



New York, New York.

The Value of Place: Logistics Real Estate and Urban Freight

Melinda McLaughlin, SVP, Global Head of Research

Executive Summary

1. Introduction – a pivotal moment
2. Persistent disruption
3. Challenges and the space shortage
4. The value of place and the future of logistics real estate

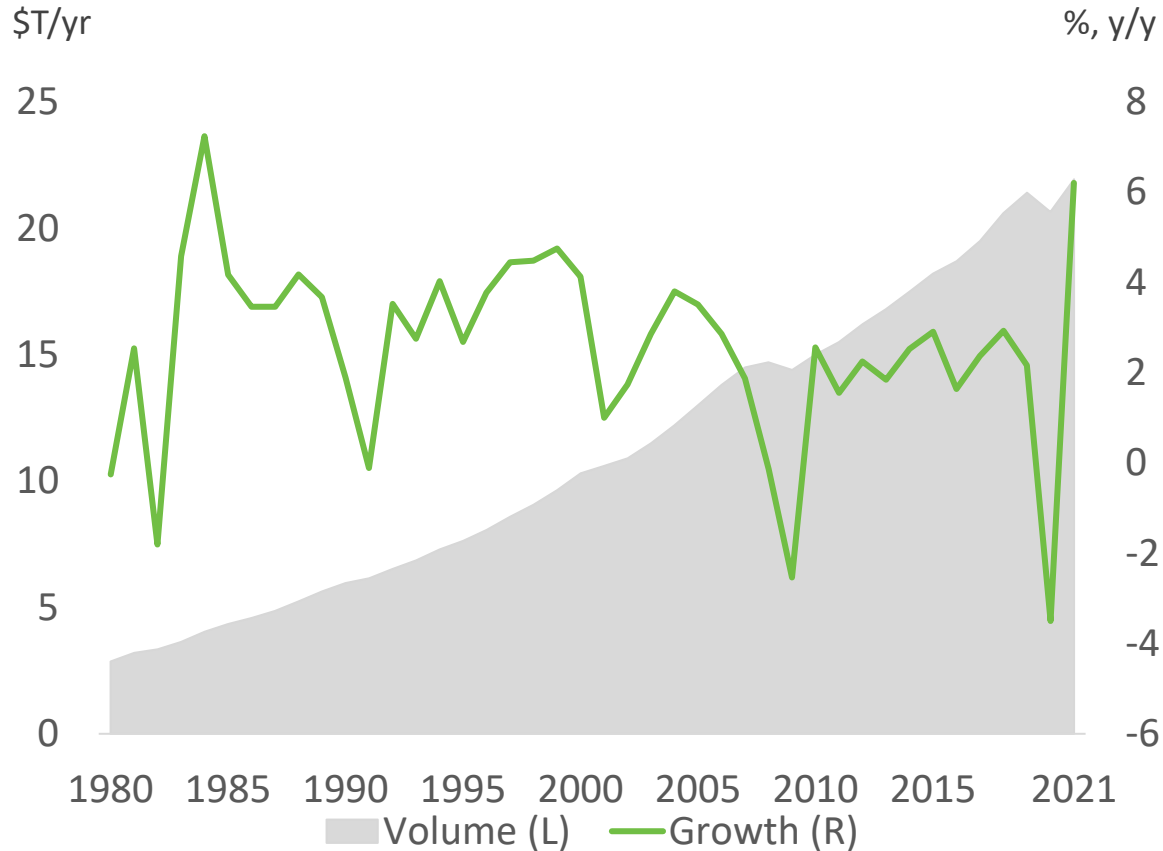


Georgetown Crossroads, Seattle, Washington

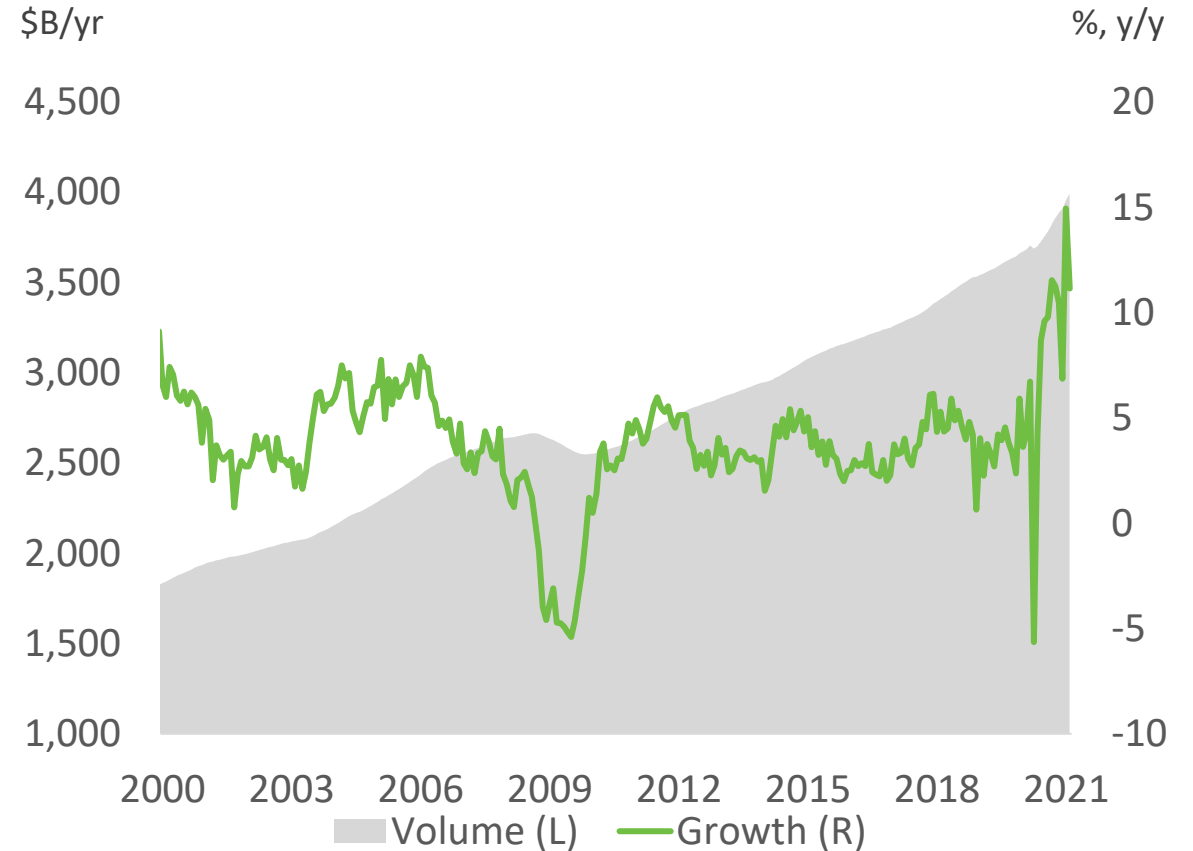
A pivotal moment for supply chains

Consumer demand surge

REAL GDP GROWTH, U.S.



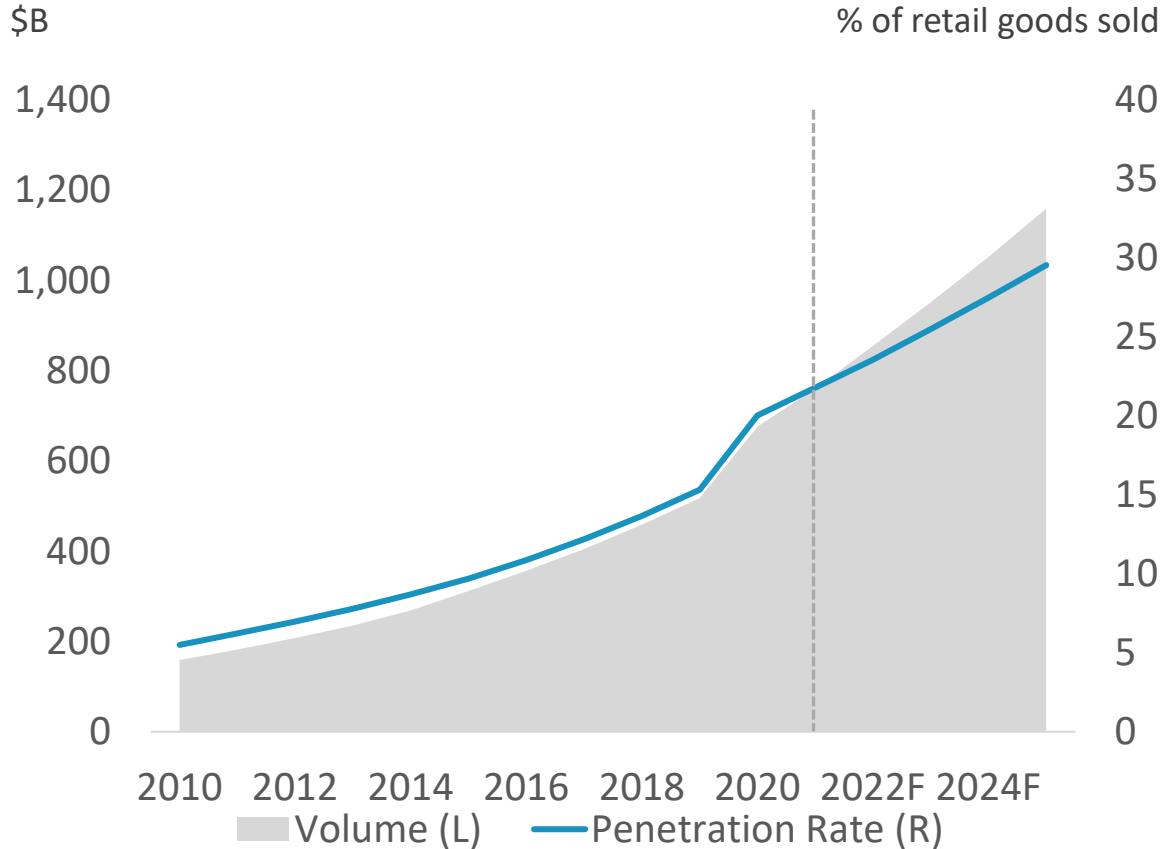
RETAIL GOODS SALES, U.S.



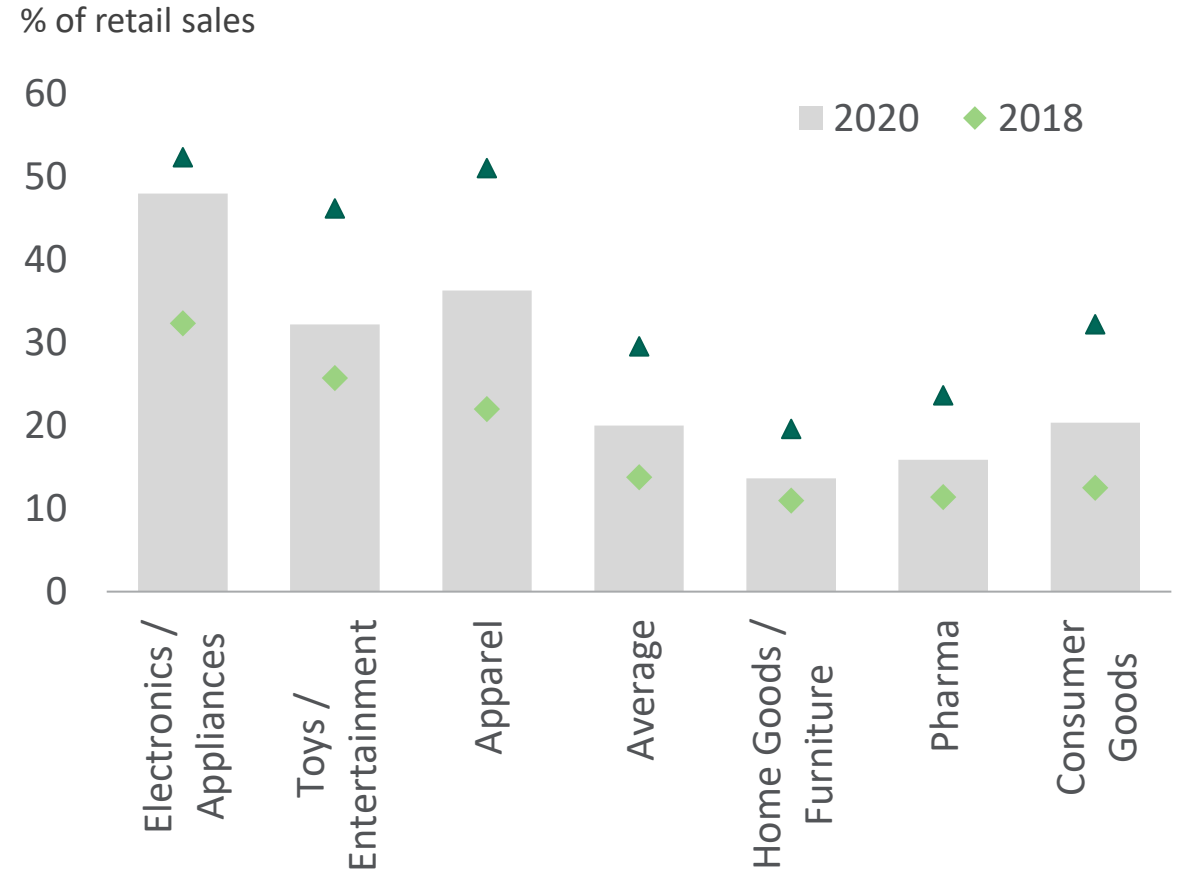
1. Sources: WorldBank, Consensus Economics, FRED

E-commerce as essential infrastructure

ONLINE SALES, U.S.




ONLINE SHARE BY CATEGORY, U.S.



1. Source: U.S. Census, Euromonitor, Prologis Research

E-commerce adding to need for space

E-COMMERCE SUPPLY CHAIN EFFICIENCY

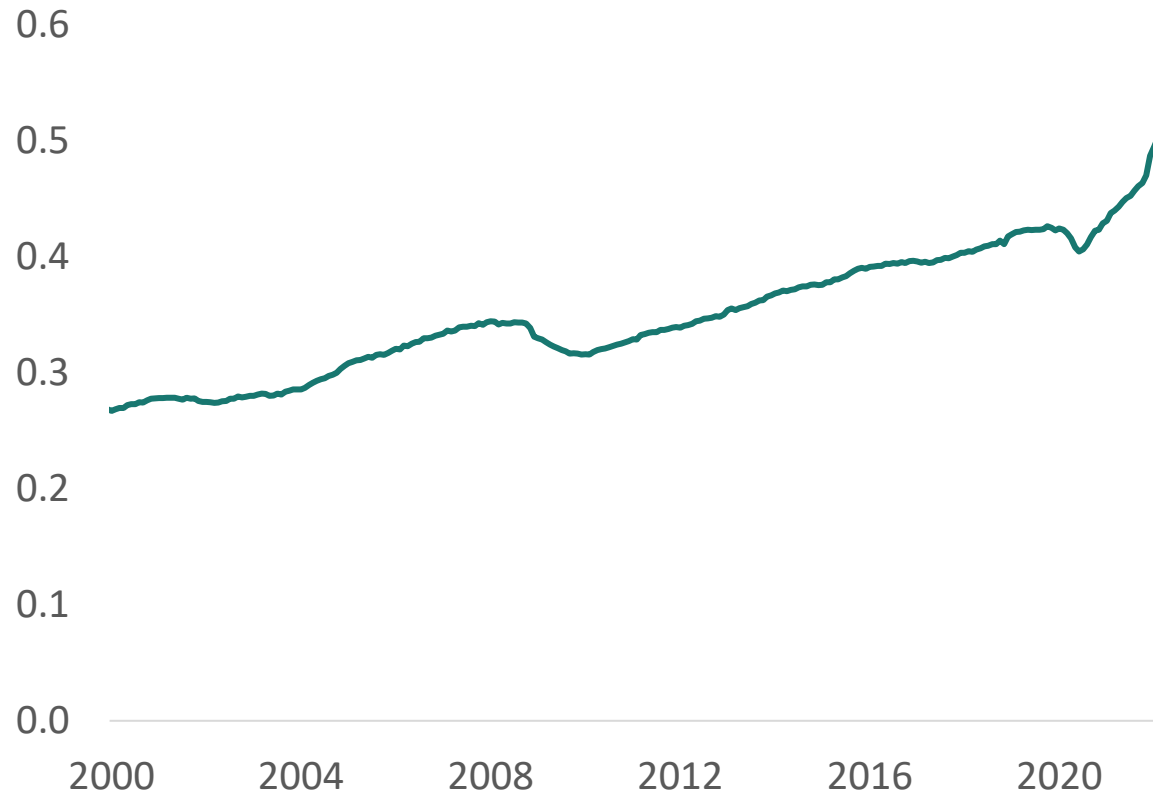
	SALES (US\$, B)	SPACE (MSF)	EFFICIENCY (SF / \$1B)
Online	234	265	1,174
			+/- 3x 
Brick-and-Mortar	1,343	449	334K

Source: Internet Retailer, company filings, Prologis Research
 Note: Based on 2019 company 10-K reports

Rising inventory levels

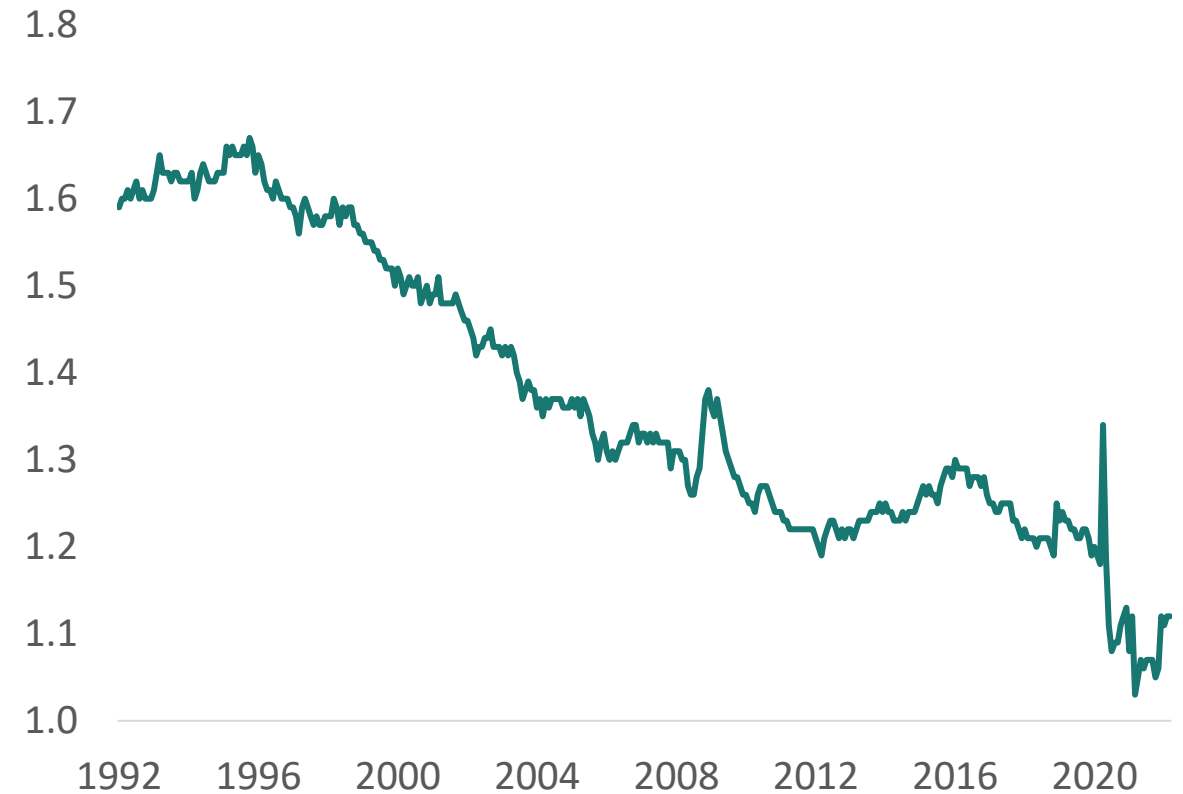
INVENTORIES

\$, Trillions, Retailers excl. auto



INVENTORY TO SALES RATIO, U.S.

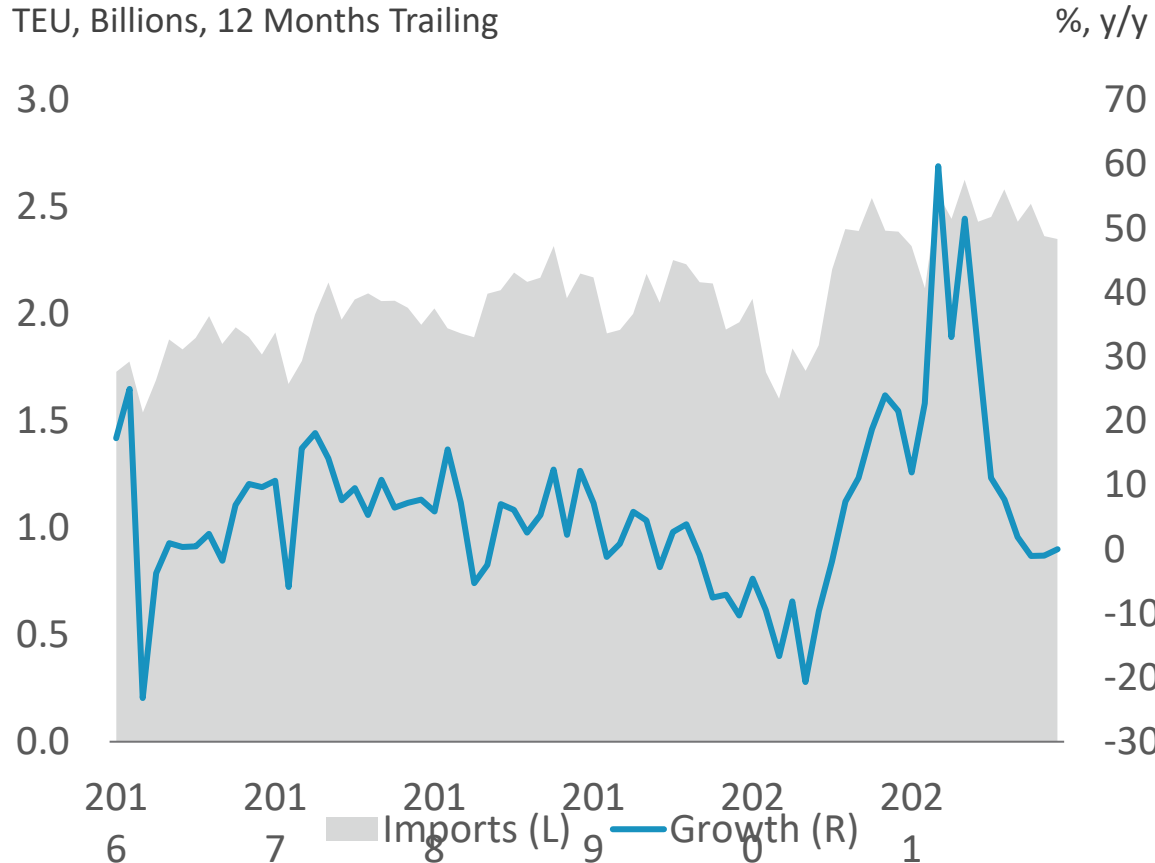
Ratio, Retailers excl. auto



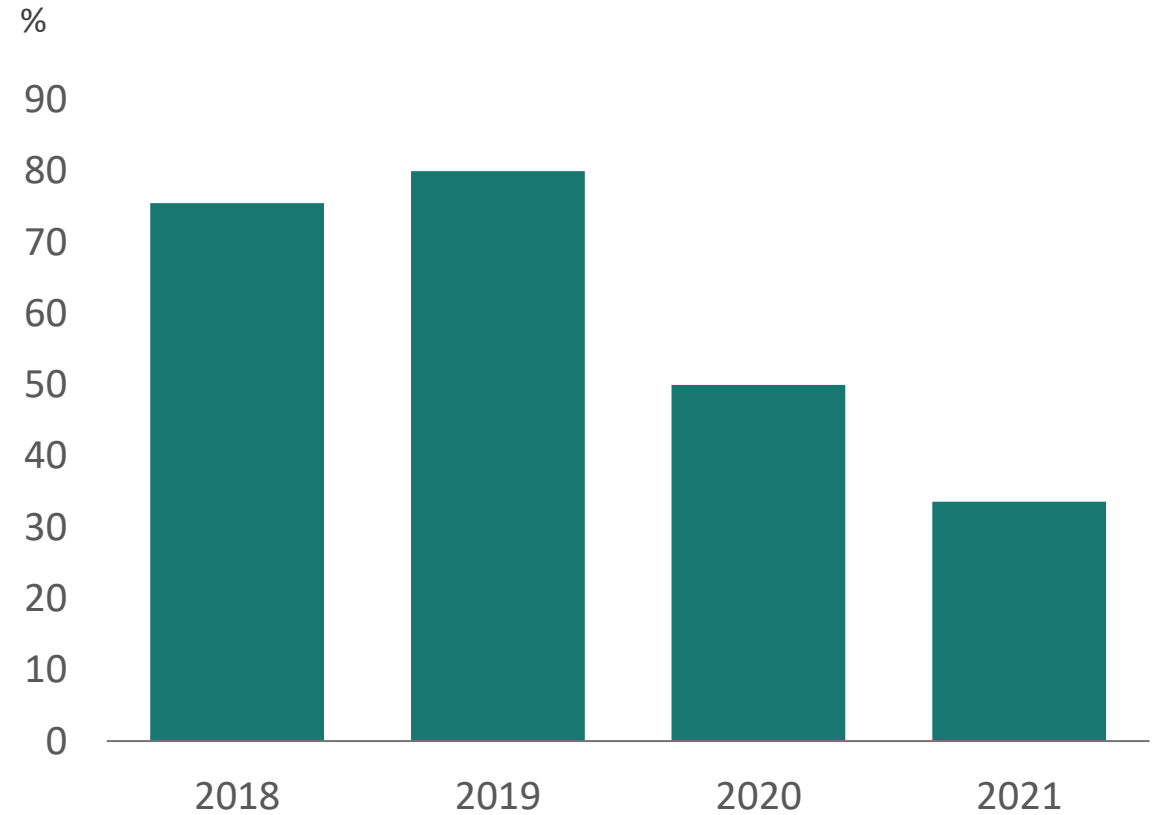
1. Sources: FRED, U.S. Census

Shipping dislocated

CONTAINER TEU VOLUMES, U.S. PORTS ¹



GLOBAL SCHEDULE RELIABILITY (NOVEMBER) ²



1. Sources: Port Volumes (variety of sources), Prologis Research

2. Source: Sea-Intelligence, GLP report issue 124

Surging activity in U.S. warehouses

PROLOGIS IBI ACTIVITY INDEX

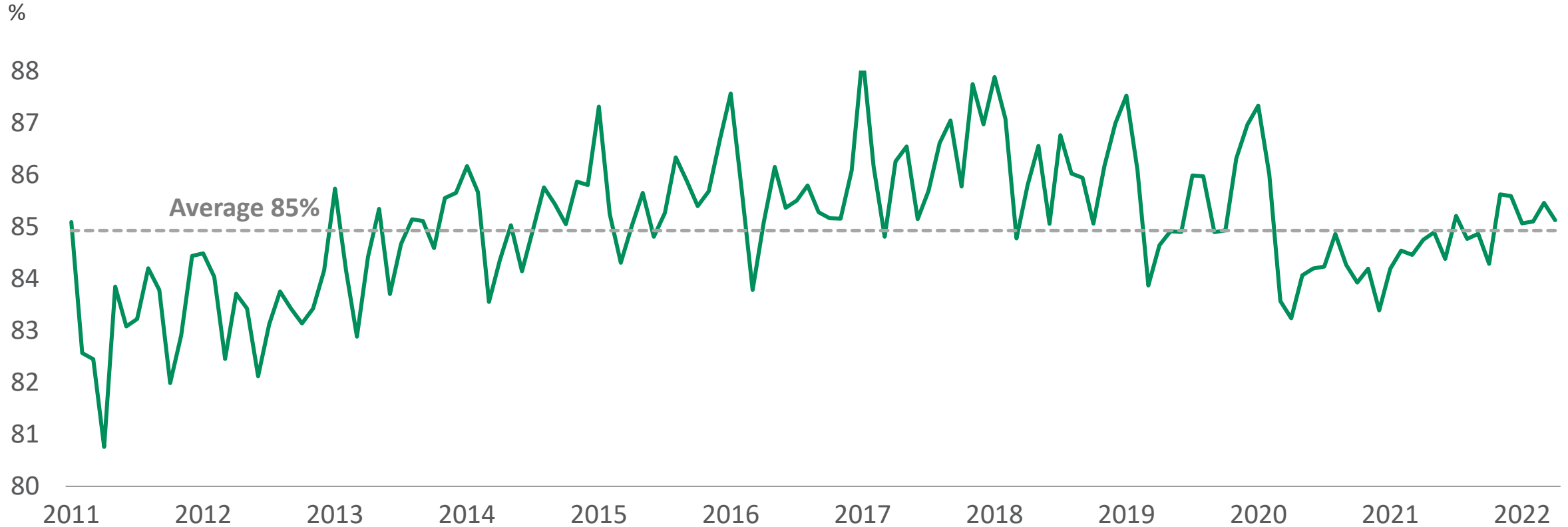
50=neutral, 3-month moving average, SA



Utilization rate slowly increasing

Above-average reading suggests little “shadow space”

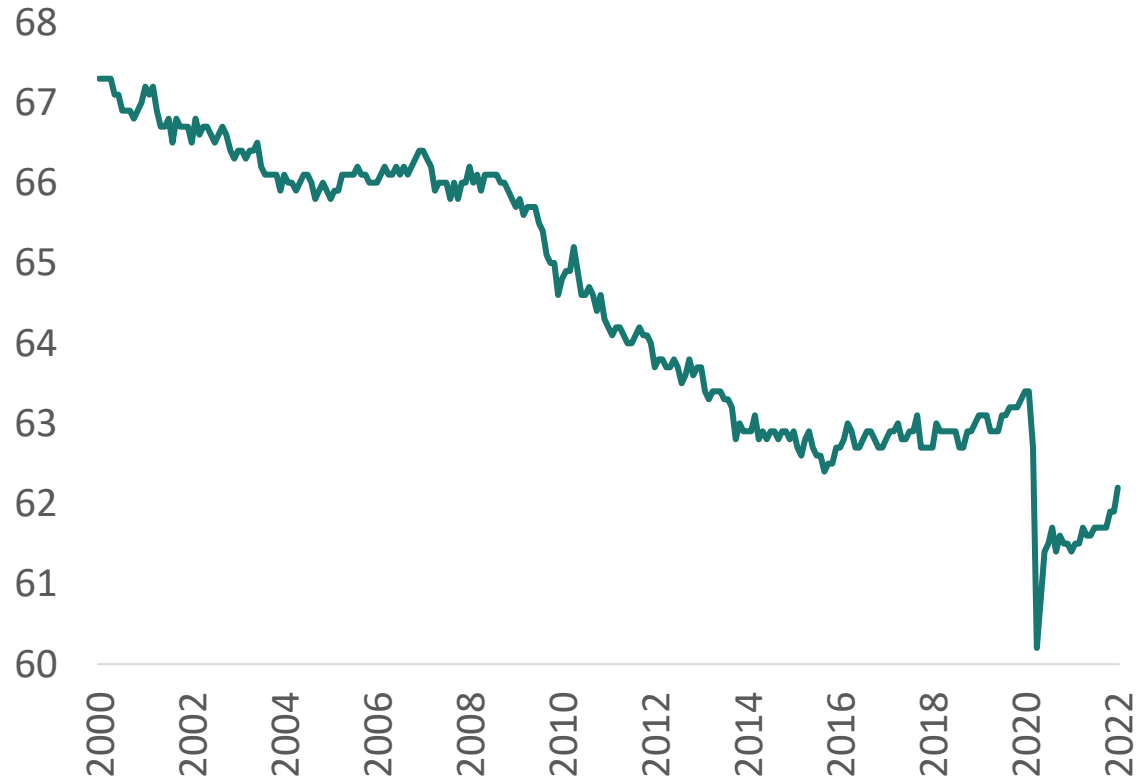
PROLOGIS IBI UTILIZATION RATE



Extreme Labor Scarcity

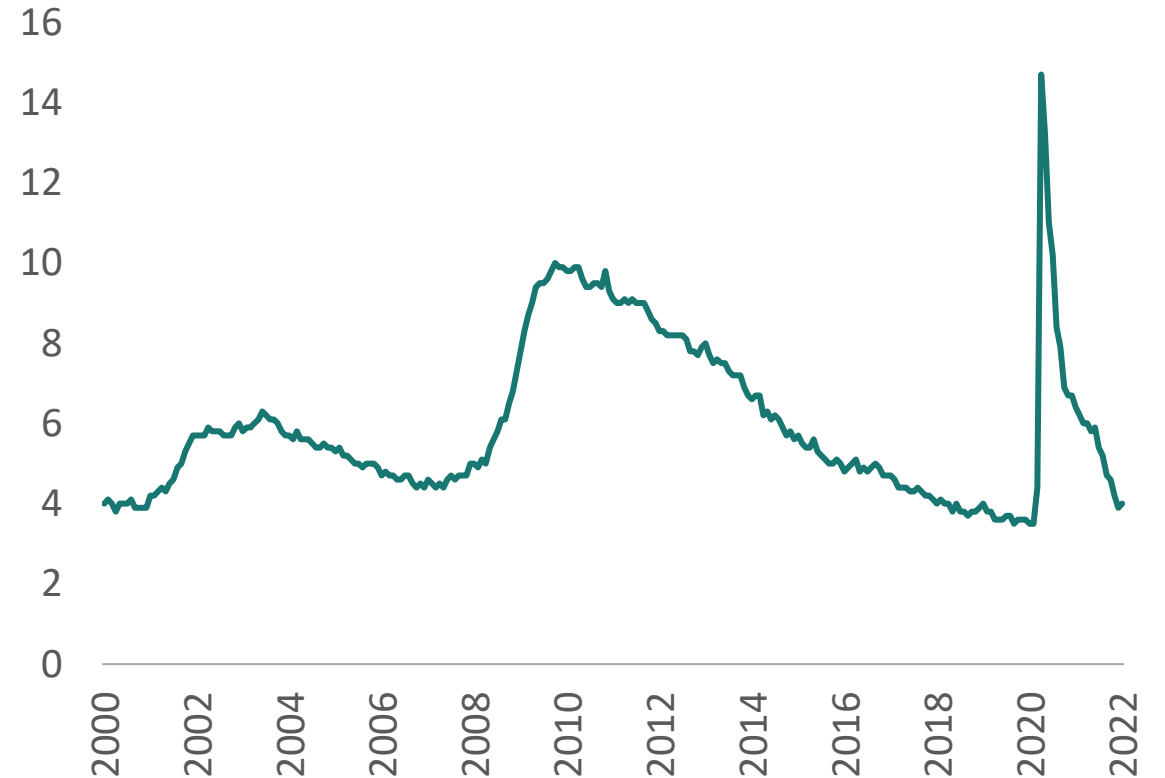
LABOR FORCE PARTICIPATION RATE

%, Monthly, SA



UNEMPLOYMENT RATE

%, Monthly, SA



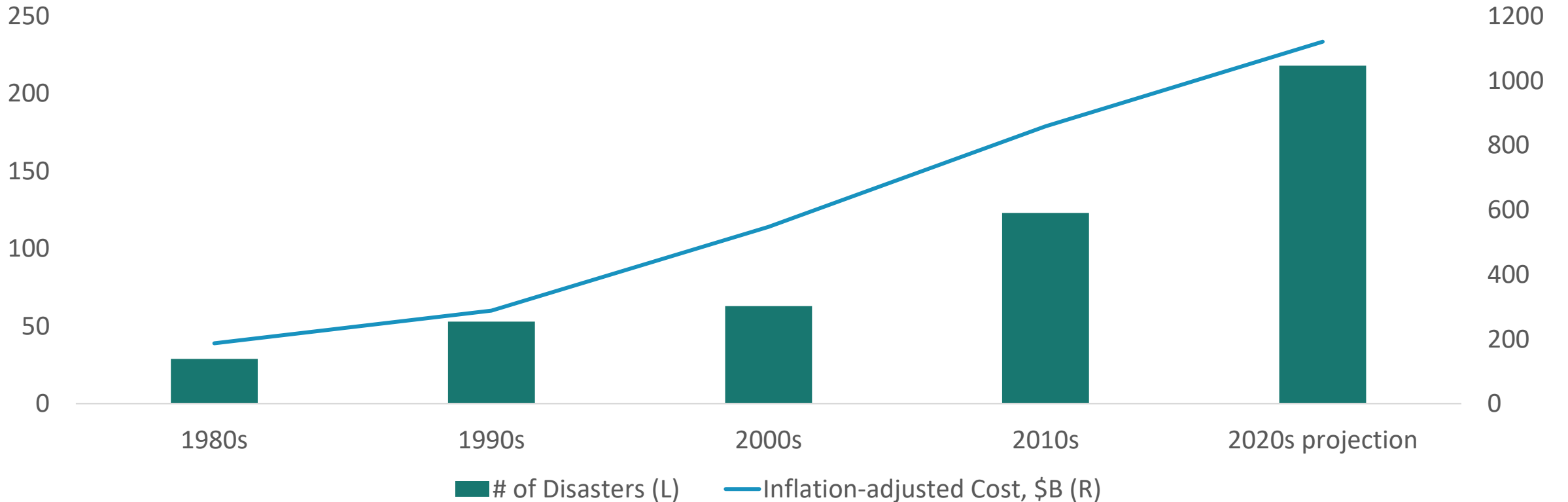
Persistent disruption

Climate-related disruptions growing bigger, more frequent

MAJOR WEATHER DISASTERS BY DECADE, U.S.

(# of disasters with >\$1B damage, inflation-adjusted 2021 dollars)

(estimated total damage, \$B)

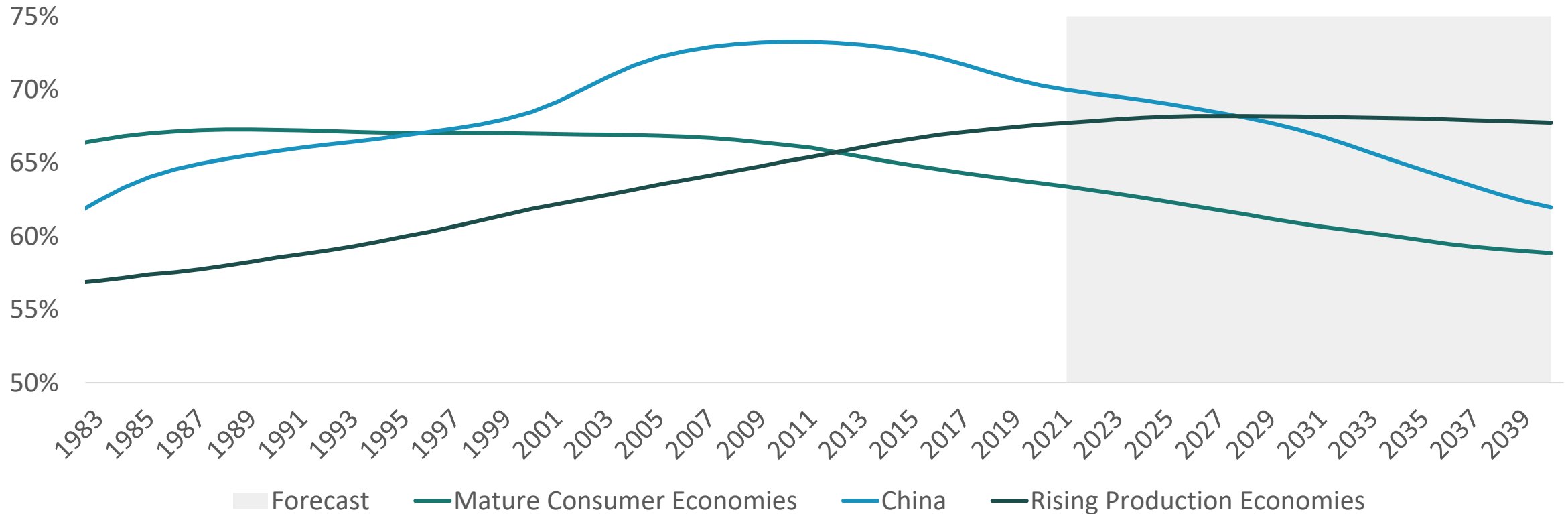


Note: 2021 projection straight-lined based on decade to-date data as of September 2021

Source: NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2021). <https://www.ncdc.noaa.gov/billions/>, DOI: 10.25921/stkw-7w73, Prologis Research

Labor scarcity a long-term trend

RATIO, LABOR FORCE TO POPULATION

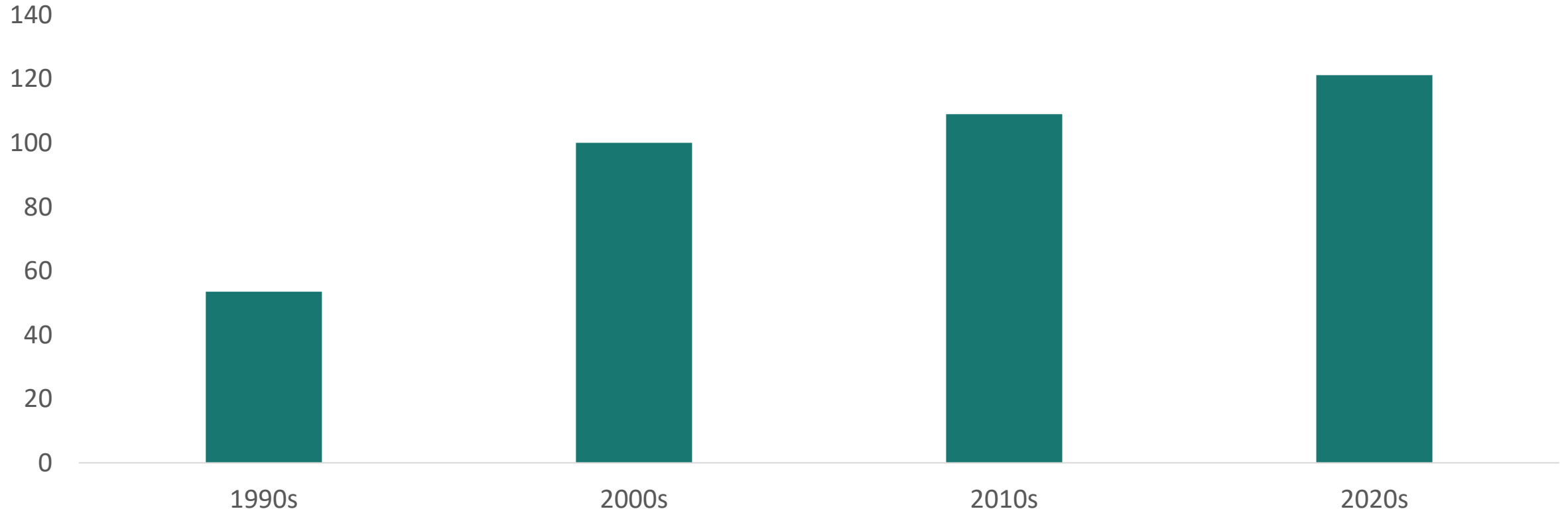


Note: Mature Consumer Economies includes U.S., Eurozone, and Japan; Rising Production Economies includes Mexico, Brazil, Vietnam, Indonesia and India
 Source: Oxford Economics, Prologis Research

Geopolitical risk climbing

GEOPOLITICAL RISK INDEX BY DECADE

(Average from 2000-2009=100)

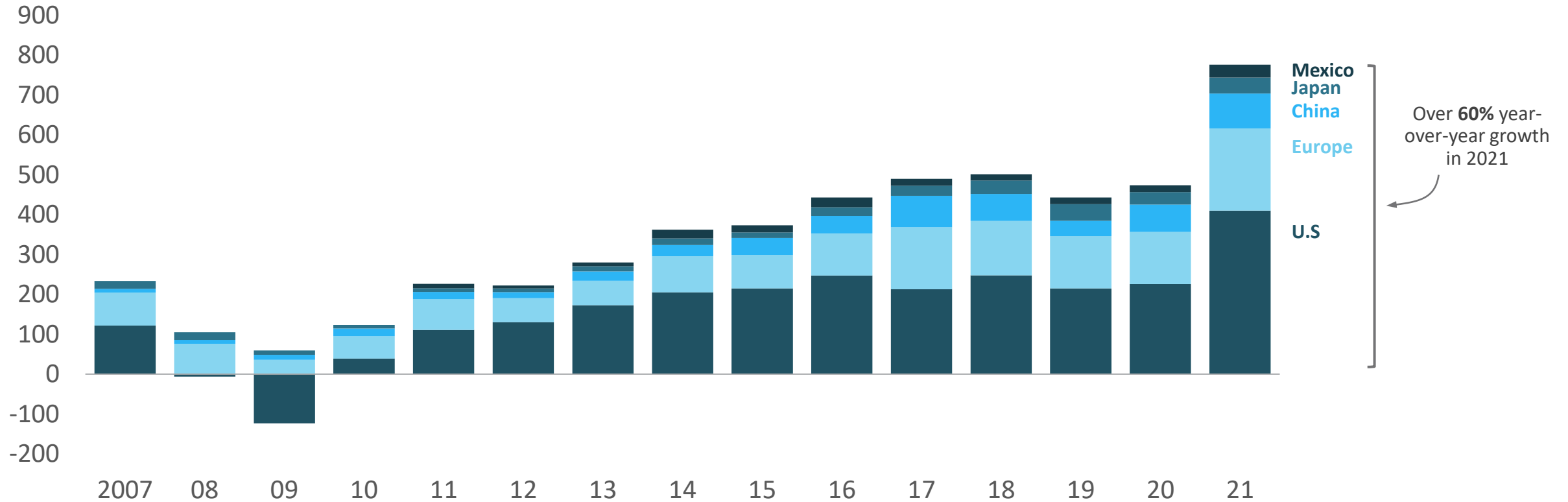


Challenges and the space shortage

Record demand for logistics space

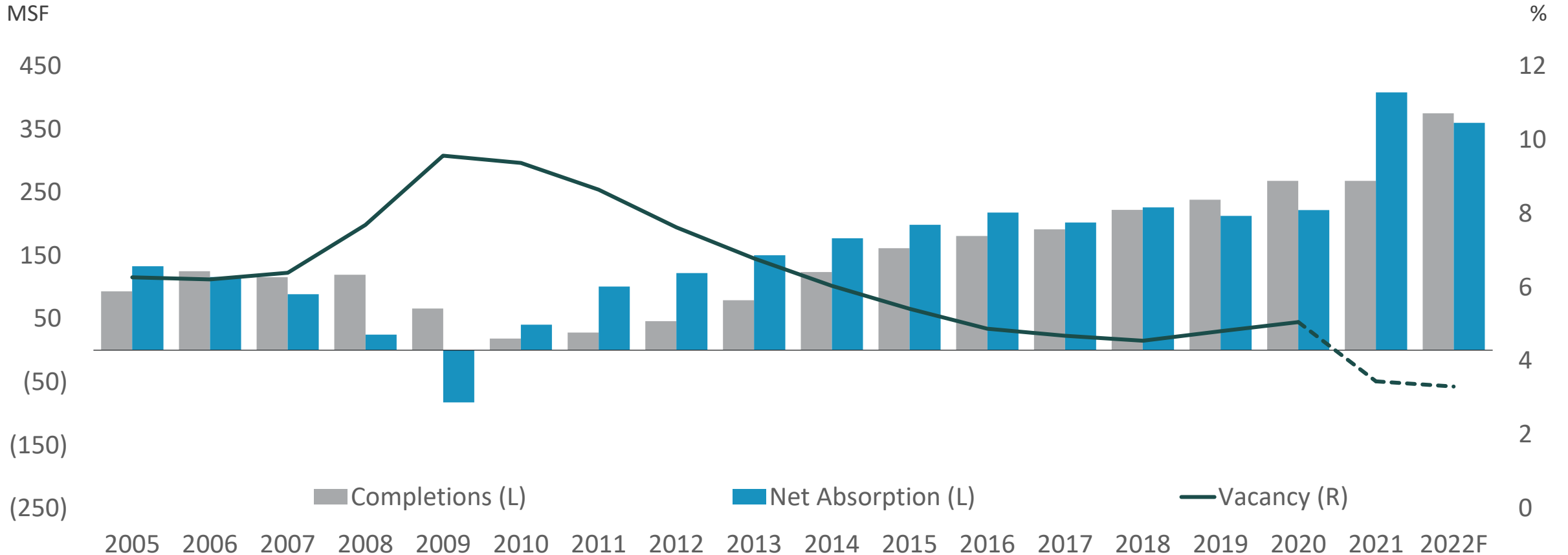
NET ABSORPTION, GLOBAL

MSF



Record-setting scarcity of space

MARKET FUNDAMENTALS, U.S.

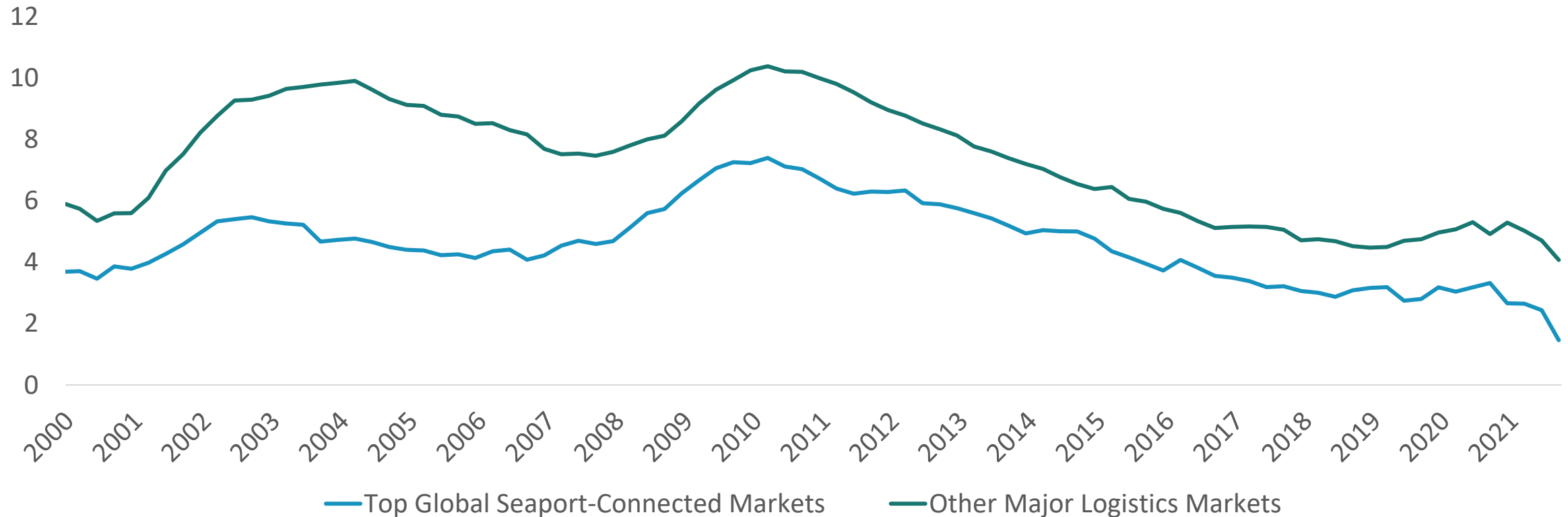


1. Source: CBRE, CBRE-EA, Colliers, JLL, Cushman and Wakefield, Prologis Research (forecast)

Shortage even more extreme in major trade gateways

LOGISTICS VACANCY RATE BY CONNECTION TO MAJOR SEAPORT, GLOBAL

(%)



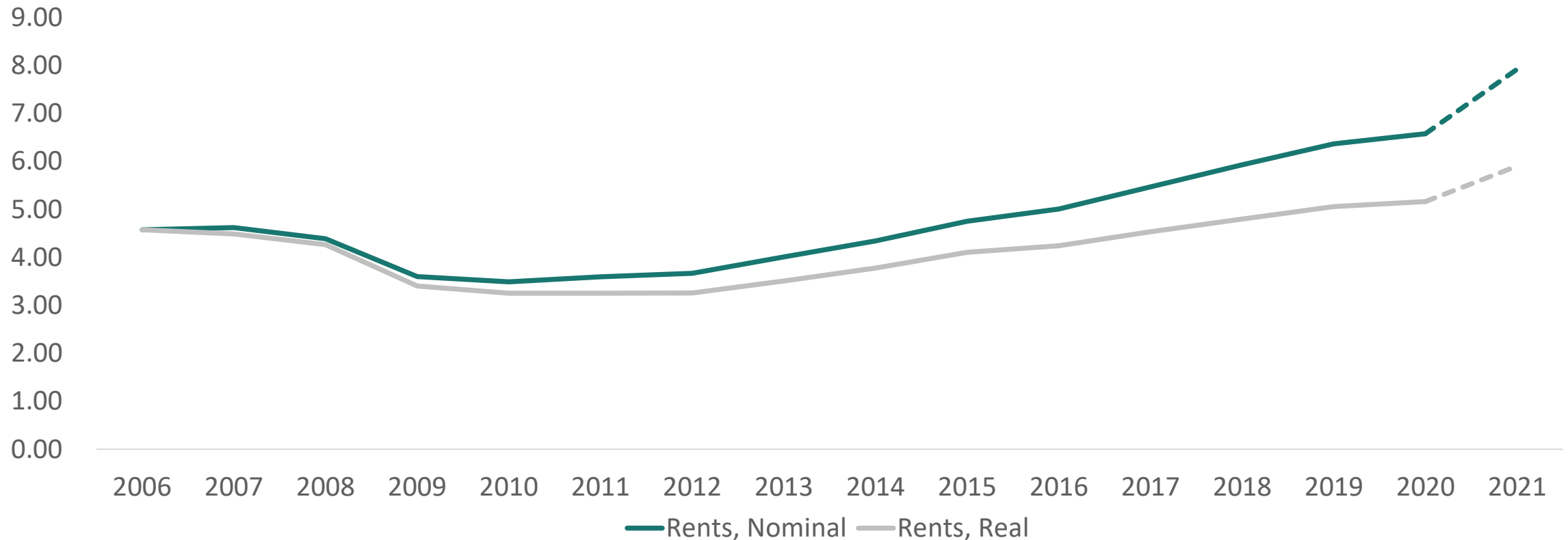
Note: Includes top global ports of Shanghai, Tianjin, Guangzhou, Tokyo, SoCal, greater New York City, Rotterdam/Southern Netherlands, Hamburg

Source: CBRE, JLL, Gerald Eve, Prologis Research

Rents rising in response

MARKET RENT, U.S.

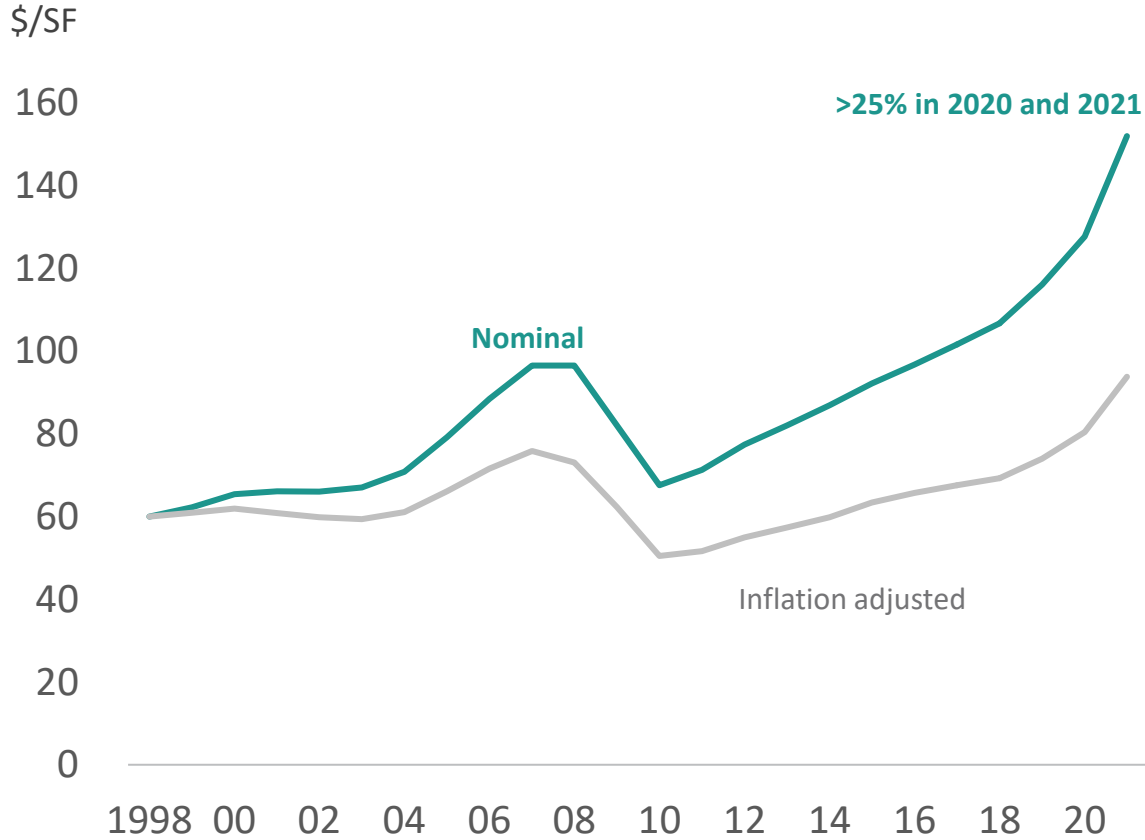
\$, net effective rent



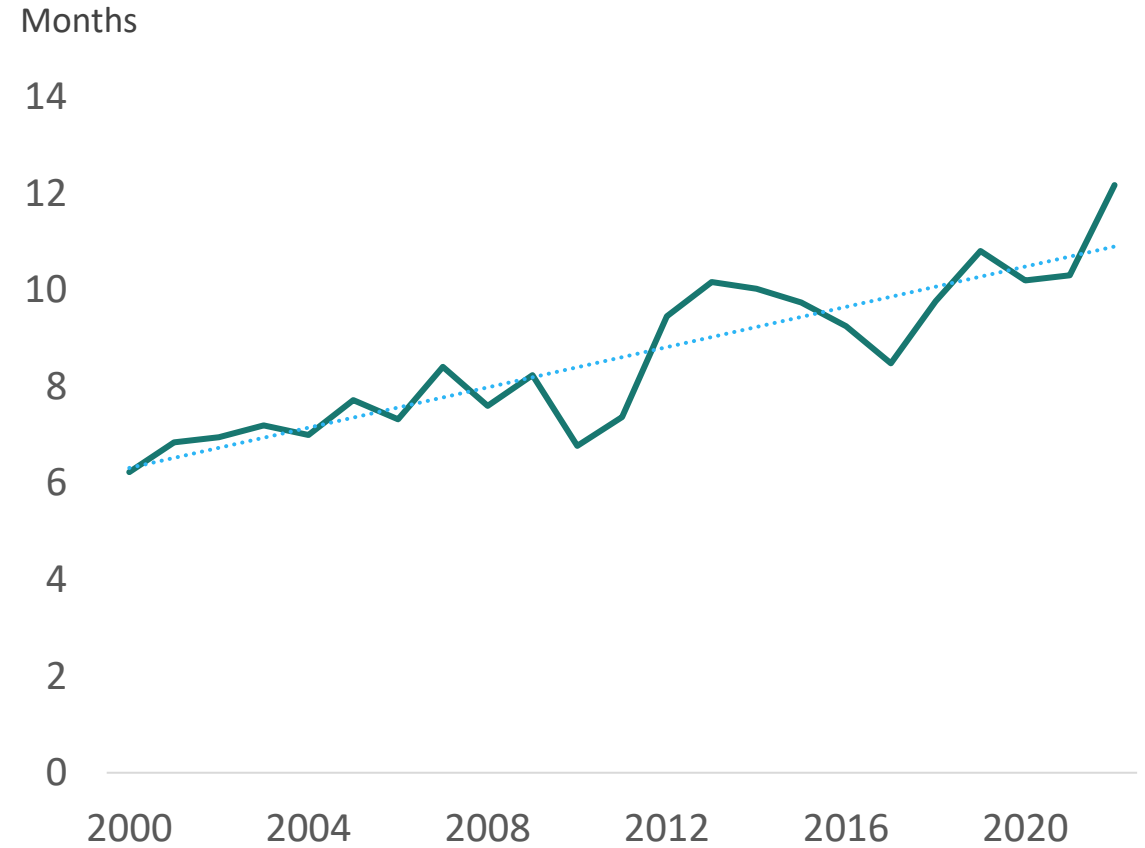
1. Source: Prologis Research

Build costs growing quickly

REPLACEMENT COST, U.S.^{1,2}



CONSTRUCTION TIME, U.S.³



1. Source: Prologis Research estimates based upon Turner Construction, Engineering News Record, Prologis Research
 2. Note: Inflation-adjusted is in 1998 dollars
 3. Time between ground-breaking and delivery

Doubling of Replacement Costs

Inland Empire

Dallas

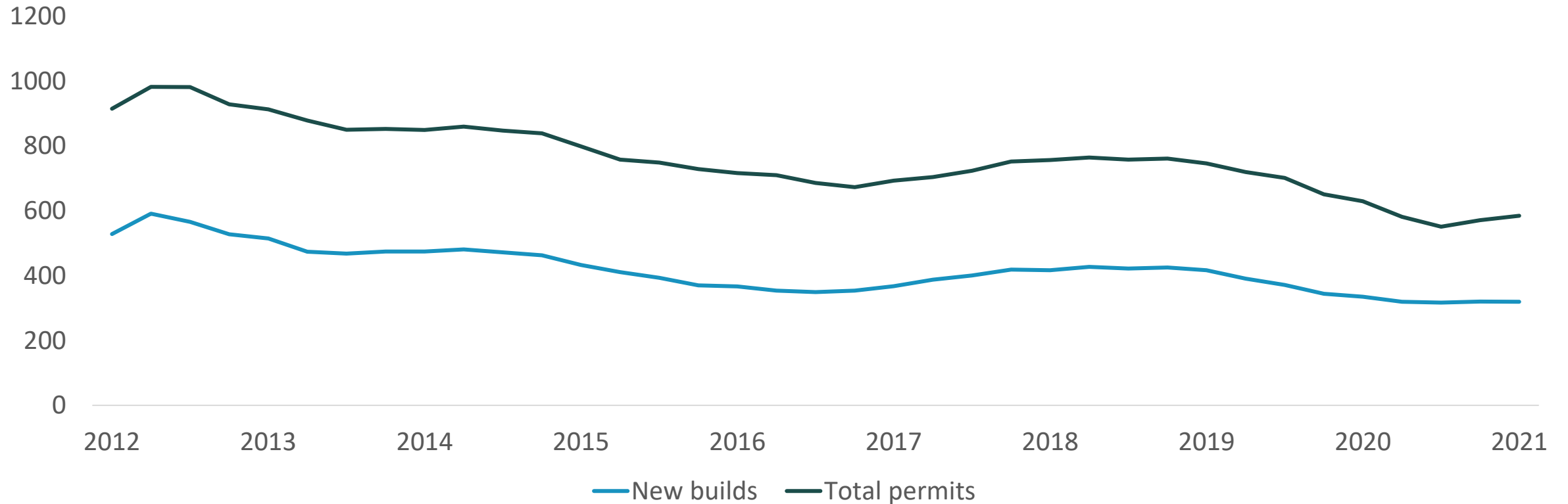
<u>2020</u>	<u>2022</u>		<u>2020</u>	<u>2022</u>	
\$60	\$205	Land	\$18	\$57	Land
\$50	\$85	Hard Costs	\$55	\$69	Hard Costs
\$11	\$15	Soft Costs	\$7	\$9	Soft Costs
<u>\$20</u>	<u>\$25</u>	<u>Finance + Leasing</u>	<u>\$9</u>	<u>\$11</u>	<u>Finance + Leasing</u>
\$141	\$330	Total	\$89	\$146	Total



Fewer permits issued for logistics around the world

LOGISTICS BUILDING PERMITS IN THE NETHERLANDS

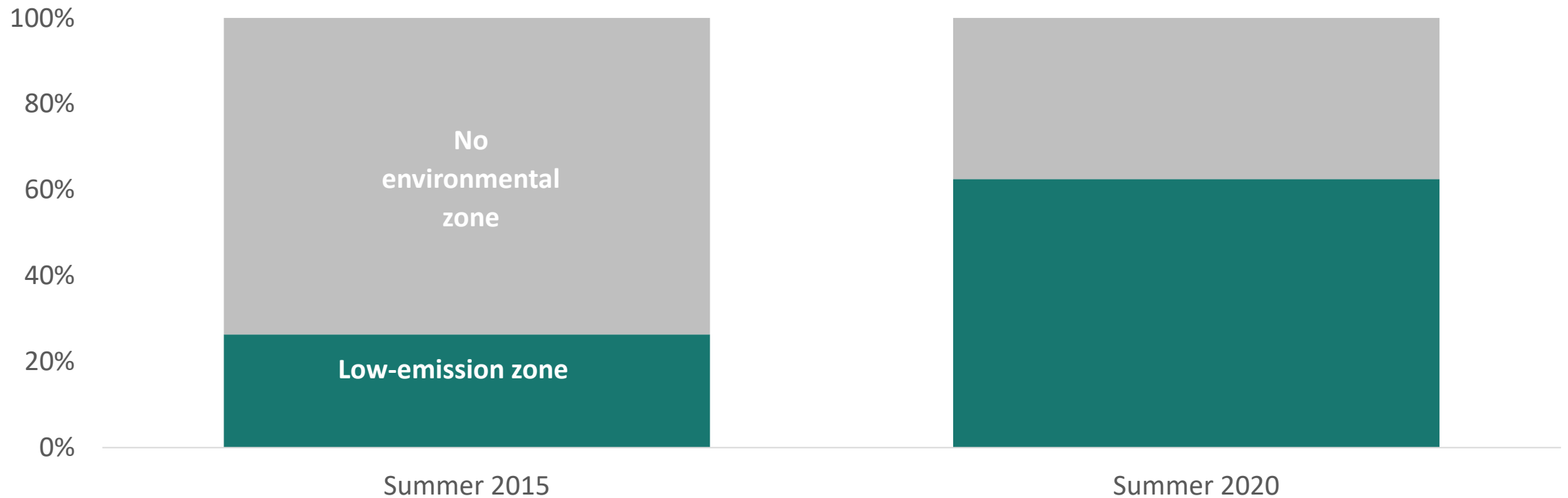
Count



Environmental regulations add to operational complexity

ENVIRONMENTAL TRAFFIC ZONES IN SELECT EUROPEAN MARKETS

% access to city center for low-emission vehicles only



Note: Includes all Prologis EU markets

Source: European Commission, Urban Access Regulations, Prologis Research

The value of place and the future of logistics real estate

Tracking e-commerce growth

Higher online revenues, new product categories will drive growth in #3-5



5 MODELS	URGENCY	REFERENCE
1. Centralized e-fulfilment Leverages other networks	Low High 	 H&M
2. Bi-coastal Spaced-out multi-market distribution		 Blue Apron
3. Key markets – National Local presence, ability to serve region		 Wayfair
4. Omni-channel positioning Strategies 1-3 plus fulfilment from store		 Home Depot
5. Built-out local network Localized e-fulfilment presence		 Amazon

Tracking e-commerce growth

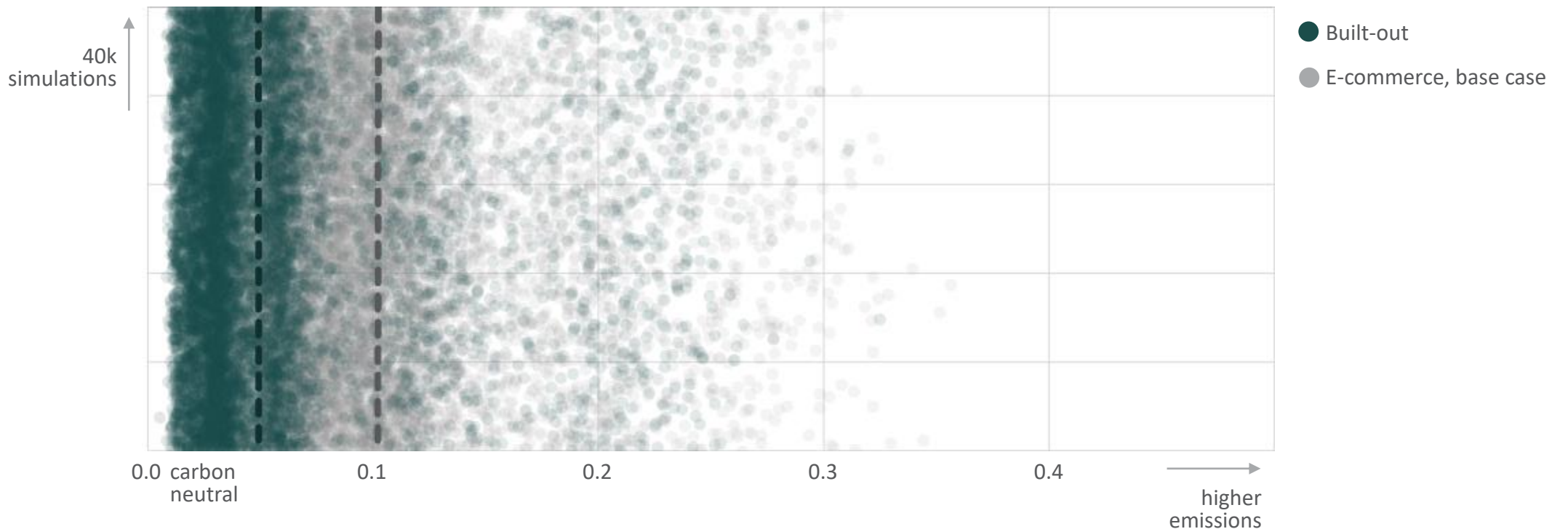
Higher online revenues, new product categories will drive growth in #3-5



5 MODELS	URGENCY	REFERENCE
1. Centralized e-fulfilment Leverages other networks	Low High 	 H&M
2. Bi-coastal Spaced-out multi-market distribution		 John Lewis
3. Key markets – National Local presence, ability to serve region		 Tesco
4. Omni-channel positioning Strategies 1-3 plus fulfilment from store		 Amazon
5. Built-out local network Localized e-fulfilment presence		 Amazon

Logistics networks, including urban fulfillment centers, can reduce transportation-related emissions by **50%**

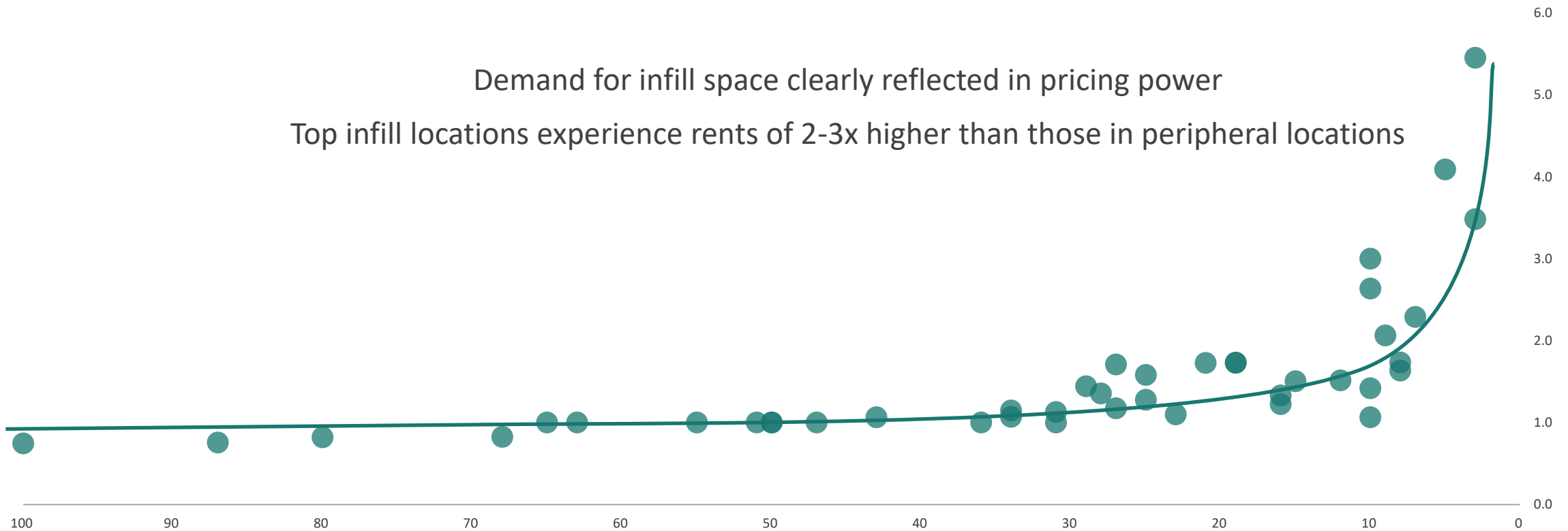
TRANSPORT-ONLY EMISSIONS, LOGISTICS NETWORKS INCLUDING URBAN FULFILLMENT CENTERS VS. E-COMMERCE, BASE CASE
kgCO₂ / item



Increasing value of infill locations

RENTAL RATE PREMIUM, INTRA-CITY DIFFERENCES

distance to city center (horizontal axis) vs. Rental rates indexed to 50 miles from city center (vertical axis)

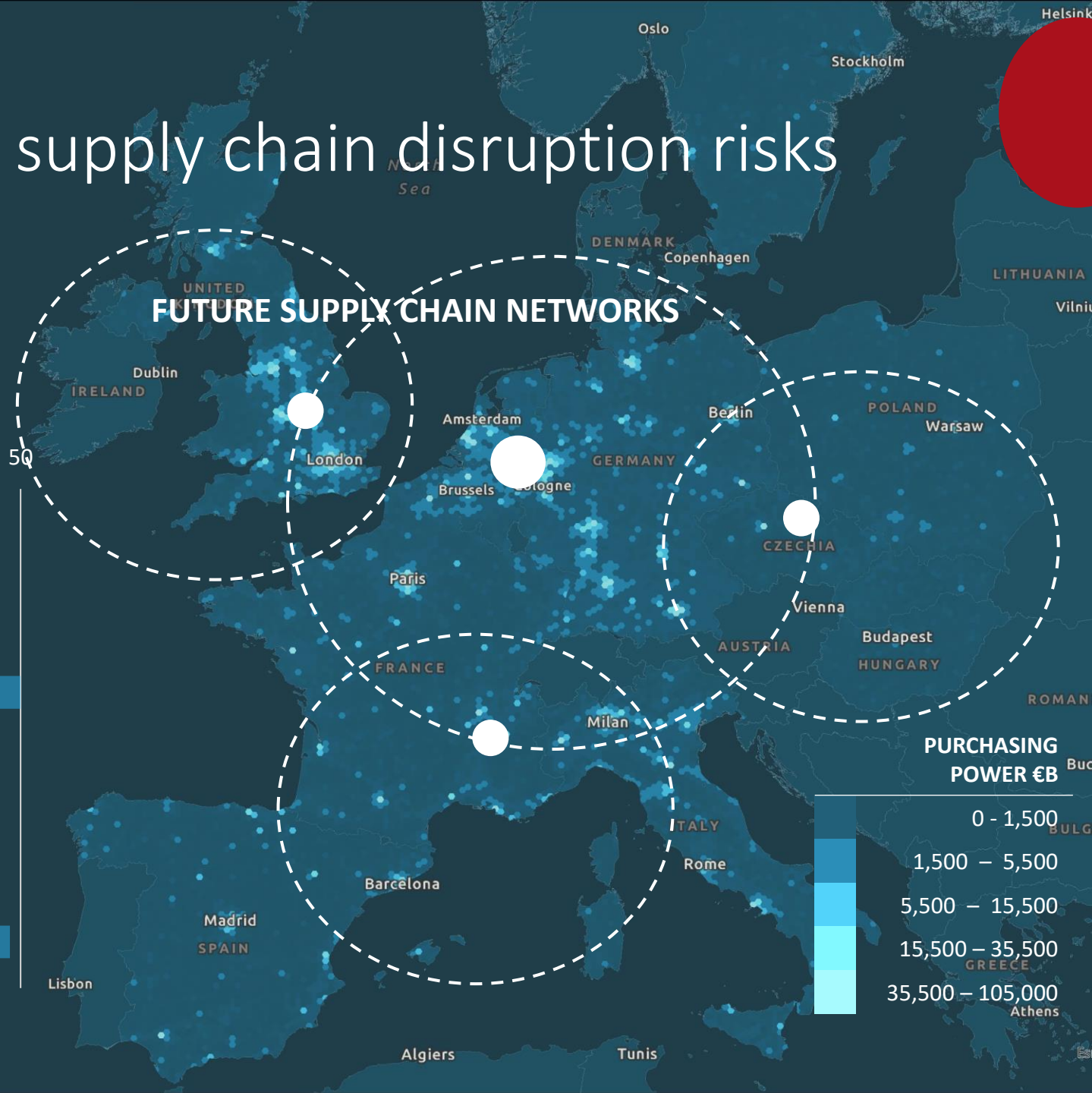
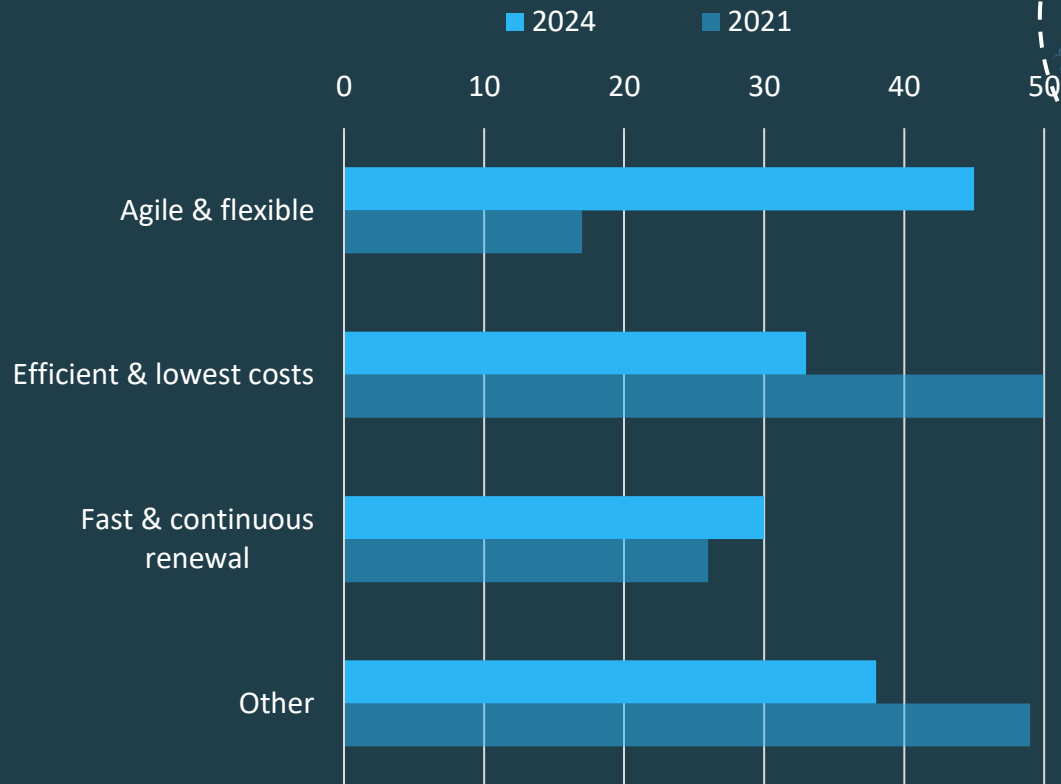


Source: Prologis Research

Note: Prologis' infill premium is defined as the market rental rate in the given submarket divided by the median market rental rate for the entire market. Includes the market rents at the submarket level of seven major consumption markets as of Q1 2020

Segmented footprint limits supply chain disruption risks and decentralization

SUPPLY CHAIN STRATEGIES¹



1. BCI Global, Prologis Research

Key sustainable building design features

Low-emission, energy-efficient HVAC

Reduces output when building is unoccupied.

Cool roofs

Reflect sunlight and repel heat, lowering indoor air temperature.

High-efficiency roofing and wall materials

Optimize interior temperatures.

20-30% regionally sourced building materials

Reduce transportation emissions and boost local economies.
Use of bio based, circular building materials.

Skylights \$

Reduce daytime electricity use.

Real-time energy monitoring

Informs employees and create awareness.

Solar panels \$

Turns rooftops into sources of clean energy.

LED lighting with dynamic controls \$

Improves illumination and reduces energy costs.

Energy-saving mode of dock equipment \$

Preserves energy when not in use.

Dock levers with gap sealing and dock shelters with bottom cushion

Seals interior to the elements.

Alternative transportation options

Public transport, shuttles, bicycle rental and car sharing.

Drought-tolerant plants and rainwater collection

Decrease water usage, reproduce local ecosystems and support biodiversity with insect hotels, bird houses, edible trees and greenery.

Secured bicycle shed with E-bike charging

Carpool/car-sharing dedicated parking spots

Electric car (EV) charging stations and dedicated car sharing parking spots

Reduce emissions for daily commuters.

Exterior LED lighting

Reduces light pollution and energy costs.

Smart energy meters

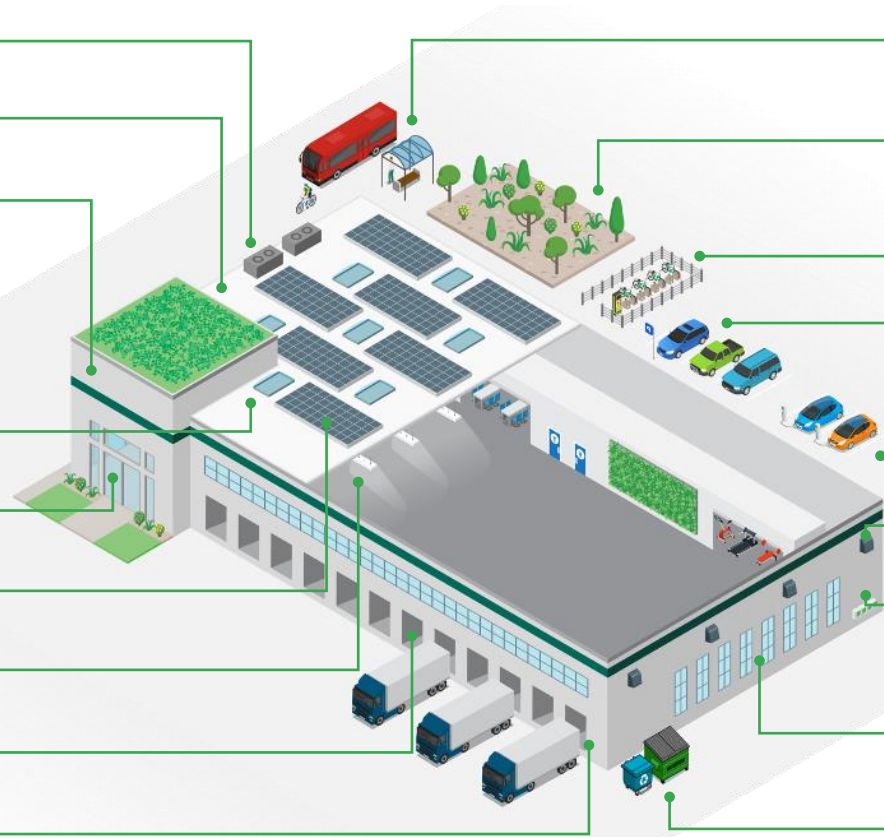
Monitors real-time energy use and reduces energy expenditures.

Low-emitting paint, sealants and insulation

Lowers environmental impact in comparison to conventional paint products.

Areas for storage and collection of recyclables

Minimize environmental impact.



\$ = Direct occupational cost savings



BUILDING CERTIFICATIONS
Demonstrate that we build to the top sustainability standards

PROJECT MANAGEMENT CERTIFIED
ISO 14001

Wrap-up

Unique opportunity to collaborate on solutions among a broad group of stakeholders

We are at a pivotal moment for supply chains.

Actions taken today will make supply chains more resilient in the face of persistent disruption.

Challenges to development have led to a space shortage, particularly in the largest consumption centers and global freight gateways.

Tomorrow's supply chains will need to be more decentralized, closer to consumers and labor, more flexible and more sustainable.

Therefore, the future of logistics real estate is urban.

And the time has never been better to leverage data, technology, and development economics to seek solutions that can benefit all who rely on supply chains to facilitate modern life.



PROLOGIS[®]