity leased across its assets in APAC and EMEA, including ~32MW of space leased to start 2024. EQIX saw wins in 4Q23 supporting Gen AI workloads and hyperscale development and mgmt. expects to have a strong pipeline of xScale demand to drive 'momentum in the quarters to come'. In terms of US xScale, mgmt. believes there is an opportunity to capture demand and expects to announce something in the 'near future'.
- Al opportunity: Gen Al was being used by ~5% of enterprises in 2023, which is expected to increase to 80% by 2026, according to Gartner. EQIX is currently seeing a strong interest in Al services in all its regions from biopharma, financial services, software, automotive, and retail companies. Overall, mgmt. is encouraged by the runway of Al demand and anticipates the \$21bn Al TAM (total addressable market) provided at June 2023 Analyst Day is likely larger.
- **2024 items:** Mgmt. expects 1Q24 non-recurring revenues to decline q/q, but to remain elevated (vs. historical) due to APAC xScale leasing. MRR churn should stay at the higher end of EQIX's range (2-2.5%) in 1H24, and moderate in 2H24. Lastly, EQIX expects to pull down the \$500mn of ATM sales in late 2024.





SBAC 4Q23 wrap

SBAC's 4Q23 results were consistent with BofAe and the Street on revenue and adj. EBITDA and slightly above on AFFO/sh (see 4Q23 SBAC First Look report). SBAC's 2024 guidance came in mixed vs. the Street on select financial metrics. Revenue and adj. EBITDA guidance ranges are below the Street. The AFFO/sh guidance range captures Street expectations at the high end.

Exhibit 10: SBAC 4Q23 Key Metric Summary

SBAC reported 4Q23 results in line with BofA estimates

	Actual	BofA	BofA est.		IS.
	4Q23	4Q23E	Variance %	4Q23E	Variance %
Revenues					
Domestic site leasing	467	466	0.0%	468	-0.4%
INTL site leasing	169	168	0.9%	172	-1.2%
Site Lease Revenue	636	634	0.3%	640	-0.6%
Site Development	39	41	-3.9%	43	-10.0%
Total Revenue	675	675	0.0%	683	-1.1%
Segment					
Domestic colo/new builds	15.6	16.4	-5.0%	16.3	-4.0%
Domestic churn	(14.0)	(13.4)	4.6%	(15.2)	-8.1%
Domestic core leasing	423.3	423.7	-0.1%	428.7	-1.2%
INTL colo/new builds	5.8	6.8	-15.0%	5.5	4.7%
INTL churn	(7.4)	(8.7)	-14.4%	(8.0)	-6.8%
INTL core leasing	121.2	121.0	0.2%	124.6	-2.7%
Key Metrics					
Adjusted EBITDA	481	481	0.0%	481	-0.1%
AFFO	366	363	0.8%	361	1.2%
AFFO Per Share	3.37	3.33	1.3%	3.32	1.5%
Interest Expense	110	106	3.4%	106	4.1%
Maintenance Capex	14.9	13.0	14.5%	12.8	16.5%

Source: BofA Global Research estimates, Visible Alpha consensus, and company reports

BofA GLOBAL RESEARCH

- **Domestic activity:** SBAC anticipates \$42mn of domestic colo/amendment leasing in 2024 (vs. \$72mn in 2023). The 2024 outlook reflects the reduced level of carrier capex in 2H23 carrying through into the year. For this reason, SBAC expects 2024 to be a 'little more' front-end loaded, and if there was a material pickup in activity throughout the year, it would most likely impact 2025 operations. Lastly, management noted if there was not an uplift in 2H24 activity, the yearly exit rate could indicate a sub \$40mn in colo/amendments. For its services business, SBAC expects it to remain relatively balanced throughout 2024.
- **Sprint Churn:** SBAC continues to work through sprint churn, with 2025 and 2026 likely the heavy churn years. 2024 sprint churn should be ~\$30mn, 2025 = \$40-50mn, 2026 = \$45-55mn, and 2027 = \$10-20mn.
- Capital allocation: SBAC continues to weigh M&A and share buybacks as its YE23 leverage stood at 6.3x, significantly below its long-term target of 7.0-7.5x. Management will continue to weigh capital allocation options and is looking how best to maximize their international portfolio, whether via emerging or developed market expansion. Share buyback capacity remains is at \$405mn (2% of market cap).



UNIT 4Q23 wrap

Uniti Group reported 4Q revenue below Street expectations, mainly on lower one-time equipment sales within its E-rate and government fiber service segment. This goes towards UNIT's long-term strategy of transitioning out of equipment sales due to the nature of its variability and low-margin bookings. The team expects \$20mn of lower equipment sales in 2024 from 2023, -\$15mn of Sprint ETL (extract, transform, load) fees, and \$4mn of recent asset sales to contribute to lower-than-expected consolidated revenue in 2024 (\$1.16bn at the mid-point vs the Street at \$1.19bn). UNIT foresees strong fiber enterprise and wholesale sales funnel in 2024 due to the increasing demand for data connectivity, particularly from hyperscalers. We forecast -2.6% y/y growth in Fiber EBITDA for FY24, as we remain cautious on the current slowdown in wireless Enterprise demand through 2024 coupled with one-time headwinds (equipment sales, Sprint ETL fees). We lower our FY24 AFFO estimate to \$370mn, the low end of the Street. We reiterate our Underperform rating due to UNIT's tight liquidity position, high leverage, and unsteady dividend yield.

Exhibit 11: UNIT 4Q23 Key Metric Summary UNIT reported 4Q23 results below BofA estimates

	Actual 4Q23	BofA 4Q23	A vs. E %	Cons. 4Q23	A vs C. %
Leasing revenue	214.9	216.8	-1%	215.5	0%
Fiber infrastructure revenue	70.7	80.8	-13%	80.1	-12%
Total revenue	285.7	297.6	-4%	295.7	-3%
Adj. EBITDA	231.1	236.5	-2%	233.8	-1%
Capex	49.0	58.9	-17%	60.9	-20%
AFFO	91.6	83.2	10%	88.0	4%

Source: Company reports; Visible Alpha; BofA Global Research estimates

BofA GLOBAL RESEARCH

Key conference call items

• Capital allocation priorities: UNIT has three main cash outflows within its core strategy: (1) expanding its fiber network for organic Enterprise growth; (2) providing growth capital investments (GCI) to leasing operator Windstream; and (3) maintaining REIT status and providing \$0.60 DPS to shareholders (~11% dividend yield).

Windstream is maximizing its capital demands from Uniti at \$250mn total GCI payments for the year, weighted heavily in 1H24. UNIT is pulling back investments in fiber, its core long-term organic revenue growth engine, proving its difficulty to maintain all its financial obligations. At some point, we think, something will have to give. At current payout levels, UNIT is overdistributing dividends by \sim \$100mn cumulatively through 2025. While a dividend cut is unlikely due to the advantageous tax-shield, it is not an impossible outcome.

• Recent ABS bridge loan: UNIT raised a \$350mn ABS bridge loan with the intention of repaying the facility using proceeds from a future fiber-backed ABS. The bridge loan provides Uniti with near-term financial flexibility while the team works to set up a long-term asset-backed securitized loan backed by enterprise fiber contracts. A potential ABS deal would unlock a differentiated financing source at an attractive investment-grade rating; however, it would add to UNIT's already highly levered balance sheet. UNIT expects net leverage to tick up in 1H24 to 6.15x-6.25x as it works through heightened investments. We believe UNIT's high leverage, tight liquidity position, and uncertain operating environment will remain an overhang on the equity.

Estimate changes and PO adjustments

We have updated our estimates below for 4Q23 results, 2024 guidance revisions, and management commentary. We are adjusting the following PO's:

- **CCOI:** We downgrade to Neutral (from Buy), as the inflection point seems to be more so in 2025 vs. mid-year 2024 as previously thought. Our \$75 PO (from \$85) is based on a 14x 2024 EV/EBITDA multiple, in line with our prior multiple as our estimates now reflect the revenue and cost savings delays just mentioned. A 14x multiple is still a strong premium to historical multiples for wireline network operators.
- **DY:** DY remains our top 2024 SMID cap pick as (1) the current estimated backlog is at elevated levels, excluding BEAD funding; (2) it is positioned to monetize incremental telecom and cable company wireline buildout initiatives in 2024+; and (3) the potential to capture BEAD funding is forthcoming. We increase our PO to \$149 (from \$125), which is based on an ~9.0x FY2025E EV/EBITDA multiple (from 8.5x) as we update our model. This represents a premium to DY's current ~8x multiple and a discount to its largest competitor's implied 2024 EV/EBITDA multiple of ~10.0x.
- **DLR:** We adjust our PO to \$170 (from \$150), which is based on a ~24.5x 2025E Core FFO/sh multiple (from ~22x). This is a discount to its closet data center peer at 26x and a premium to the broader REIT average of ~18x.
- **EQIX:** We increase our PO to \$1,000 (from \$870), which is based on a ~26x 2025E AFFO/sh multiple (from 25x). This is a premium to EQIX's closer competitors' valuation of ~24.5x AFFO/sh multiple and the broader REIT average of ~18x.



American Tower (AMT)

Exhibit 12: AMT new vs. old estimates

We have updated estimates post-4Q23 earnings

	2024E	2024E		2025E	2025E	
	New	Old	+/-%	New	Old	+/-%
Revenues						
Domestic revenue	5,238	5,226	0.2%	5,259	5,261	0.0%
Data Center revenue	923.7	878.6	5.1%	987.6	940.1	5.0%
Property revenue - International	4,674	4,593	1.7%	4,042	4,042	0.0%
Total property revenue	10,836	10,706	1.2%	10,289	10,239	0.5%
Services revenue	180	112	60.2%	184	112	63.4%
Total revenue	11,016	10,818	1.8%	10,473	10,352	1.2%
Organic run-rate revenue						
Africa	882	875	0.8%	913	838	9.0%
Asia	658	668	-1.5%	681	717	-4.9%
Europe	555	559	-0.7%	597	605	-1.2%
LatAm	1,220	1,212	0.7%	1,248	1,207	3.4%
US/Canada	4,874	4,884	-0.2%	5,089	5,111	-0.4%
Other metrics						
Adjusted EBITDA	7,055	6,992	0.9%	6,995	7,050	-0.8%
AFFO	5,141	4,955	3.7%	5,286	5,230	1.1%
AFFO per share	11.02	10.62	3.8%	11.34	11.19	1.3%
Interest expense	1,422	1,446	-1.7%	1,412	1,419	-0.5%

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Cogent Communications (CCOI)

Exhibit 13: CCOI new vs. old estimates

We have updated estimates post-4Q23 earnings

	2024E	2025E	2026E
	%	%	%
	New Old change	New Old change	New Old change
Total Revenue	1,099.0 1,101.3 -0.2%	1,191.1 1,219.5 -2.3%	1,316.0 1,390.8 -5.4%
Adj. EBITDA	334.9 393.0 -14.8%	313.7 376.3 -16.6%	434.1 486.7 -10.8%
Adj. EBITDA mgn.	30.5% 35.7% -14.6%	26.3% 30.9% -14.6%	33.0% 35.0% -5.7%

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Digital Realty (DLR)

Exhibit 14: DLR new vs. old estimates

We have updated estimates post-4Q23 earnings

	2024E New	2024E Old	% change	2025E New	2025E Old	% change
Revenue			· ·			
Rental revenue	3,650.1	3,706.6	-1.5%	4,019.3	3,992.3	0.7%
Tenant reimbursements	1,435.7	1,466.9	-2.1%	1,457.3	1,488.9	-2.1%
Total revenue	5,593.3	5,658.3	-1.1%	5,997.6	5,979.6	0.3%
Financial Metrics						
Adj. EBITDA	2,845.9	2,816.7	1.0%	3,049.2	2,975.6	2.5%
Adj. EBITDA mgn.	50.9%	49.8%	2.2%	50.8%	49.8%	2.2%
Core FFO/share	6.65	6.79	-2.1%	6.90	6.99	-1.3%
AFFO/share	5.92	6.35	-6.8%	6.11	6.50	-6.1%
Interest expense	485.0	496.4	-2.3%	572.5	579.1	-1.1%
Сарех						



Exhibit 14: DLR new vs. old estimatesWe have updated estimates post-4Q23 earnings

	2024E	2024E		2025E	2025E	
Recur. Capex	263.3	267.1	-1.4%	281.2	279.9	0.5%
Non-recur. capex	2,284.3	2,348.5	-2.7%	2,151.8	2,078.3	3.5%
Total capex	2,547.6	2,615.6	-2.6%	2,433.0	2,358.2	3.2%

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Dycom Industries (DY)

Exhibit 15: DY new vs. old estimates

We have updated estimates post-4Q24 earnings

	2025E			2026E			
Metric	New	Old	+/-	New	Old	+/-	
Contract Revenues	4,550.2	4,542.8	0.2%	4,764.9	4,723.1	0.9%	
Adj. EBITDA	563.4	545.6	3.3%	613.8	590.9	3.9%	
Net Income	226.1	212.6	6.3%	264.9	240.5	10.1%	
EPS	7.68	7.14	7.5%	8.99	8.08	11.3%	

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Equinix (EQIX)

Exhibit 16: EQIX new vs. old estimates

We have updated estimates post-4Q23 earnings

	2024E	2024E		2025E	2025E	
	New	Old	+/-%	New	Old	+/-%
Revenue						
Colocation revenue	6,227.1	6,379.3	-2.4%	6,821.9	6,973.2	-2.2%
Interconnection revenue	1,520.8	1,551.0	-1.9%	1,662.1	1,690.8	-1.7%
Total recurring revenue	8,367.3	8,543.4	-2.1%	9,154.5	9,311.0	-1.7%
Total revenue	8,853.8	8,977.6	-1.4%	9,655.8	9,765.3	-1.1%
Financial Metrics						
Adjusted EBITDA	4,134.9	4,107.9	0.7%	4,588.8	4,543.5	1.0%
Adj. EBITDA margin	46.7%	45.8%	2.1%	47.5%	46.5%	2.1%
Total capex	2,995.0	3,179.7	-5.8%	3,045.4	2,854.6	6.7%
Interest expense	436.1	448.9	-2.9%	504.7	517.6	-2.5%
AFFO	3,337.2	3,279.3	1.8%	3,682.1	3,600.2	2.3%
AFFO/share - Diluted	35.03	34.64	1.1%	38.47	38.03	1.2%
Customer metrics						
Total cross connects	493,616	504,700	-2.2%	516,813	523,945	-1.4%
Cabinets billing	304,706	308,284	-1.2%	319,214	318,976	0.1%
MRR per cab	1,761	1,779	-1.1%	1,822	1,853	-1.6%
Utilization (%)	79.7	80.7	-1.2%	80.0	80.9	-1.1%

Source: BofA Global Research estimates



SBA Communications (SBAC)

Exhibit 17: SBAC new vs. old estimates

We have updated estimates post-4Q23 earnings

	2024E	2024E		2025E	2025E	
	New	Old	% change	New	Old	% change
Revenues						
Domestic site leasing revenue	1,861	1,899	-2.0%	1,904	1,925	-1.1%
INTL site leasing	683	705	-3.2%	721	760	-5.1%
Site Lease Revenue	2,544	2,604	-2.3%	2,625	2,685	-2.2%
Site Development Revenue	147	153	-4.1%	169	160	5.9%
Total Revenue	2,691	2,757	-2.4%	2,794	2,844	-1.8%
Segment						
Domestic colo/new builds	47	47	0.0%	52	52	-0.2%
Domestic churn	(55)	(54)	1.5%	(73)	(73)	-0.2%
Domestic core leasing	1,725	1,729	-0.2%	1,763	1,770	-0.4%
INTL colo/new builds	17	19	-12.4%	18	21	-15.1%
INTL churn	(23)	(23)	0.1%	(8)	(8)	-2.9%
INTL core leasing	509	524	-2.9%	548	580	-5.6%
Other metrics						
Adjusted EBITDA	1,903	1,962	-3.0%	1,976	2,033	-2.8%
AFFO	1,462	1,459	0.2%	1,487	1,476	0.7%
AFFO per Share	13.52	13.36	1.1%	13.86	13.50	2.7%
Interest Expense	430	424	1.3%	458	488	-6.1%
Maintenance Capex	51	51	0.7%	52	51	0.8%

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Uniti Group (UNIT)

Exhibit 18: UNIT new vs. old estimates

We have updated estimates post-4Q23 earnings

	New	Old		New	Old	
Key deltas	1Q24	1Q24	Delta (%)	2024E	2024E	Delta (%)
Leasing revenue	216	218	-0.9%	873	881	-0.9%
Fiber infrastructure revenue	73	76	-4.3%	285	310	-8.1%
Total revenue	289	294	-1.8%	1,158	1,191	-2.8%
Adj. EBITDA	232	234	-0.8%	935	953	-2.0%
Capex	105	109	-4.2%	(383)	(410)	-6.6%
AFFO	89	93	-5.0%	370	389	-5.0%

Source: BofA Global Research estimates





Telco/Comm Infra comp table

Exhibit 19: US Telecom and Communications Infrastructure Comparative Valuation TableBelow is latest pricing data and our forward looking valuations.

									'22-'24			2023			'23 Net
		Last Close	Price			Market	FV/E	BITDA	EBITDA	FCF	Yield	_ Fwd. Div.		PE	Debt/
Company	Ticker	Price	Obj.	Rating	QRQ	Cap.	2023	2024E	CAGR	2023E	2024E	Yield	2023	2024E	EBITDA
Wireless								•						·	
AT&T	T	\$17.18	\$20.00	Buy	B-1-7	123,366	7.0x	6.8x	2.6%	13.4%	14.3%	6.5%	7.2x	7.1x	3.1x
Verizon	VZ	\$39.93	\$41.00	Neutral	B-2-7	170,035	7.5x	7.4x	0.5%	10.6%	10.8%	6.6%	8.6x	8.8x	3.2x
T-Mobile US															
(Adjusted)	TMUS	\$167.42	\$175.00	Buy	B-1-9	206,048	9.4x	8.6x	9.0%	6.5%	8.1%	0.0%	22.7x	15.6x	3.6x
Wireless Average						166,483	8.0x	7.6x	4.0%	10.2%	11.1%	4.4%	12.8x	10.5x	3.3x
Data Centers															
Digital Realty	DLR	\$149.81	\$170.00	Buy	B-1-7	43,646	22.2x	22.0x	7.3%	1.2%	3.9%	3.3%	nm	nm	6.2x
Equinix	EQIX	\$906.64	\$1,000.00	Buy	B-1-7	68,633	21.9x	19.9x	18.0%	1.3%	1.3%	1.5%	nm	nm	3.3x
Data Center Average	9					56,140	22.0x	21.0x	12.6%	1.2%	2.6%	2.4%	nm	nm	4.8x
Wireline															
Lumen Technologies	LUMN	\$1.71	\$1.00	Underperform	C-3-9	1,828	4.6x	4.8x	(21.7%)	(58.4%)	5.0%	0.0%	(0.2x)	(10.6x)	4.2x
Cogent	CCOI	\$71.69	\$75.00	Neutral	B-2-7	3,507	13.4x	14.1x	19.9%	0.5%	4.0%	5.3%	nm	nm	3.7x
Dycom Industries	DY	\$134.55	\$149.00	Buy	B-1-9	3,951	9.4x	8.4x	24.1%	1.0%	6.2%	nm	18.0x	17.3x	1.9x
Uniti Group	UNIT	\$6.56	\$3.50	Underperform	C-3-8	1,853	8.3x	8.4x	1.9%	(0.7%)	0.5%	9.1%	nm	nm	6.3x
Wireline Average						2,785	8.9x	8.9x	6.0%	(14.4%)	3.9%	4.8%	nm	nm	4.0x
US Telecom Wireles	s &														
Wireline						84,634	8.4x	8.3x	5.0%	(2.1%)	7.5%	4.6%	12.8x	10.5x	3.7x
Towers															
American Tower	AMT	\$206.01	\$240.00	Buy	B-1-7	91,269	18.7x	18.5x	5.1%	3.2%	4.6%	3.1%	nm	nm	5.2x
Crown Castle	CCI	\$112.07	\$120.00	Neutral	B-2-7	48,421	16.8x	17.6x	3.7%	3.9%	4.1%	5.6%	nm	nm	5.4x
SBA Comm.	SBAC	\$216.97	\$260.00	Buy	B-1-7	23,682	19.2x	18.8x	3.7%	4.5%	5.2%	1.6%	nm	nm	6.5x
Tower Average						54,458	18.2x	18.3x	4.2%	3.9%	4.6%	3.4%	nm	nm	5.7x
US Telecom						69,966	8.4x	8.3x	5.0%	(2.1%)	7.5%	4.6%	nm	nm	3.7x
US Telecom Comm Towers)	Infrastructur	e (Data Centers, F	iber,			37,794	14.3x	13.9x	6.7%	0.2%	5.6%	3.8%	nm	nm	4.4x
Towers)						3/,/34	14.5X	13.9%	0.7%	U.Z%0	7,0%	3.6%	TITT	HH	4.4

Source: Bloomberg, BofA Global Research estimates

Price objective basis & risk

American Tower Corp. (AMT)

Our PO of \$240 is based on a 22x '24E AFFO multiple, a premium to the broader REIT sector (approx. 18.5x 2024E AFFO multiple) and tower peers. We believe AMT should trade at a higher multiple than the broader REIT sector as well as Tower peer group for its 1) peer leading AFFO/sh growth, 2) international exposure, 3) relatively small remaining Sprint churn impact, and 4) relative shielding from domestic carrier moderation due to its holistic MLA contract structure.

Risks: With contract-based pricing and margins a function of fixed tower economics, the biggest moving part to the tower story is future lease demand. Weaker-than-expected wireless subscriber growth could engender concern regarding the rate of future tower lease growth and negatively affect the stock. Delayed network upgrades among national carriers or slower market launches from new carriers could have a negative effect on the growth trajectory of wireless towers. With more than half its towers located outside the US, AMT is exposed to foreign currency fluctuations that could affect results and be negative for shares. Lastly, AMT's floating rate exposure (approx. 15%) will be a headwind to earnings in this higher interest rate environment.

AT&T Inc. (T)

Our \$20 price objective is based on a P/E multiple of 9.0x our FY24 EPS estimate. The multiple is a slight premium to the historical average. We think this is warranted based on AT&T's focused investing in its core wireless and wireline connectivity businesses to drive subscriber growth.

Downside risks to our price objective are lower-than-projected growth, greater wireless competition, and litigation risk.

Cogent (CCOI)

Our \$75 price objective is based on an EV/EBITDA multiple of approx. 14x 2024E inclusive of the TMUS/Sprint wireline acquisition (closed 5/1/23). This multiple is in line with historic comparables, which we believe is appropriate based on projected growth. Our Neutral rating represents the revenue and cost savings delays now contemplated in our model.

Upside risks include faster return-to-office recovery, quicker than anticipated cost-savings realizations, and stronger wavelength business ramp. Downside risks to our PO are continued sluggish return-to-office causing below-normal legacy business growth, a longer-than-expected realization period and/or higher-than-forecasted costs for integration of the new Sprint Wireline business, greater-than-expected competition as CCOI enters new business markets, and challenges training and retaining a productive sales force.

Crown Castle Inc (CCI)

Our \$120 PO is based on a weighted approx. 17x 2024E AFFO multiple. We apply a 19.5x multiple to CCl's macro tower business (60% weighting given business exposure). We apply a 18x multiple to CCl's small cell business (10% weighting) and a 12.5x multiple to CCl's fiber business (30% weighting), a discount to the macro tower business based on higher business risks and capital intensity. We view CCl's small cell exposure and double digit revenue expectations positively, but note on the margin it will not drive revenue at scale (10% revenue exposure). We view CCl as a 'show me story' with 1) the ongoing fiber business strategic review, 2) CEO search, and 3) our expectation for AFFO/sh growth to be challenged in 2024/25 as domestic carriers slow down wireless deployments and CCl realizes idiosyncratic headwinds.



Upside risks to our PO are better line-of-sight to fiber new leasing and lower than historical churn, elevated domestic tower activity, increased small cell adoption leading to outsized growth, and faster than expected interest rate cuts.

Downside risks to our PO are further domestic tower activity pull back, lower than expected Services revenue, decline in small cell adoption and use, continued headwinds in fiber new leasing and increased churn, and further interest rate increases.

Digital Realty Trust Inc (DLR)

Our PO of \$170 is based on a target 2025E core FFO multiple of approx. 24.5x. This multiple is a premium to the broader REIT sector but at a discount to its closest data center peer. We believe DLR should trade a premium to other REITs due to it being exposed to global pricing power and secular digital transformation tailwinds. Yet, we believe DLR deserves a slight discount to EQIX due to its external funding model and lower forecasted core FFO/share growth.

Downside risks to our price objective are increased competition, customer consolidation or bankruptcies. As a real estate company, Digital Realty remains exposed to excessive new supply in its markets, rising construction and capital costs, real estate values, and rising interest rates.

Dycom Industries, Inc. (DY)

Our \$149 Price Objective is based on a FY25E EV/EBITDA multiple of approx. 9x. An 8.5x EV/EBITDA multiple is slightly above DY's average consensus EV/EBITDA (t+1) multiple of approx. 8x since January 2021. It is also a discount to its largest competitor implied consensus multiple of approx. 10x (current multiple of approx. 9.0x). Since 2021, DY has traded at an approx. 2.0x average discount on an EV/EBITDA(t+1) basis. Going forward, we believe DY should trade at a discount to its peer given exposure to oil and gas sector opportunities, which DY does not possess to the same extent.

Downside risks are: 1) an abrupt slowdown in carrier capex throughout the US, 2) fixed wireless access taking a strong share vs. traditional wireline, 3) adverse weather impacting days in the field, 4) macro events impacting customer financial health, and 5) delays in government funding.

Equinix, Inc. (EQIX)

Our \$1,000 price objective is based on a target multiple of approximately 26x 2025E AFFO/share. Our target multiple is a premium to the broader average REIT multiple of 18.5x as we believe EQIX's superior AFFO/sh growth, pricing power tailwinds, and competitive moat still merit a similar relative valuation premium to other REITs.

The risks to our price objective are 1) a prolonged downturn in Enterprise IT spending, 2) meaningful exposure to the financial industry, and 3) fluctuating FX rates.

Lumen Technologies Inc. (LUMN)

We believe LUMN should be trading at a discount to its peers. Our price objective is \$1.00/share based on a 4.7x 2024E EV/EBITDA multiple. We view 4.7x as appropriate given Lumen has high capital intensity, few growth opportunities, and declining cash flow.

Downside risks to our PO are increased competition from wireless, cable, and enterprise service providers and LVLT deal integration. Upside risks are faster-than-expected revenue, EBITDA, and free cash flow growth.

SBA Communications Corporation (SBAC)



Our \$260 price objective is based on a approx. 19.5x 2024E AFFO/share multiple, a discount to its closest tower peer. Relative to historical levels, SBAC is trading at or near its historic lows. We expect slower domestic growth (relative to prior years), elevated Sprint churn, and increased interest rates will inhibit AFFO/share growth versus peers in 2024+, but believe at current levels SBAC's stock price is attractive.

Downside risks to our PO are further domestic tower activity pullback, lower-thanexpected Services revenue, increased international churn, regulatory pressures from international laws, and further interest rate increases.

T-Mobile US (TMUS)

Our PO of \$175 applies a 9x EV/EBITDA multiple to our '24 EBITDA estimate, a premium to other wireless companies. Our 9x multiple is a discount to Charter due to integration risk and less FCF generation and capital returns but a premium to AT&T/Verizon due to faster growth.

Downside risks to our price objective are greater-than-expected competition, Sprint/T-Mobile integration issues, and potential threat of new competition from DISH.

Uniti Group Inc (UNIT)

Our \$3.50 price objective is based on a 7.0x EV/EBITDA multiple on our 2024 estimates. 7.0x is a fair target in our view given the recent trading of its closest wireline peers which average 8.0x. Uniti's REIT structure implies a tax-free cash flow stream in perpetuity, however, tough industry valuations and dramatic shifts in trends in wireline enterprise sector has challenged UNIT's market dynamics and financial outlook. UNIT has a higher cost of capital and high leverage compared to peers which limits its ability to access funding and may make M&A less attractive.

Upside risks to our price objective are 1) an attractive dividend yield, 2) stable liquidity profile through 2027, and 3) a value-unlocking M&A event with a third party. Downside risks are a dividend cut and a more contentious relationship with anchor tenant Windstream given new management there.

Verizon Communications Inc. (VZ)

Our \$41 price objective is based on a target multiple of 9.0x. The target multiple is at a discount to the historical average multiple of 11.4x over the last decade and the more recent average of 10.4x over the past 5-years. The discounted multiple is justified as VZ must adjust its value proposition to account for the improved network quality and coverage of its competitors.

Downside risks to our price objective are rising competitive pressure in wireless and corresponding margin pressure, higher inflation-related costs, litigation risk, and negative economic impacts on the Business segment.

Upside risks are faster-than-expected traction with VZ's new price plan, expense reduction, emergence of 5G killer-apps, and a re-rating of risk in the market.

Analyst Certification

We, David W. Barden, CFA and Alexander Waters, hereby certify that the views each of us has expressed in this research report accurately reflect each of our respective personal views about the subject securities and issuers. We also certify that no part of our respective compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.



North America - Telecom Services Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	American Tower Corp.	AMT	AMT US	David W. Barden, CFA
	AT&T Inc.	T	TUS	David W. Barden, CFA
	Digital Realty Trust Inc	DLR	DLR US	David W. Barden, CFA
	Dycom Industries, Inc.	DY	DY US	Alexander Waters
	Equinix, Inc.	EQIX	EQIX US	David W. Barden, CFA
	Quebecor Inc.	YQBRB	QBR/B CN	Matthew Griffiths, CFA
	Rogers Communications	RCI	RCI US	David W. Barden, CFA
	Rogers Communications	YRCIB	RCI/B CN	David W. Barden, CFA
	SBA Communications Corporation	SBAC	SBAC US	David W. Barden, CFA
	TELUS Corporation	YT	T CN	David W. Barden, CFA
	TELUS Corporation	TU	TU US	David W. Barden, CFA
	T-Mobile US	TMUS	TMUS US	David W. Barden, CFA
NEUTRAL				
	BCE Inc.	YBCE	BCE CN	David W. Barden, CFA
	BCE Inc.	BCE	BCE US	David W. Barden, CFA
	Cogent	CCOI	CCOI US	David W. Barden, CFA
	Crown Castle Inc	CCI	CCI US	David W. Barden, CFA
	Verizon Communications Inc.	VZ	VZ US	David W. Barden, CFA
UNDERPERFORM				
	Cogeco Communications Inc.	YCCA	CCA CN	Matthew Griffiths, CFA
	Lumen Technologies Inc.	LUMN	LUMN US	David W. Barden, CFA
	Uniti Group Inc	UNIT	UNIT US	David W. Barden, CFA

Disclosures

Important Disclosures

Equity Investment Rating Distribution: Technology Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	215	53.09%	Buy	111	51.63%
Hold	97	23.95%	Hold	45	46.39%
Sell	93	22.96%	Sell	24	25.81%

Equity Investment Rating Distribution: Telecommunications Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	57	51.82%	Buy	43	75.44%
Hold	27	24.55%	Hold	17	62.96%
Sell	26	23.64%	Sell	12	46.15%

Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

R1 Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.



FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. VOLATILITY RISK RATINGS, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. INVESTMENT RATINGS reflect the analyst's assessment of both a stock's absolute total return potential as well as its attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). Our investment ratings are: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. An investment rating of 6 (No Rating) indicates that a stock is no longer trading on the basis of fundamentals. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

Investment rating Total return expectation (within 12-month period of date of initial rating) Ratings dispersion guidelines for coverage cluster^{R2}

 Buy
 ≥ 10%
 ≤ 70%

 Neutral
 ≥ 0%
 ≤ 30%

 Underperform
 N/A
 ≥ 20%

INCOME RATINGS, indicators of potential cash dividends, are: 7 - same/higher (dividend considered to be secure), 8 - same/lower (dividend not considered to be secure) and 9 - pays no cash dividend. Coverage Cluster is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Global Research report referencing the stock.

Price Charts for the securities referenced in this research report are available on the Price Charts website, or call 1-800-MERRILL to have them mailed.

BofAS or one of its affiliates acts as a market maker for the equity securities recommended in the report: American Tower, AT&T, Cogent, Crown Castle Inc, Digital Realty Trust, Dycom, Equinix, Lumen Technologies, SBA Comm. Corp., T-Mobile US, Uniti Group, Verizon Comm.

BofAS or an affiliate was a manager of a public offering of securities of this issuer within the last 12 months: American Tower, AT&T, Crown Castle Inc, Verizon Comm.

The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: American Tower, AT&T, Crown Castle Inc, Digital Realty Trust, Dycom Inds, Equinix, Lumen Technologies, T-Mobile US, Uniti Group, Verizon Comm.

BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: American Tower, AT&T, Cogent Holdings Inc, Crown Castle Inc, Digital Realty Trust, Dycom Inds, Equinix, Lumen Technologies, SBA Comm, T-Mobile US, Uniti Group, Verizon Comm.

The issuer is or was, within the last 12 months, a non-securities business client of BofAS and/or one or more of its affiliates: American Tower, AT&T, Cogent Holdings Inc, Crown Castle Inc, Digital Realty Trust, Dycom Inds, Equinix, Lumen Technologies, SBA Comm, T-Mobile US, Uniti Group, Verizon Comm.

BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: American Tower, AT&T, Crown Castle Inc, Digital Realty Trust, Equinix, Lumen Technologies, Uniti Group, Verizon Comm.

BofAS or an affiliate expects to receive or intends to seek compensation for investment banking services from this issuer or an affiliate of the issuer within the next three months: American Tower, AT&T, Crown Castle Inc, Digital Realty Trust, Dycom Inds, Equinix, Lumen Technologies, T-Mobile US, Uniti Group, Verizon Comm.

BofAS together with its affiliates beneficially owns one percent or more of the common stock of this issuer. If this report was issued on or after the 9th day of the month, it reflects the ownership position on the last day of the previous month. Reports issued before the 9th day of a month reflect the ownership position at the end of the second month preceding the date of the report: American Tower, AT&T, Crown Castle Inc, Digital Realty Trust, Dycom Inds, Equinix, SBA Comm, Verizon Comm.

BofAS or one of its affiliates is willing to sell to, or buy from, clients the common equity of the issuer on a principal basis: American Tower, AT&T, Cogent, Crown Castle Inc, Digital Realty Trust, Dycom, Equinix, Lumen Technologies, SBA Comm. Corp., T-Mobile US, Uniti Group, Verizon Comm.

The issuer is or was, within the last 12 months, a securities business client (non-investment banking) of BofAS and/or one or more of its affiliates: American Tower, AT&T, Crown Castle Inc, Digital Realty Trust, Dycom Inds, Equinix, Lumen Technologies, Uniti Group, Verizon Comm.

BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

Other Important Disclosures

From time to time research analysts conduct site visits of covered issuers. BofA Global Research policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the issuer for such visits.

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

Officers of BofAS or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments. Refer to BofA Global Research policies relating to conflicts of interest.

"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.

Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa): Merrill Lynch South Africa): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofaml.com/BofASEdisclaimer; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by the Bank of Marerica Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the



R2 Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSFC); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Canadian Investment Regulatory Organization; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch (Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSFC; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities en

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the issuer or the market that is anticipated to have a short-term price impact on the equity securities of the issuer. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned herein. Investors in such securities and instruments, including ADRs, effectively assume currency risk.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information. In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

BofA ESGMeter Methodology:

ESGMeter is a proprietary metric based on quantitative analysis and fundamental analyst inputs that reflects our assessment of a company's Environmental, Social and Governance-related attributes. The ESGMeter is intended to indicate a company's likelihood of experiencing stronger financial stability (higher return on equity and lower earnings and price volatility) over the next three years relative to peer group. There are three ESGMeter levels - Low, Medium, and High - which indicate whether a company has attributes most likely to translate into superior financial stability (in the case of a High level) or weaker financial stability (in the case of a Low level) over the next three years relative to its peer group. A Medium level suggests that a company exhibits ESG characteristics that are likely associated with financial stability results in line with its peer group over the next three years. Full details of our methodology, financial stability definition and disclaimers are available at BofA ESGMeter methodology. ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of the BofA Global Research fundamental equity analyst's investment rating, volatility risk rating, income rating or price objective for that company.



Copyright and General Information:

Copyright 2024 Bank of America Corporation. All rights reserved. iQdatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities. Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public inform

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Subject to the quiet period applicable under laws of the various jurisdictions in which we distribute research reports and other legal and BofA Securities policy-related restrictions on the publication of research reports, fundamental equity reports are produced on a regular basis as necessary to keep the investment recommendation current.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this

