

## Cold Storage REITs

## BofA Cold storage inventory tracker

## Industry Overview

## USDA data provides a proxy for COLD's business

In this report, we track United States Department of Agriculture (USDA) cold storage inventory levels. The USDA data reflects end-of-month stocks of meats, dairy products, poultry products, fruits, nuts and vegetables in refrigerated warehouses across the US. We view this as an important proxy for Americold's (ticker: COLD) inventory levels and same store stats given the correlation between the two.

## USDA inventory levels Increased M/M in October

As shown in Exhibit 5, the latest USDA inventory levels decreased 4.0% M/M (prior month: +3.5%). Our COLD model assumes a Q/Q increase in occupancy of 2.0% in 4Q23. Based on the pre-pandemic average, we note that November through June is a period when USDA inventories decline (seasonality).

## Poultry inventory levels decreased M/M

Poultry is COLD's third largest category at 14% of revenues. In November, inventory levels decreased 8.0% M/M (prior month: -5.9%). This compares to pre-pandemic average of -15.3% M/M change in the same month. When compared to the same month in 2022 (Y/Y), poultry inventory levels increased by 3.2%.

## Red meat inventory levels decreased M/M

Red meat is roughly 11% of COLD's revenues. In November, inventory levels decreased 1.8% M/M (prior month: +0.1%). This compares to pre-pandemic average of -2.2% M/M change in the same month. When compared to the same month in 2022 (Y/Y), red meat inventory levels decreased by 11.2%.

## USDA data is correlated to COLD's inventory levels

On an annual basis, we find COLD's SS revenue has a 0.61 correlation with the USDA inventory levels. On a quarterly basis, the correlation is 0.68. SS NOI has a 0.84 correlation on an annual basis and 0.85 on a quarterly basis. The USDA data is a proxy for COLD's underlying commodity exposure.

## But does not provide a full picture

The USDA does not capture COLD's exposure to retail, packaged foods and seafood. We note that based on COLD's 3Q inventory levels, COLD is gaining market share. We also believe that the USDA data has become less relevant as a predictor of COLD's inventory levels given that COLD appears to be taking market share from competitors.

Link to the data: [USDA inventory data](#)

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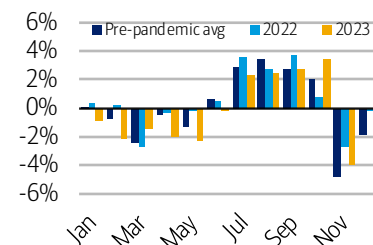
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[See Team Page for List of Analysts](#)

## Exhibit 1: Total commodities: M/M % change

2023 is tracking closely to pre-pandemic avg



Source: USDA

Note: Pre-pandemic period covers 2010-2019

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Key terms:

M/M: Month over month;

SS: same store

Y/Y – Year over year

COLD: Americold Realty Trust Inc

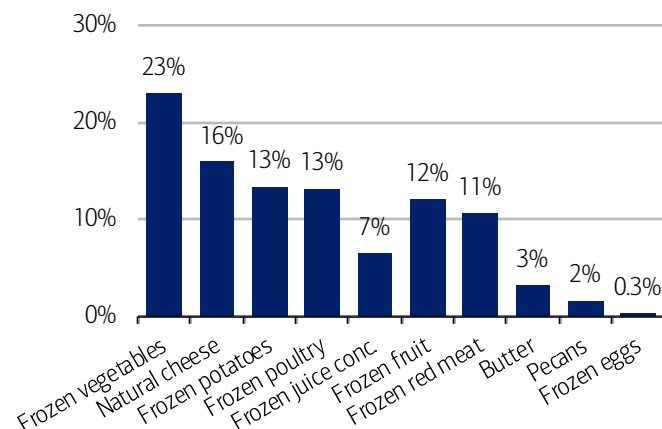
USDA inventory levels: We show total and key sub-category inventory levels within the USDA report. The charts highlight the pre- and post- pandemic levels.

Correlation analysis: A quarterly and annual correlation analysis between the USDA data (total commodities) and COLD's SS revenue, SS NOI and SS occupancy.

# USDA vs COLD

## Exhibit 2: Commodities within the total cold storage chain

Frozen vegetables is the largest commodities in total cold storage exposure

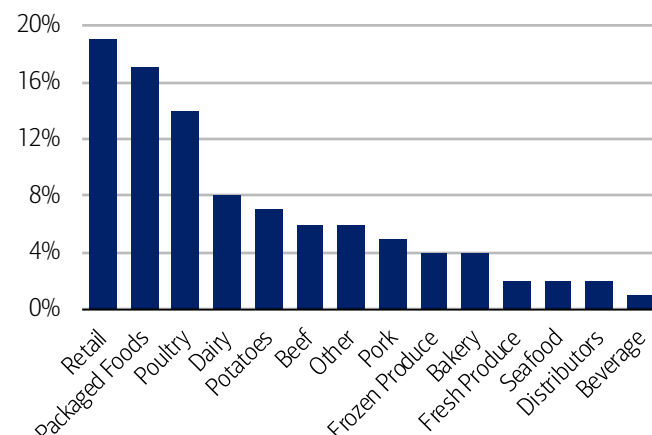


Source: USDA

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## Exhibit 3: COLD exposure to different commodities

Percent of total warehouse revenue, trailing 12 months



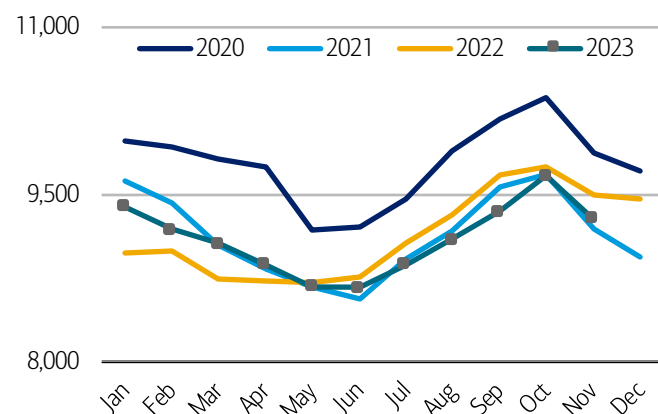
Source: Company filings

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## Total USDA inventory levels

### Exhibit 4: Total commodities: inventory levels (M pounds)

Inventory levels are trending up in 2023

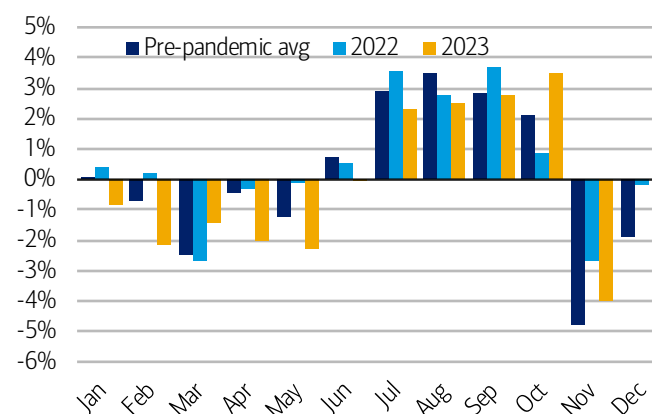


Source: USDA

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### Exhibit 5: Total commodities: M/M % change

2023 is tracking closely to the pre-pandemic average



Source: USDA

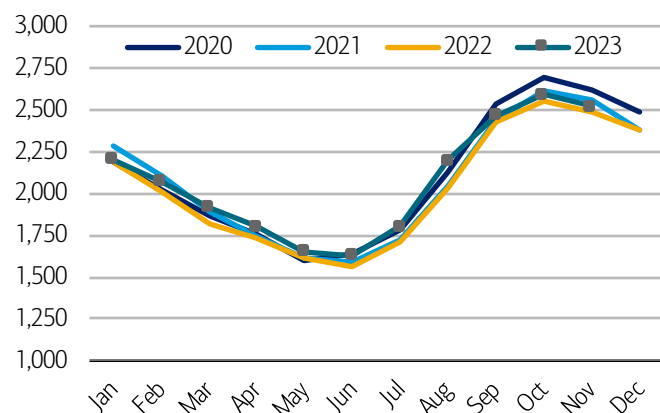
Note: Pre-pandemic period covers 2010-2019

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# Inventory levels of key USDA commodities

## Exhibit 6: Frozen vegetables: inventory levels (M pounds)

Inventory levels are trending up in 2023

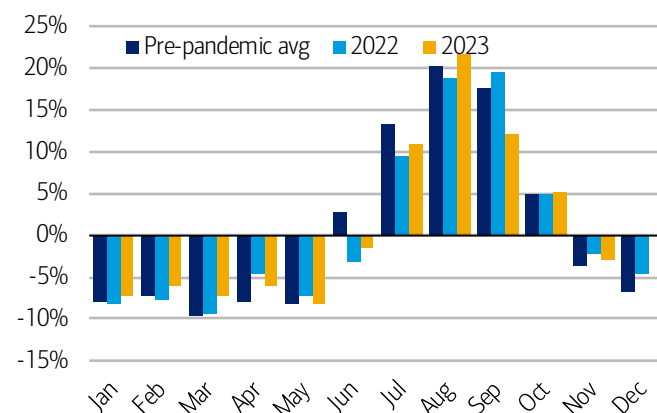


Source: USDA

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## Exhibit 7: Frozen vegetables: M/M % change

2023 is tracking closely to the pre-pandemic average



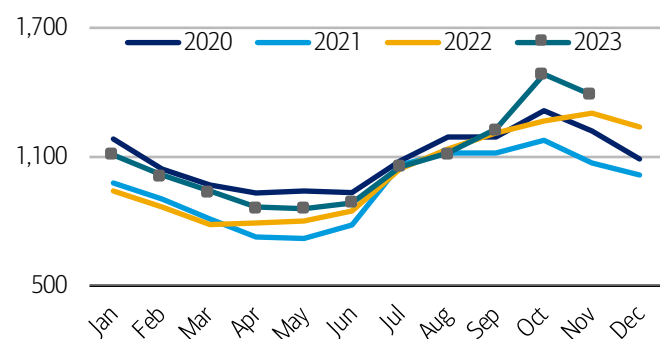
Source: USDA

Note: Pre-pandemic period covers 2000-2019

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## Exhibit 8: Frozen fruit: inventory levels (M pounds)

Inventory levels are trending up in 2023

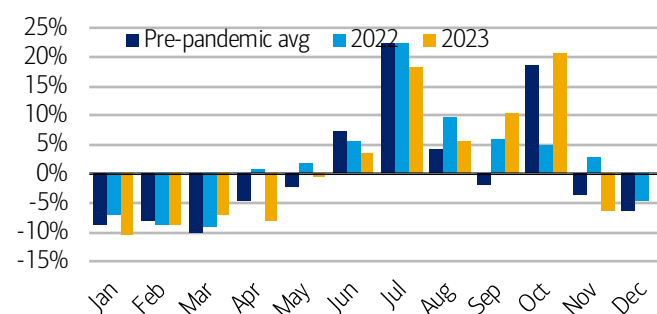


Source: USDA

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## Exhibit 9: Frozen fruit: M/M % change

2023 is tracking closely to the pre-pandemic average



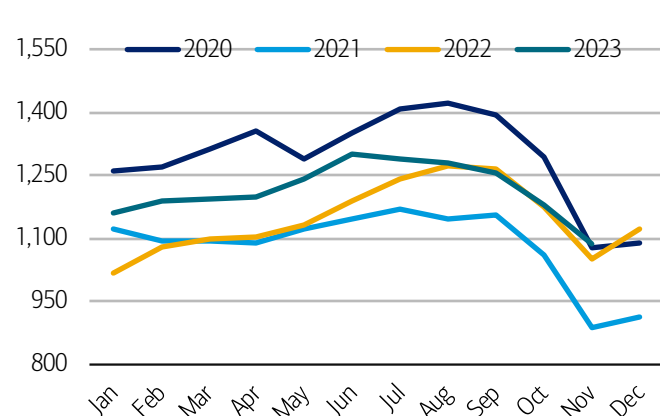
Source: USDA

Note: Pre-pandemic period covers 2000-2019

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## Exhibit 10: Poultry: inventory levels (M pounds)

Inventory levels are trending up in 2023

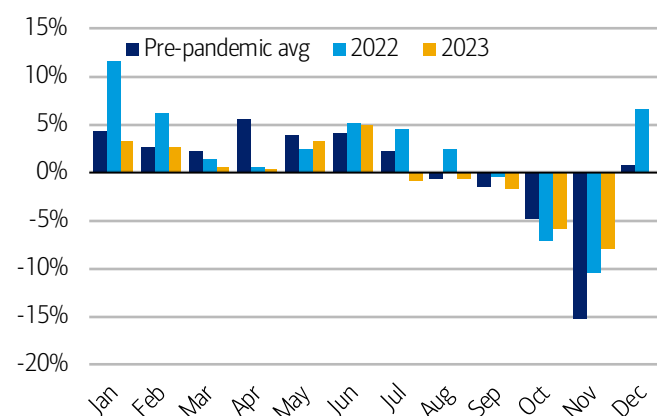


Source: USDA

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## Exhibit 11: Poultry: M/M % change

2023 is tracking closely to the pre-pandemic average



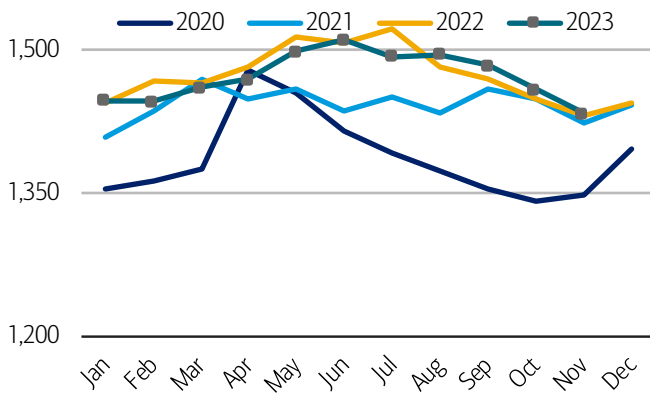
Source: USDA

Note: Pre-pandemic period covers 2000-2019

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**Exhibit 12: Natural cheese: inventory levels (M pounds)**

Inventory levels are trending up in 2023

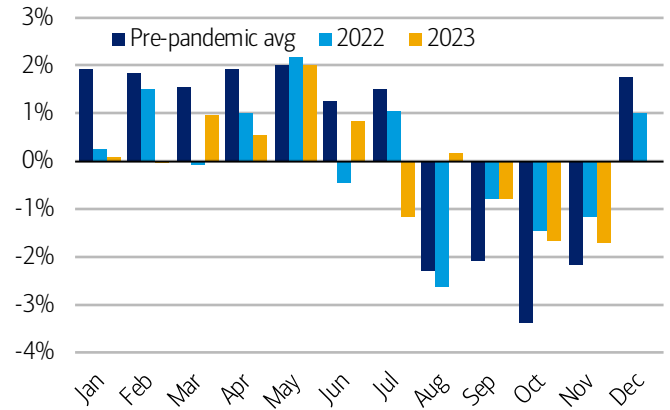


Source: USDA

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**Exhibit 13: Natural cheese: M/M % change**

2023 is tracking closely to the pre-pandemic average



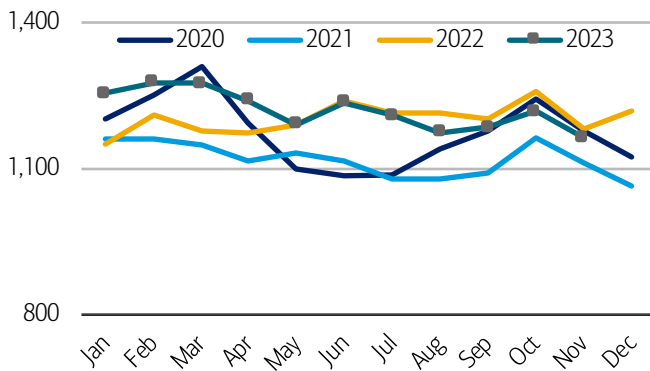
Source: USDA

Note: Pre-pandemic period covers 2000-2019

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**Exhibit 14: Frozen potatoes: inventory levels (M pounds)**

Inventory levels are trending down in 2023

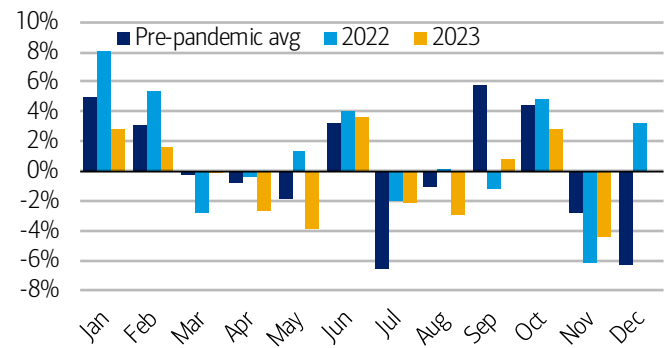


Source: USDA

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**Exhibit 15: Frozen potatoes: M/M % change**

2023 is tracking closely to the pre-pandemic average



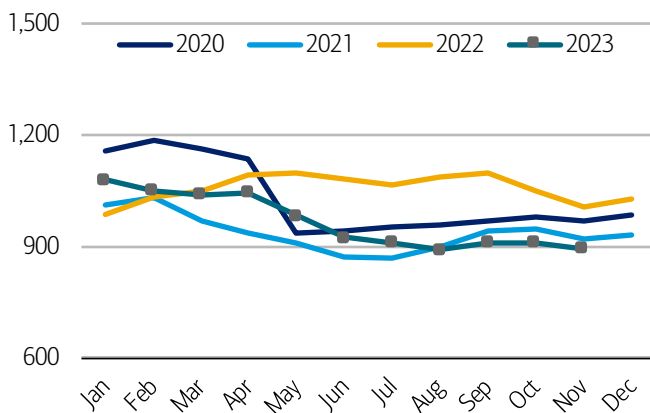
Source: USDA

Note: Pre-pandemic period covers 2000-2019

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**Exhibit 16: Frozen red meat: inventory levels (M pounds)**

Inventory levels are trending down in 2023

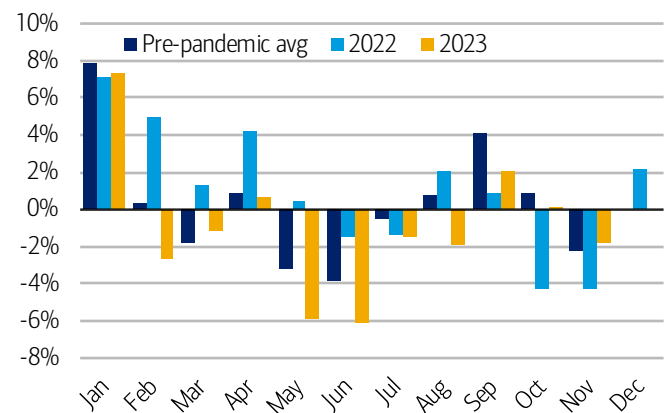


Source: USDA

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**Exhibit 17: Frozen red meat: M/M % change**

2023 is tracking closely to the pre-pandemic average



Source: USDA

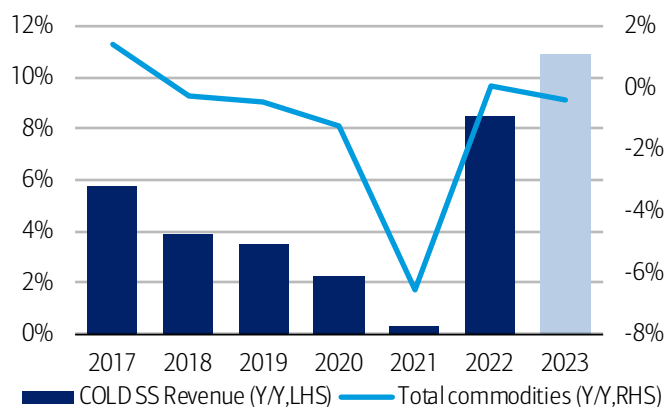
Note: Pre-pandemic period covers 2000-2019

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# Annual correlations: USDA vs COLD

## Exhibit 18: COLD SS revenue vs USDA inventory

Growth in annual USDA inventory levels vs COLD SS revenue growth

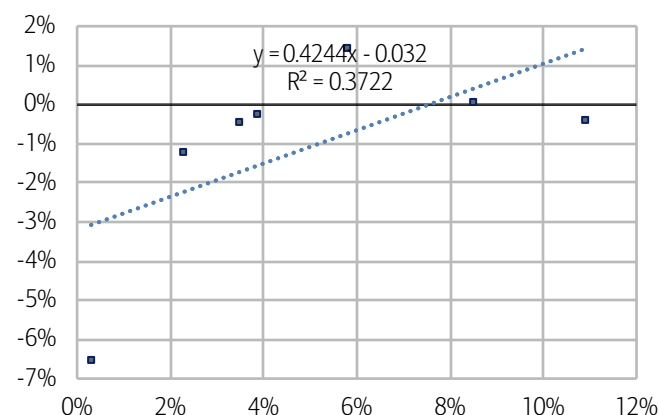


Source: USDA, Company filings

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## Exhibit 19: Correlation: USDA changes vs COLD SS revenue

On an annual basis, the correlation is 0.61 & r-squared is 0.37

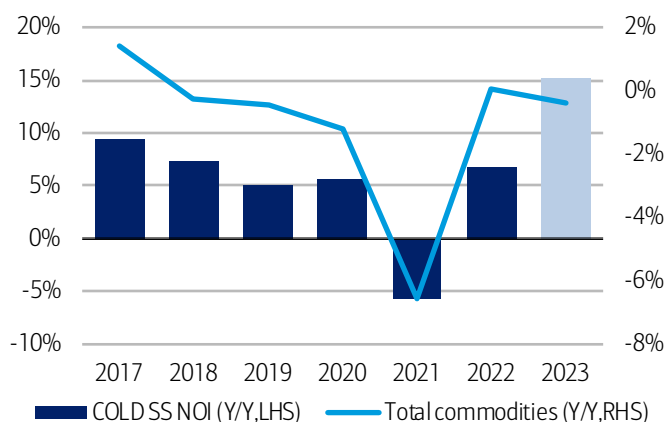


Source: USDA, Company filings

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## Exhibit 20: COLD SS NOI vs USDA inventory

Growth in annual USDA inventory levels vs COLD SS NOI growth

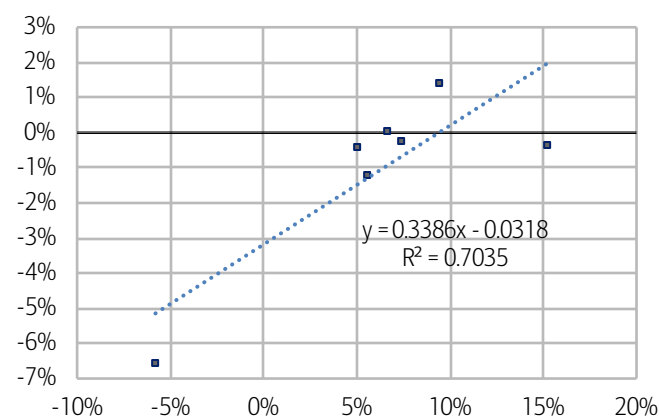


Source: USDA, Company filings

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## Exhibit 21: Correlation: USDA changes vs COLD SS NOI

On an annual basis, the correlation is 0.84 & r-squared is 0.7

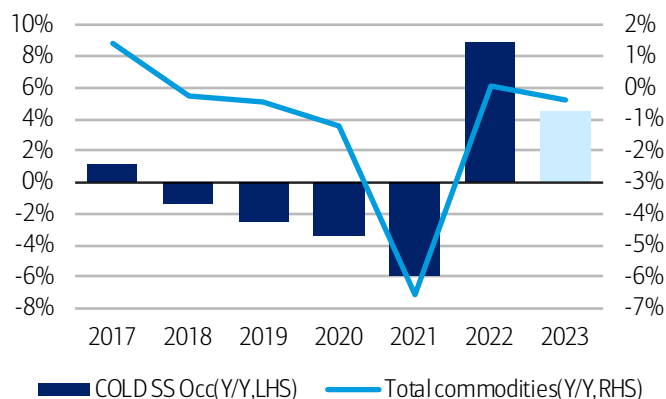


Source: USDA, Company filings

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## Exhibit 22: COLD SS occupancy vs USDA inventory

Growth in annual USDA inventory levels vs COLD SS occupancy

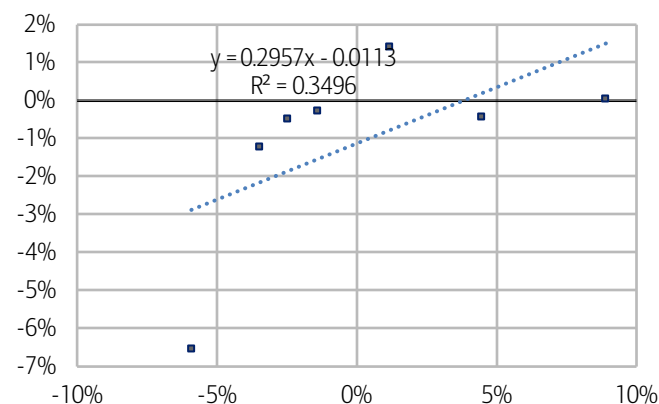


Source: USDA, Company filings

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## Exhibit 23: Correlation: USDA changes vs COLD SS occupancy

On an annual basis, the correlation is 0.59 & r-squared is 0.35



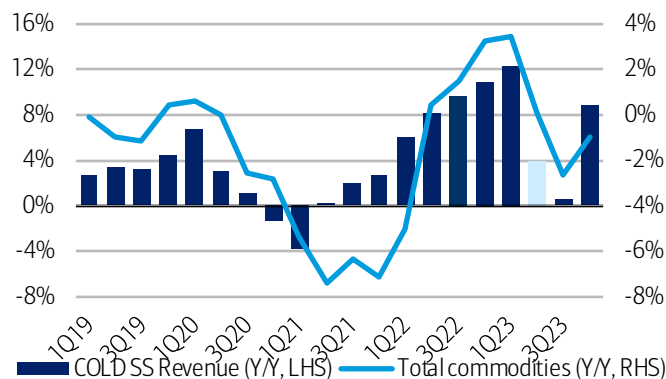
Source: USDA, Company filings

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# Quarterly correlations: USDA vs COLD

## Exhibit 24: COLD SS revenue vs USDA inventory

Growth in USDA inventory levels vs COLD SS revenue growth



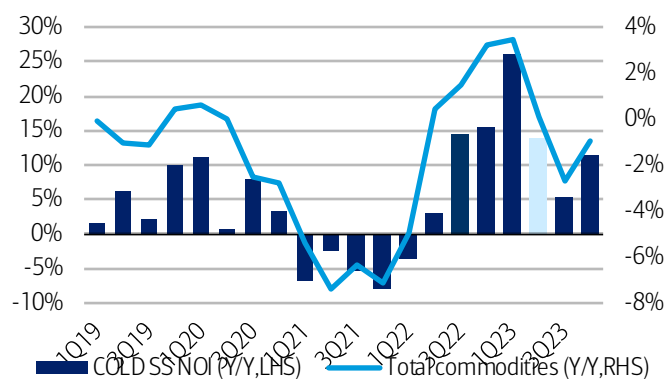
Source: USDA, Company filings

Note: Light blue bar represents BofAe

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## Exhibit 26: COLD SS NOI vs USDA inventory

Growth in annual USDA inventory levels vs COLD SS NOI growth



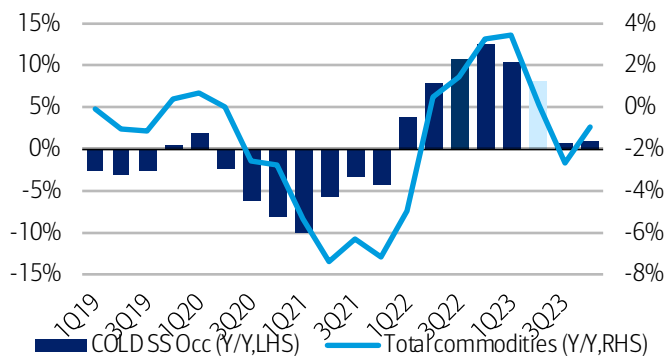
Source: USDA, Company filings

Note: Light blue bar represents BofAe

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## Exhibit 28: COLD SS occupancy vs USDA inventory

Growth in USDA inventory levels vs COLD SS occupancy



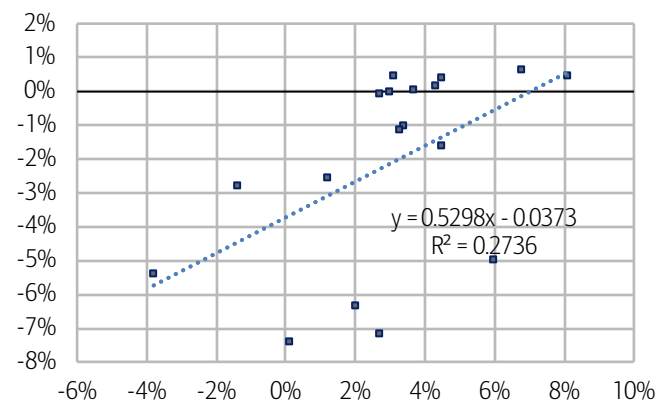
Source: USDA, Company filings

Note: Light blue bar represents BofAe

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## Exhibit 25: Correlation: USDA changes vs COLD SS revenue

On a quarterly basis, the correlation is 0.68 & r-squared is 0.47

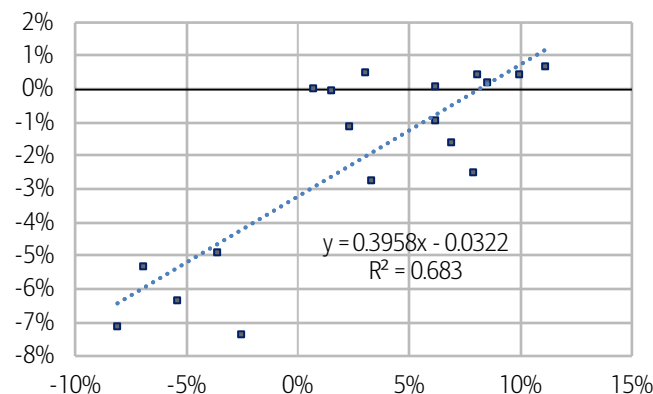


Source: USDA, Company filings

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## Exhibit 27: Correlation: USDA changes vs COLD SS NOI

On a quarterly basis, the correlation is 0.85 & r-squared is 0.72

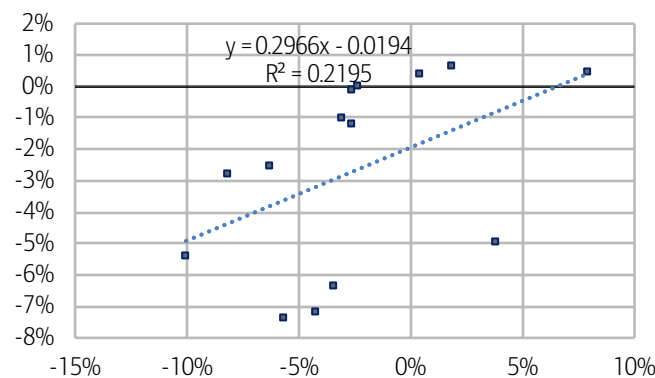


Source: USDA, Company filings

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## Exhibit 29: Correlation: USDA changes vs COLD SS occupancy

On a quarterly basis, the correlation is 0.71 & r-squared is 0.5



Source: USDA, Company filings

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**Exhibit 30: Stock Mentioned**

Stock prices and ratings mentioned in this report

BofA Ticker	Bloomberg ticker	Company name	Price	Rating
COLD	COLD US	Americold Realty Tr	US\$ 30.30	B-1-7

Source: BofA Global Research

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## Price objective basis & risk

### Americold Realty Trust (COLD)

Our \$30 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 19.0x applied to our forward EBITDA forecast of \$574mn.

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
<b>BUY</b>				
	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
	OMEGA Healthcare	OHI	OHI US	Joshua Dennerlein
	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
	Welltower	WELL	WELL US	Joshua Dennerlein
<b>NEUTRAL</b>				
	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
	Realty Income	O	O US	Jeffrey Spector
	Retail Opportunity Investments Corp.	ROIC	ROIC US	Jeffrey Spector
	SL Green Realty	SLG	SLG US	Camille Bonnel
	Sun Communities	SUI	SUI US	Joshua Dennerlein
	UDR, Inc.	UDR	UDR US	Joshua Dennerlein
	Ventas, Inc.	VTR	VTR US	Jeffrey Spector
	Veris Residential Inc	VRE	VRE US	Joshua Dennerlein
	Vornado Realty	VNO	VNO US	Camille Bonnel
<b>UNDERPERFORM</b>				
	American Assets Trust	AAT	AAT US	Camille Bonnel
	Armada Hoffer Properties	AHH	AHH US	Camille Bonnel
	Camden Property Trust	CPT	CPT US	Joshua Dennerlein
	Douglas Emmett	DEI	DEI US	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
	STAG Industrial	STAG	STAG US	Camille Bonnel



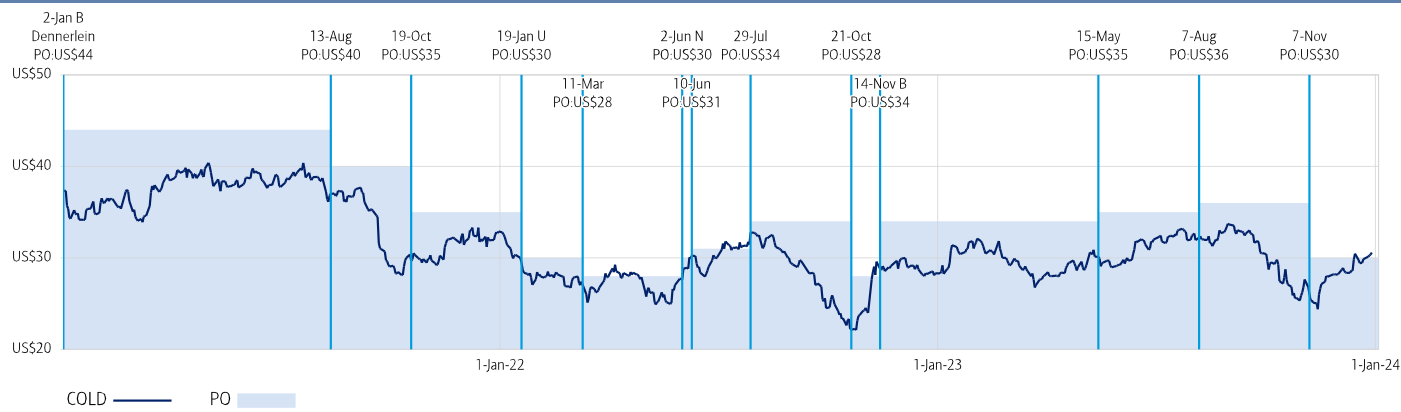
## US - REITs Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Tanger Factory	SKT	SKT US	Jeffrey Spector
	WP Carey	WPC	WPC US	Joshua Dennerlein
<b>RSTR</b>	Spirit Realty Capital	SRC	SRC US	Joshua Dennerlein

## Disclosures

## Important Disclosures

## Americold Realty Tr (COLD) Price Chart



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 <sup>R1</sup>	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 <sup>R1</sup>	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%

<sup>R1</sup> 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%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

<sup>R2</sup> 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.

**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.

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