

# Cold Storage REITs

# Cold storage employment tracker

**Industry Overview** 

# BLS data provides a proxy for COLD's labor expenses

We track Bureau of Labor Statistics cold storage employment data. In particular, employment growth, hourly earnings & weekly payrolls across the US cold storage chain. We view these data points as an important proxy for Americold's (ticker: COLD) labor expenses. An improving labor environment is as a key positive catalyst for COLD.

# Labor churn is a key drag on margins

Employment trends suggest wage growth for COLD's warehouse workers is roughly in line with historical norms. The latest data suggest that costs should moderate. The key issue for COLD which is not captured here is that labor churn across their portfolio remains elevated, but COLD flagged that during 3Q they achieved a 75:25 perm to temp ratio. Higher churn results in a less efficient labor force and depressed service margins.

# **BLS** data is highly correlated with SS labor

On an annual basis, we find that COLD's SS labor expense has a 0.77 correlation with the BLS's aggregate weekly payroll data for cold storage workers. On a quarterly basis, the correlation is 0.59. Agency labor is not captured in this data. BLS data is a proxy for COLD's labor expense. The mix between full time and agency labor within COLD's warehouses is a key variable not captured here.

# Wage rate growth now in line with historical norms

Quarter to date, average hourly earnings increased 1.1% vs last quarter (prior quarter: 4.3%). In December, average hourly earnings for cold storage workers decreased 0.6% M/M (prior month: increased 0.3%). Hourly earnings are up 3.2% Y/Y. Quarter to date, average weekly payroll is up 4.6% vs last quarter (prior quarter: 11.5%). In December, average weekly payrolls for cold storage workers increased 0.1% M/M (prior month: increased 1.4%). Weekly payrolls are up 6.3% Y/Y.

# Employment levels are not the issue; industry fully staffed

In December, total US cold storage workers decreased by 0.2k employees M/M (prior month: increased by 0.1k). Quarter to date, cold storage employment decreased by 0.5k (prior quarter: increased by 0.5k employees).

# What you will find inside the report

We visualize key BLS employment data for the cold storage sector including the total number of employees, hourly earnings and weekly payroll. We provide a quarterly and annual correlation analysis between the BLS cold storage employment data and COLD's SS labor expense.

Link to the data: BofA's cold storage employment file

#### 05 February 2024

Equity United States REITs

Joshua Dennerlein Research Analyst BofAS +1 646 855 1681 joshua.dennerlein@bofa.com

Jeffrey Spector Research Analyst BofAS +1 646 855 1363 jeff.spector@bofa.com

Steven Song Research Analyst BofAS +1 646 855 0049 huainan.song@bofa.com

REITs Team

See Team Page for List of Analysts

Key terms:

BLS: Bureau of labor statistics

SS: Same Store

C.S.: Cold Storage

Note: The detailed data that we utilize in this report is lagged one month relative to the monthly employment report data.

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 7 to 10. Analyst Certification on page 5. Price Objective Basis/Risk on page 5.

# **BLS** employment data for cold storage

### Exhibit 1: Average hourly earnings for cold storage workers (\$/hr)

Wage growth accelerated for cold storage workers starting in late 2020

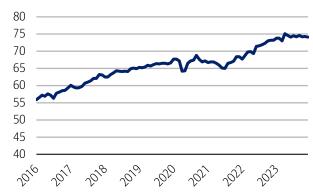


**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics

BofA GLOBAL RESEARCH

# Exhibit 3: Number of employees working in cold storage (thous.)

Significant recovery in cold storage workers since summer of 2021



**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics

BofA GLOBAL RESEARCH

# Exhibit 5: Aggregate weekly payroll for cold storage workers (\$)

Payroll growth accelerated for cold storage starting in early 2021



**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics

BofA GLOBAL RESEARCH

### Exhibit 2: Y/Y change in average hourly earnings

Hourly earnings growth is trending roughly at the historical average

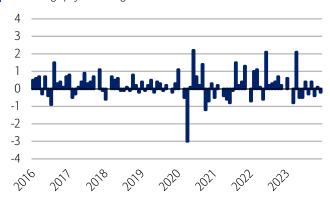


**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics

BofA GLOBAL RESEARCH

# Exhibit 4: M/M change in number of cold storage workers (thous.)

Cold storage payrolls change is volatile M/M



**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics

BofA GLOBAL RESEARCH

### Exhibit 6: Y/Y change in cold storage weekly payrolls

Weekly payrolls growth is trending roughly at the historical average



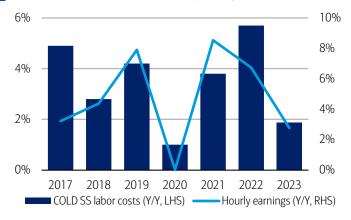
**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics

BofA GLOBAL RESEARCH

# **Annual correlations: BLS vs COLD**

### Exhibit 7: COLD SS labor costs vs BLS hourly earnings

COLD's labor expenses track the BLS hourly earnings data

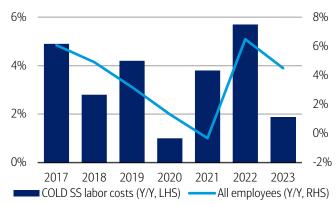


**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics, Company filings

BofA GLOBAL RESEARCH

# Exhibit 9: COLD SS labor costs vs total # of cold storage workers

Lower correlation between COLD's labor costs and total cold storage workers

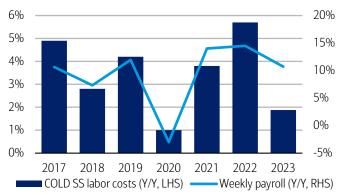


**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics, Company filings

BofA GLOBAL RESEARCH

# Exhibit 11: COLD SS labor costs vs total cold storage weekly payroll

COLD's labor expenses track the BLS weekly payroll data

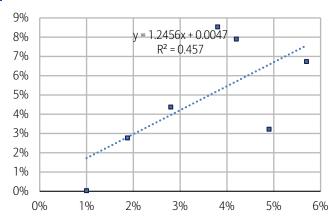


**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics, Company filings

BofA GLOBAL RESEARCH

### **Exhibit 8: Correlation: COLD SS labor costs vs BLS hourly earnings**

On an annual basis, the correlation is 0.68 & r-squared is 0.46

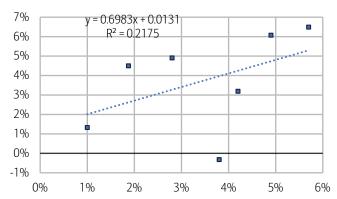


**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics, Company filings

BofA GLOBAL RESEARCH

### Exhibit 10: Correlation: COLD SS labor costs vs total C.S. workers

On an annual basis, the correlation is 0.47 & r-squared is 0.22

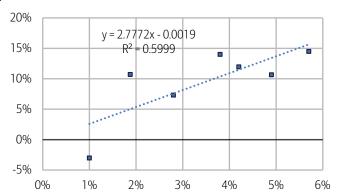


**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics. Company filings

BofA GLOBAL RESEARCH

# Exhibit 12: Correlation: COLD SS labor costs vs C.S. weekly payroll

On an annual basis, the correlation is 0.86 & r-squared is 0.74



**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics, Company filings

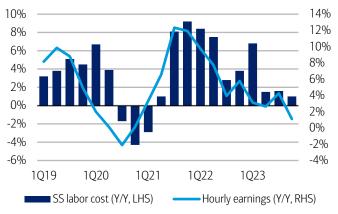
BofA GLOBAL RESEARCH



# **Quarterly correlations: BLS vs COLD**

### **Exhibit 13: COLD SS labor costs vs BLS hourly earnings**

COLD's labor expenses track the BLS hourly earnings data



**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics, Company filings

BofA GLOBAL RESEARCH

### Exhibit 15: COLD SS labor costs vs total # of cold storage workers

Lower correlation between COLD's labor costs and total cold storage workers

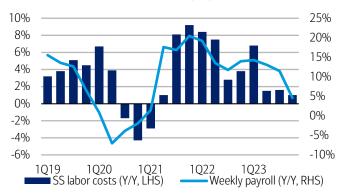


 $\textbf{Source:} \ \textbf{Bureau} \ of \ Labor \ Statistics, \ U.S. \ Department \ of \ Labor, \ Occupational \ Employment \ Statistics, \ Company \ filings$ 

BofA GLOBAL RESEARCH

# Exhibit 17: COLD SS labor costs vs total cold storage weekly payroll

COLD's labor expenses track the BLS weekly payroll data

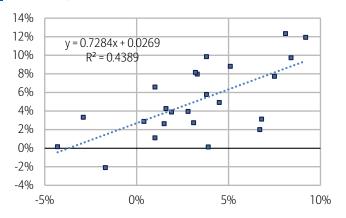


**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics, Company filings

BofA GLOBAL RESEARCH

# Exhibit 14: Correlation: COLD SS labor costs vs BLS hourly earnings

On a quarterly basis, the correlation is 0.66 & r-squared is 0.44

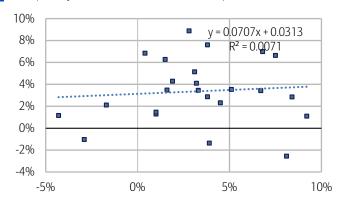


**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics, Company filings

BofA GLOBAL RESEARCH

### Exhibit 16: Correlation: COLD SS labor costs vs total C.S. workers

On a quarterly basis, the correlation is 0.08 & r-squared is 0.01

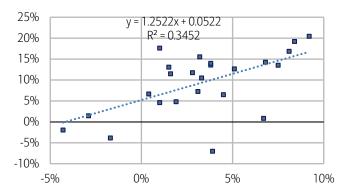


**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics, Company filings

BofA GLOBAL RESEARCH

# Exhibit 18: Correlation: COLD SS labor costs vs C.S. weekly payroll

On a quarterly basis, the correlation is 0.59& r-squared is 0.35



**Source:** Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment Statistics, Company filings

BofA GLOBAL RESEARCH

#### Stocks mentioned

Prices and ratings for stocks mentioned in this report

BofA TickerBloomberg tickerCompany namePriceRatingCOLDCOLD USAmericold Realty TrUS\$ 28.17B-1-7

Source: BofA Global Research

# Price objective basis & risk

# **Americold Realty Trust (COLD)**

Our \$35 price objective is derived using forward EV/EBITDA multiple method. We believe this is the simplest method for valuing COLD but recognize there are several methods to determine valuation. Our PO is based on a one year forward EV/EBITDA multiple of 21.5x applied to our forward EBITDA forecast of \$570mn.

Downside risks to our PO are: increasing supply, development spending on large automated facilities, operational risks, and cold storage customers bringing more of their inventory to in-house cold storage networks.

# **Analyst Certification**

I, Joshua Dennerlein, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.



# **US - REITs Coverage Cluster**

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Agree Realty Corp	ADC	ADC US	Joshua Dennerlein
	Alexandria Real Estate Equities	ARE	ARE US	Joshua Dennerlein
	American Homes 4 Rent	AMH	AMH US	Jeffrey Spector
	Americold Realty Trust	COLD	COLD US	Joshua Dennerlein
	AvalonBay Communities Inc	AVB	AVB US	Joshua Dennerlein
	Boston Properties	BXP	BXP US	Jeffrey Spector
	Brixmor Property Group	BRX	BRX US	Jeffrey Spector
	COPT Defense Properties	CDP	CDP US	Camille Bonnel
	Cousins Properties Inc.	CUZ	CUZ US	Camille Bonnel
	EastGroup Properties	EGP	EGP US	Jeffrey Spector
	Empire State Realty Trust	ESRT	ESRT US	Camille Bonnel
	Equity Residential	EQR	EQR US	Jeffrey Spector
	Essential Properties	EPRT	EPRT US	Joshua Dennerlein
	Federal Realty	FRT	FRT US	Jeffrey Spector
	-			
	Invitation Homes Inc	INVH	INVH US	Joshua Dennerlein
	Kimco Realty	KIM	KIM US	Jeffrey Spector
	Kite Realty Group	KRG	KRG US	Jeffrey Spector
	Phillips Edison & Company	PECO	PECO US	Jeffrey Spector
	Prologis, Inc.	PLD	PLD US	Camille Bonnel
	Public Storage, Inc.	PSA	PSA US	Jeffrey Spector
	Regency	REG	REG US	Jeffrey Spector
	Rexford Industrial Realty	REXR	REXR US	Camille Bonnel
	Sabra Health Care	SBRA	SBRA US	Joshua Dennerlein
	Simon Property	SPG	SPG US	Jeffrey Spector
	Ventas, Inc.	VTR	VTR US	Jeffrey Spector
	Welltower	WELL	WELL US	Joshua Dennerlein
	VVCIICOVVCI	VVLLL	WELE 03	Joshua Dennenem
IEUTRAL				
	Acadia Realty Trust	AKR	AKR US	Jeffrey Spector
	CubeSmart	CUBE	CUBE US	Jeffrey Spector
	EPR Properties	EPR	EPR US	Joshua Dennerlein
	Equity LifeStyle Properties	ELS	ELS US	Jeffrey Spector
	Essex Property Trust, Inc.	ESS	ESS US	Joshua Dennerlein
	Extra Space Storage, Inc.	EXR	EXR US	Jeffrey Spector
	Getty Realty Corp.	GTY	GTY US	Joshua Dennerlein
				•
	Highwoods Properties	HIW	HIW US	Camille Bonnel
	InvenTrust Properties	IVT	IVT US	Jeffrey Spector
	Kilroy Realty Corporation	KRC	KRC US	Camille Bonnel
	Macerich	MAC	MAC US	Jeffrey Spector
	OMEGA Healthcare	OHI	OHI US	Joshua Dennerlein
	Realty Income	0	O US	Jeffrey Spector
	Retail Opportunity Investments Corp.	ROIC	ROIC US	Jeffrey Spector
	SL Green Realty	SLG	SLG US	Camille Bonnel
	Sun Communities	SUI	SULUS	Joshua Dennerlein
	UDR, Inc.	UDR	UDR US	Joshua Dennerlein
	Veris Residential Inc	VRE	VRE US	Joshua Dennerlein
	Vornado Realty	VNO	VNO US	Camille Bonnel
	. ornado ricarcy	1110	1110 03	Carrinic Dornici
NDERPERFORM				
	American Assets Trust	AAT	AAT US	Camille Bonnel
	Armada Hoffler Properties	АНН	AHH US	Camille Bonnel
	Camden Property Trust	CPT	CPT US	Joshua Dennerlein
	Douglas Emmett	DEI	DELUS	Camille Bonnel
	Healthpeak Properties, Inc.	PEAK	PEAK US	Joshua Dennerlein
	Hudson Pacific Properties, Inc.	HPP	HPP US	Camille Bonnel
	Kennedy Wilson	KW	KW US	Joshua Dennerlein
				•
	LXP Industrial Trust	LXP	LXP US	Camille Bonnel
	Medical Properties Trust, Inc.	MPW	MPW US	Joshua Dennerlein
	Mid-America Apartment Communities, Inc.	MAA	MAA US	Joshua Dennerlein
	National Storage Affiliates Trust	NSA	NSA US	Jeffrey Spector
	NetSTREIT	NTST	NTST US	Joshua Dennerlein
	NNN REIT Inc	NNN	NNN US	Joshua Dennerlein
	Paramount Group	PGRE	PGRE US	Camille Bonnel
	Peakstone Realty Trust	PKST	PKST US	Joshua Dennerlein



#### **US - REITs Coverage Cluster**

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Tanger Factory	SKT	SKT US	Jeffrey Spector
	WP Carey	WPC	WPC US	Joshua Dennerlein

# **Disclosures**

# **Important Disclosures**

#### Americold Realty Tr (COLD) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading 'Fundamental Equity Opinion Key'. Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

#### Equity Investment Rating Distribution: REITs (Real Estate Investment Trusts) Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	40	46.51%	Buy	33	82.50%
Hold	27	31.40%	Hold	21	77.78%
Sell	19	22.09%	Sell	16	84.21%

#### 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<sup>R2</sup>

Buy	≥ 10%	≤ /0%
Neutral	≥ 0%	≤ 30%
Inderperform	N/A	≥ 20%

R2Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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: Americold Realty Tr. The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: Americold Realty Tr.



BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: Americold Realty Tr.

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: Americold Realty Tr.

BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: Americold Reality Tr.

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: Americold Realty Tr

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: Americold Realty Tr.

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: Americald Realty Tr.

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 (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): 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 Prudential 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 <a href="https://www.bofaml.com/BofASEdisclaimer">www.bofaml.com/BofASEdisclaimer</a>; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America 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 ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch (Hong Kong): Merr (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): Merrill Lynch (Canada): Merrill Lynch (Mexico): Merrill Mexico): Merrill Lynch (Mexico): Merrill Lynch (Mexico): Merrill Lynch (Mexico): Merrill Lynch (Me 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 (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch (I Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch (S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; 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, in

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 information.



# **Research Analysts**

Jeffrey Spector Research Analyst BofAS jeff.spector@bofa.com

#### Joshua Dennerlein

Research Analyst BofAS joshua.dennerlein@bofa.com

Camille Bonnel >> Research Analyst Merrill Lynch (Canada) camille.bonnel@bofa.com

#### Steven Song

Research Analyst BofAS huainan.song@bofa.com

#### **Daniel Byun**

Research Analyst daniel.byun@bofa.com

#### Lizzy Doykan

Research Analyst BofAS lizzy.doykan@bofa.com

#### **Andrew Berger**

Research Analyst andrew.berger2@bofa.com

# Farrell Granath

Research Analyst BofAS farrell.granath@bofa.com

**REITs Team** 

>> Employed by a non-US affiliate of BofAS and is not registered/qualified as a research analyst under the FINRA rules. Refer to "Other Important Disclosures" for information on certain BofA Securities entities that take responsibility for the information herein in particular jurisdictions.

