June 10, 2025

Cold storage real estate: insulated from economic headwinds?

With supply chain and distribution management challenges likely on the horizon, the cold storage sector is positioned for strong performance due to its niche characteristics that include the necessity of purpose, significant cost to develop new facilities, strategic locations, and cross-industry integration.

Now a quarter into 2025, the U.S. economy is facing a myriad of headwinds, most notably recently implemented tariffs resulting in a global trade war. The downstream effects are numerous and vary in severity but predominantly place the economy at heightened risk for a downturn—or even recession. Any economic distress will undoubtedly have broad-reaching effects: While the longer term could see upside in onshoring, this transitionary period places consumer-oriented, distribution, and production sectors at near-term risk and, in turn, the commercial real estate market as a whole.

Advancing through 2025, capital markets will likely seek greater diversification as well as opportunities to enhance overall returns and net operating income (NOI) by employing operational tactics. A fundamental shift in the importance of income yield is likely as to recovering valuations will likely be delayed or elongated with any economic downturn. Shifts and repositioning in fund strategies, an emphasis on specialist funds targeting specific sectors, and increased alternative and niche integration in private core/core-plus real estate funds have already taken shape. These moves will continue to galvanize investor interest, especially if viewed as a way to mitigate risk through diversification during a weak economy. Even if traditional sectors appear to benefit from strong fundamentals, the industrial real estate sector, for instance, remains highly favored among investors. This sector is anchored in strong long-term fundamentals, including e-commerce penetration, new migration, and supply chain patterns; however, the sector also potentially faces a high level of exposure to potential economic contraction. The ramifications of tariffs, inflation, and shifts for business investment within the industrial market will likely be varied and potentially result in both upside and downside.[1]

- Material costs, especially in the near term, are expected to rise. Tariffs will translate to rising export and import costs, raising both the price of intermediate goods required for production and ultimately the final product.
- Labor challenges are likely to materialize, in part due to more restrictive immigration policy, but also as distributors and third-party logistics (3PLs) are forced to rework supply chain pathways and source new pools of labor that may not be as robust, compete with cross-industry migration or workers, or have to reduce hours or their workforce to meet cost pressures. Relative to other sectors, cold storage exhibits high operating intensity with estimated labor expenses accounting for upward of 30% of revenue, exposing it to heightened risk in relation to lower immigration levels, which would extend upward pressure on these costs.[2]
- Transportation costs—already a significant expense for distributors, accounting for about half of total logistics costs—will potentially experience upward pressure through the increased costs of equipment, maintenance, and energy required to transport.
- Supply chain disruption has the potential to further increase supply chain diversification efforts. Likely strategies include shifting the flow of goods through alternate trade routes and origin countries, as well as increasing domestic sourcing. Shifting trade flows will have a varied impact on markets, with some benefiting, while others may see related reduced demand. In addition, although increasing domestic production may not be immediate, the automotive and pharmaceutical industries are already showing signs of increased domestic investment to shore up production resilience and mitigate increasing tariff-related costs.

The time frame of this impact is also a consideration. Tariff and trade policy uncertainty during the first quarter led to a surge in import activity aimed at inventory front running. This saw seaport volumes rise alongside air freight demand given their quicker delivery timelines versus ocean freight. This, in turn, fueled resiliency in warehouse demand over the near term.[3] Longer term, however, as higher prices translate into reduced purchasing power, this demand is likely to wane with a decline in demand for consumer goods. So while the sector still maintains strong fundamentals and investor interest, alternative industrial subsectors, such as industrial outdoor storage, or cold storage, present attractive opportunities, benefiting from similar drivers but also providing some diversification in a period of uncertainty and volatility. Cold storage in particular boasts countercyclical qualities that may help to insulate the sector from a downturn or recession in addition to factors that boost the long-term growth potential of the sector. Among the various industrial subsectors, cold storage stands out due to its critical role in the supply chain:

- **Necessity of purpose/critical infrastructure**—Cold storage provides a unique function in the supply chain, preserving the quality and safety of perishable goods such as food, pharmaceuticals, and other temperature-sensitive items, extending shelf life, and ensuring regulatory compliance. Moreover, these facilities aren't easily or cost effectively replicated.
- **Inelastic demand**—Cold storage is supported by relatively stable and consistent demand given the necessity-based nature of the goods stored in such facilities. This occurs irrespective of changes in economic conditions or price levels, offering protection from declining consumption during periods of economic strain or downturn.
- **Cross-industry integration/diverse tenant base**—Cold storage is leveraged by a broad range of industries, including food/agriculture, pharmaceuticals, and biomedical, providing a diversified tenant base and a broad demand pool. These industries largely produce nondiscretionary products, insulating their tenant base from outsized declines in consumption during periods of declining consumer spending.

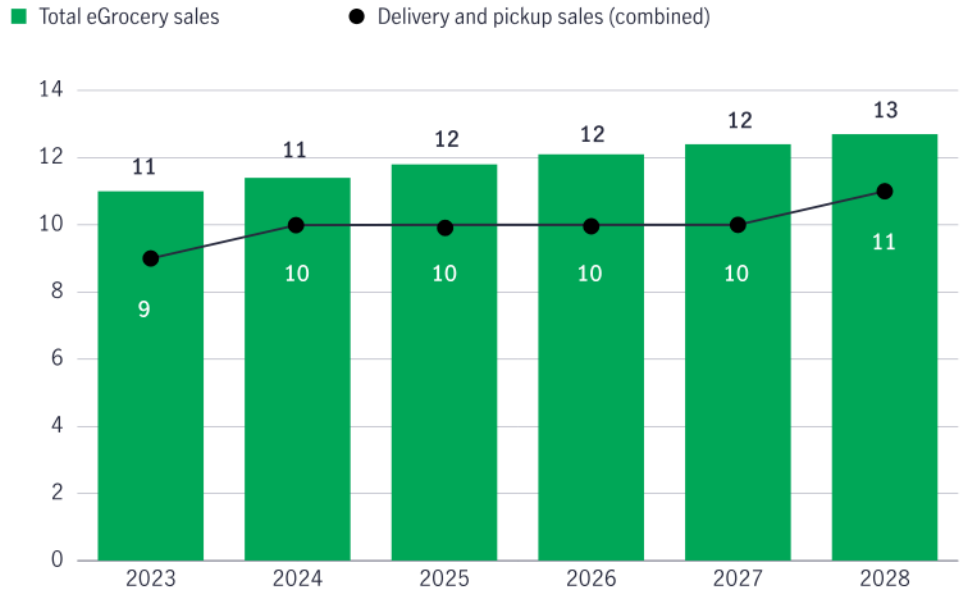
Other characteristics of cold storage that aren't necessarily countercyclical qualities but can help to mitigate investment risk during a downturn include:

- **Strategic locations**—Cold storage facilities are in highly strategic locations, often situated directly proximate to a port or intermodal facility in large industrial hubs, or along key spokes connecting to end users.
- **High barriers to entry**—Cold storage accounts for just 2% of industrial real estate stock and often faces difficulty in the entitlement and zoning process due to the power they require.[4] These challenges limit development, thereby enabling the sector to weather periods of demand pullback. Facilities are often build to suit, with optionality and choice for tenants highly limited.
- **Rapid innovation**—Modernized facilities can better leverage advanced technologies that enhance efficiency, energy savings, and temperature accuracy, ensuring product quality, safety, and supply chain resiliency while reducing operational costs.

U.S. cold storage market supply and demand

Demand-side fundamentals for cold storage are robust and anticipated to retain strength. More than 50% of food and pharmaceutical businesses plan to expand cold storage in the next five years. Online grocery spending totaled $9.7 billion as of March 2025, up 21% versus the previous year.[5] Delivery and ship-to-home methods are proving to be especially popular options—delivery sales rose by 30% on a year-over-year basis—emphasizing the need for a supply chain and infrastructure that supports this growing segment in which cold storage plays a critical role.

Share of online U.S. grocery sales: 2023–2028 (%)



Source: Brick Meets Click/Mercatus 5-Year eGrocery Sales Forecast, April 2024.

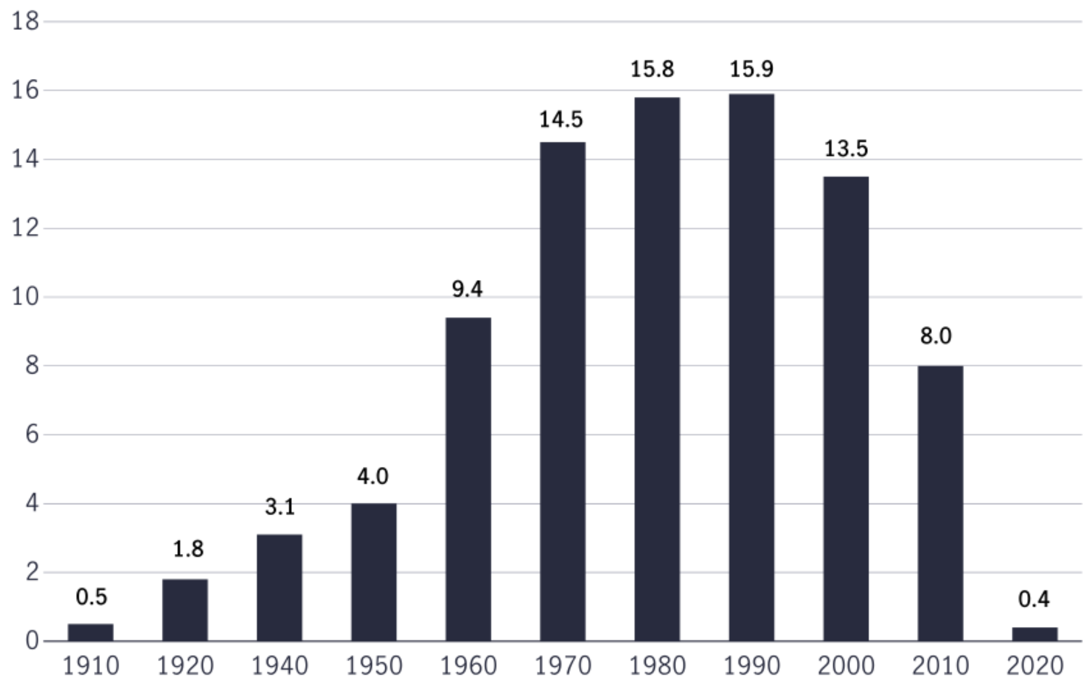
Cold storage inventory spans approximately 300 million square feet (MSF) (of which only 8.4% was built after 2010), including freezer, cooler, and multi-temperature space, and accounts for about 2% of total industrial inventory.[6] Cold storage facilities were traditionally in rural areas near large population centers. Now, the focus has shifted to facilities closer to these centers, with expansion in major U.S. metros, especially those with seaports or inland ports/intermodal hubs.[7] The sector continues to expand, with facilities growing by 8.6% between 2023 and 2024 compared with a historical 2.2% annual growth between 2013 and 2020.

Cold storage real estate development by size: 2020–2025

Source: “The Future of Speculative Cold Storage Development: Trends and Challenges,” Colliers, April 2025. SF refers to square feet.

Similar to the U.S. industrial market, COVID-19 pandemic-induced net migration patterns throughout the United States triggered growth in new industrial hubs, which also demanded cold storage products. E-commerce penetration into groceries, the growth of online grocers, BOPIS (buy online, pick up in store), and consumption patterns drove the need for increased volume and distribution of food and beverage goods and anchored cold storage expansion in and around growing population hubs. Nearly 6,000 MFS of cold storage space was completed between 2020 and 2023. This trend persisted: At the beginning of 2024, the development pipeline measured 9.4 million square feet (approximately 206 million cubic feet), nearing record highs;[8] however, it appears activity is moderating. Only five cold storage facilities were delivered in 2024 (1.1 MSF), followed by another 2.2 MSF expected to be delivered in 2025.[9] Cold storage inventory is generally dated, making updates and renovations particularly costly. These expenses are further compounded by challenging zoning and power requirements. Given today’s escalating building costs, we anticipate the development pipeline to pull back further.

Cold storage real estate inventory is outdated (%)



Source: JLL Research as of April 2024.

Cold storage real estate's investable universe

While investors may find most outperformance in new facilities, the pool of assets is extremely limited. Nearly 80% of cold storage facilities in the United States were built before 2000. Much of the product under way is build to suit, due to the highly specialized nature of tenant requirements and high material/equipment costs. Even without the impact of tariffs and inflation, overall development costs can be 2x higher than traditional industrial assets.

The cold storage inventory is significantly concentrated, with the top five U.S. players comprising 50.6% of global industry capacity at 7.4 billion cubic feet, and 79.0% of North America's capacity.[10] Significant competition for this asset class (growth by acquisition is common) represents multiple exit points and liquidity for the investment. The two largest players in North America (by capacity, in cubic billion feet) are Lineage and Americold, which are both public and represent the only pure-play cold storage real estate investment trusts (REITs). Lineage's IPO last July raised

$4.4 billion and represents not just the largest IPO in the United States in 2024 but also the biggest U.S. REIT IPO in history.

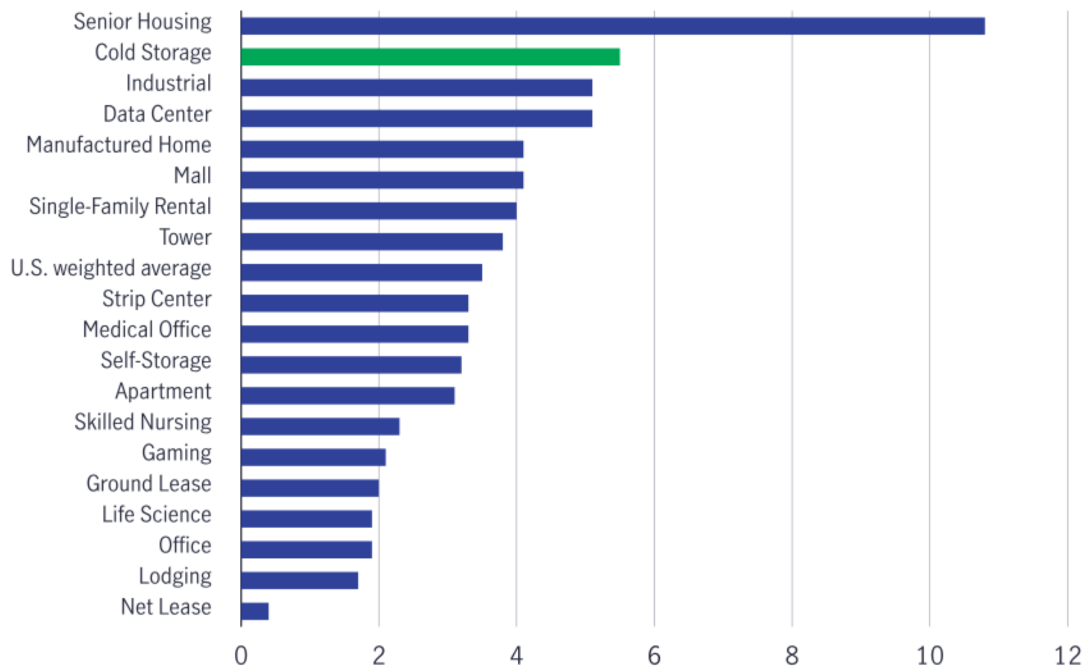
Top five North America cold storage companies by refrigerated storage capacity

Company	U.S. capacity ft^3	U.S. market share
Lineage Logistics	2.09 billion	44%
Americold Logistics	1.24 billion	26%
United States Cold Storage (U.S. based)	419 million	3%
FreezPak Logistics	141 million	3%
Interstate Warehousing	132 million	3%
Total	3.74 billion	79.0%

Source: Global Cold Chain Alliance 2025 North American Top 25 List, as of April 2025.

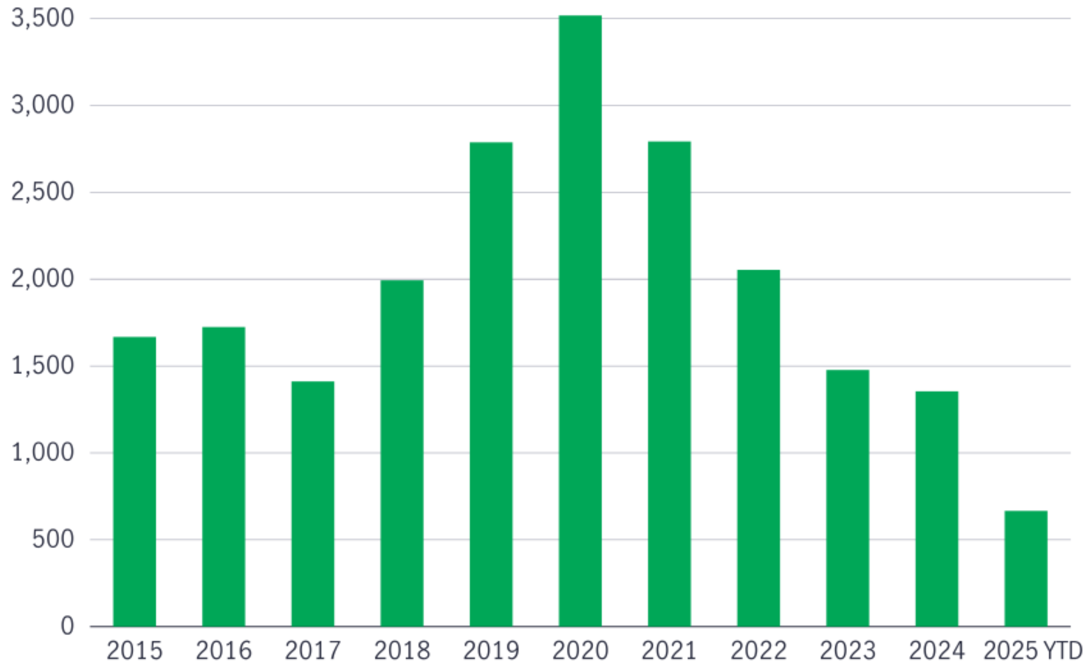
From an investor standpoint, the focus on growing subsectors or alternatives in support of higher yield is gaining momentum, and these areas are increasingly becoming institutional in their reach. The cold storage sector, given its competitive and small market, appears to be a unique and desirable niche and has experienced the second-highest NOI growth compared to all other property sectors, according to Green Street. This underscores its strong demand and limited supply and indicates robust profitability and resilience. Investment volume has tapered since 2020, but with $1.3 billion trading in 2024, the cold storage investment landscape remains active.

NOI growth across property sectors: 2025–2028 (%)



Source: Green Street, as of December 2024. NOI refers net operating income.

Transaction volume for U.S. cold storage (%)



Source: RCA, as of April 2025.

The outlook for cold storage in the United States

Due to a relatively limited history of institutional cold storage investment, the U.S. cold storage market is evolving, and as such, its key market players are quickly changing. Various themes drive expansion in cold storage today, reflecting a unique combination of technological advancement, human behavior, and macro factors. The following select themes will continue to shape the advancement of cold storage as an area of institutional investment:

Grocer omnichannel advancement

- The growth of e-commerce generally and within the grocery segment is driving demand for more efficient and cost-effective distribution. This includes the need for fulfillment centers that are close to grocery stores and farther out as a hub-and-spoke strategy emerges.
- Grocers are advancing in their omnichannel efforts, with a shift from in store sales to e-commerce, demanding increased management of online orders, BOPIS, and expanding delivery catchment areas. Approximately 1.25 MSF of new distribution space is required to support every $1 billion of total sales that shift from in store, which includes grocer sales.

- The grocery business is generally low margin, and to accommodate e-commerce investment, more inventory, overhead, and labor are required, triggering a need to leverage more efficient warehousing and cold storage strategies.

Cold storage industry consolidation

- Advancements in omnichannel and required technology investment are triggering increased merger and acquisition activity, alongside more collaboration and partnership efforts among grocers due to their low-margin business.
- A few big-name cold storage providers represent the greatest market share for cold storage real estate ownership and management, and it's becoming increasingly difficult for smaller users to compete. The top two public refrigerated companies, Lineage and Americold, account for nearly three-quarters of this space.
- Most grocers and companies outsource their operations to these providers to avoid high operational costs and intensive, specialized management, and only very large-scale grocers are able to vertically integrate.
- 3PLs are entering the space, accounting for approximately a third of total leasing activity (per CBRE) in order to combat rising costs and supply chain challenges.

Changing consumer preferences, regulation, and globalization

- The growth in demand for healthier and fresh food supply is increasing—both inside and outside of e-commerce—further underscoring the need for mid-distribution process facilities to house food supply safely.
- Growing global, regional, and state-level regulatory and safety guidelines in relation to the distribution of these foods and agriculture generally are likewise prompting the need for specialization in fulfillment and cold storage centers that may differ substantially depending on location.
- Increased globalization and food trading demands improved supply chain management and the accommodation of distribution steps.

Occupier and market diversification

- Cold storage user types are typically food and beverage, agricultural, and grocer related, with pharmaceuticals forming a growing component of demand.
- This user diversification is driving the growth of micro-fulfillment centers, primarily used by grocers, to improve distribution efficiency and strategically expand market reach, while still maintaining major centralized fulfillment centers.
- Pharmaceutical and biotech companies likewise are becoming more strategic in their distribution management with the growth of at-home pharmaceutical delivery, shifting the footprint of fulfillment centers further outside core pharmaceutical production hubs.

This isn't to say the sector will be without challenges. Cold storage is costly to develop and highly nuanced in terms of operations, requiring highly specialized expertise and skill sets to develop, upgrade, and asset manage, underscoring the long-term value of these assets. The majority of cold storage inventory in the United States is more than 40 years old, and in light of the energy and technological demands of new tenants, many facilities cannot meet the requirements necessary for operations, limiting the investable universe. Relative to other sectors, cold storage exhibits high operating intensity, with labor expenses estimated to account for upward of 30% of revenue. This exposes it to heightened risk that's specific to labor costs during a potential downturn.[11]

Forging ahead in today's environment

Looking forward, amid the obvious challenges ahead for commercial real estate investment generally, cold storage presents an opportunity for investors to diversify while positioning strategically through countercyclical protection. The need for cold storage is clear, underscored by the inelastic demand for the nondiscretionary products it supports. This need is amplified by the continued expansion of e-commerce, which can help_mitigate risks from economic headwinds. Overall, it's estimated that every $1 billion in sales transitioned from in-store to e-commerce translates to 1.25 MSF of new industrial space, and this includes the low-margin grocery industry, which is transitioning to omnichannel platforms at a rapid pace.

Forecasts suggest that the global market value of cold storage will expand at an annual rate of 18.1%, reaching nearly $430 billion by 2030, with a $97 billion share in the United States.[12] As a result, institutional capital flow into cold storage is expected to increase, supported by favorable supply-and-demand fundamentals. As the market moves into a potentially weaker economic climate, these strong supply and demand fundamentals alongside their more recession-resistant characteristics position the sector as a potentially strong alternative investment area within commercial real estate, that can offer_resiliency and the potential to support outsized performance.

1 "What Global Trade Shifts Mean for US Industrial." Commercial Property Executive, April 23, 2025. **2** "Property Insights: The Impact of Slowing Immigration," Green Street, April 28, 2025. **3** "US: Tariff whiplash starting to cause supply-chain stress," Oxford Economics, March 14, 2025; Bureau of Transportation Statistics; Various port authority websites. January 2025. **4** "Cold Storage Demand Continues to Outpace Supply," JLL and NAIOP, June 6, 2024. **5** "March 2025 eGrocery Surges to $9.7 Billion: What It Means for Competing Online," Brick Meets Click, April 10, 2025. **6** JLL Research as of April 2024. **7** "Cold Storage Demand Continues to Outpace Supply," JLL and NAIOP, June 6, 2024. **8** "Cold Storage." AFIRE Summit Journal Issue #15, July 2024. **9** "The Future of Speculative Cold Storage Development: Trends and Challenges," Colliers, March 14, 2025. **10** Global Cold Chain Alliance 2025 North American Top 25 List, April 2025. **11** "Property Insights: The Impact of Slowing Immigration," Green Street, April 28, 2025. **12** "The Future of Speculative Cold Storage Development: Trends and Challenges," Colliers, March 14, 2025.

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