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Supply change

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Editor's letter

Logistics evolves to feed our habits



Wanching Leong

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Psychology researcher Phillippa Lally of UCL found that it takes a mere 66 days to form a habit. We have had a whole pandemic to become habituated to e-commerce, and the expectation that our purchases will be delivered to our doorsteps by the next day, the same day – and even within hours.

To meet these consumer needs, the supply chain is changing to accommodate more inventory, and logistics facilities throughout the supply chain, from warehouses to distribution facilities and fulfillment centers, are in great demand. With land a finite resource, competition is fierce for assets, particularly in dense urban areas with the greatest concentration of consumers and wealth. New, modern builds are increasingly made with net-zero or carbon-neutral targets in mind, as the sector grapples with its responsibility to fight climate change, while older properties can be repositioned.

“ We expect purchases to be delivered the next day, the same day - even within hours ”

The ongoing health emergency has also created a greater need for healthcare-related fulfillment. As we waited with bated breath for vaccines, we could not get enough of masks, hand sanitizers, test kits and PPE. In Asia-Pacific, the popularity of logistics has also spurred more demand for the growth of ancillary strategies, such as life sciences and data centers that now undergird the ‘new economy’ in the region.

We are buying, working and socializing more online. None of these trends are new, but the pandemic has vastly accelerated them. The logistics sector, in providing the infrastructure to enable this new normal and the circulation of goods and data, is changing accordingly in ways described in this report.

Enjoy the read,

Wanching Leong

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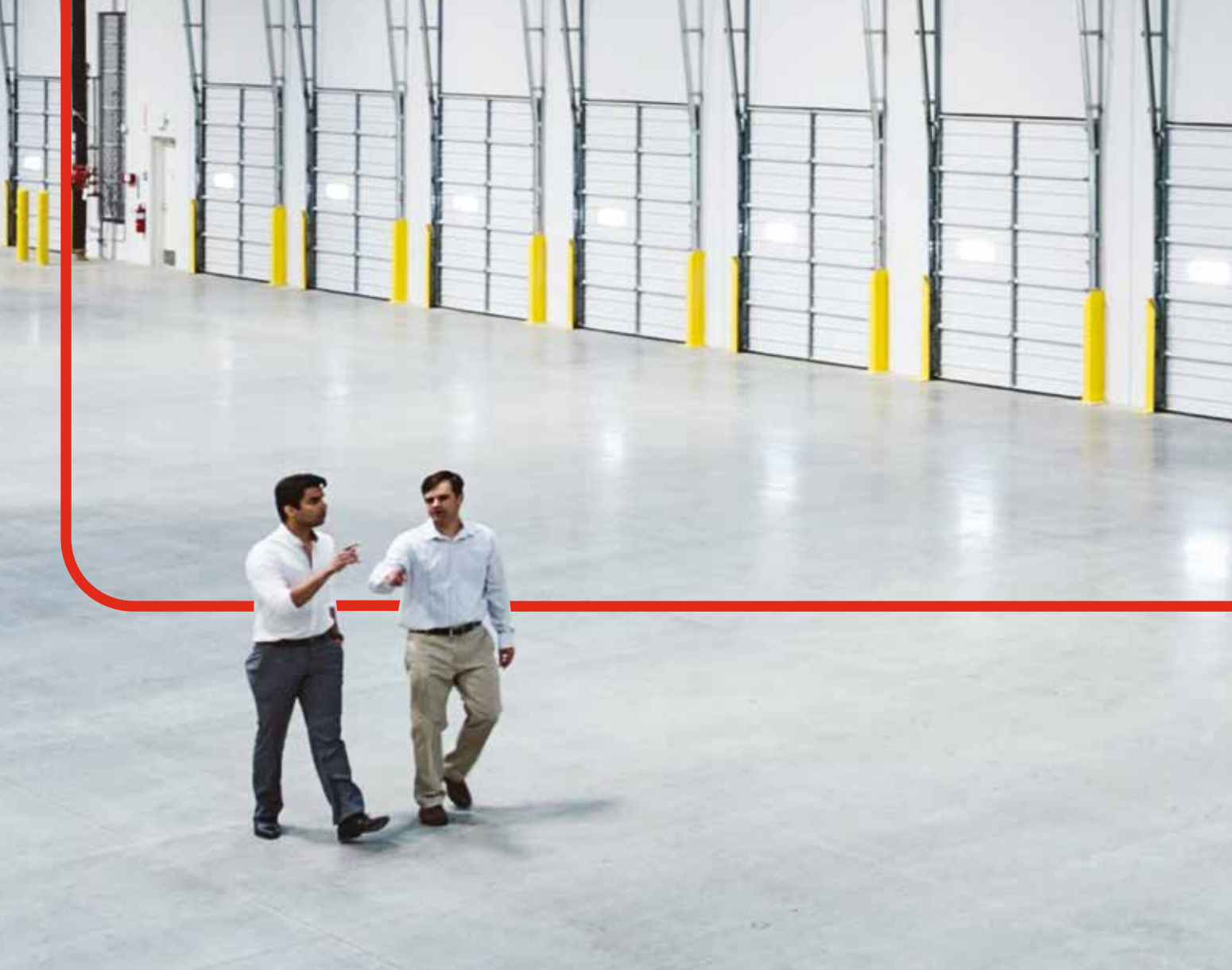
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Insight



The big picture How is the logistics space faring and what does the future look like?

As we enter the third year of the covid-19 pandemic, the demand for logistics space is greater than ever, **writes Evie Rusman**. According to JLL's 2021 survey, *The Future of Global Logistics Real Estate*, 74 percent of respondents expect demand for logistics space to grow over the next three years, even when considering recent elevated levels.

The ascent has largely been driven by a rise in e-commerce, which increased significantly throughout the pandemic as people across the world were forced to stay inside. Strong growth for warehouses and distribution facilities is also

forecasted. As a result, investors are realizing the significance of logistics now more than ever, with many prioritizing this sector going forward. In 2021, logistics accounted for 18.1 percent of all real estate funds raised, almost double the level in 2018. This is a trend that is not slowing.

With logistics on the rise, we highlight the key trends in the sector.

Demand exceeds supply

To keep up with rising consumer demand, developers need to build faster and more efficiently. However, at the moment, this is not proving to be feasible: "Supply [of new industrial assets in Europe] is already at record low levels and, at the moment, we simply cannot build warehouses fast enough," says Kevin

Mofid, head of UK & EMEA logistics research at Savills.

Mofid adds that the increase in demand is causing issues along the supply chain: "For developers, this is a problem because of the cost implications and construction delays; but for logistics investors, this is not a bad thing. It's helping them increase the value of warehouses they own. Meanwhile, occupiers are competing for the best buildings and paying higher rents or committing to a longer lease."

Tenants are desperate for space

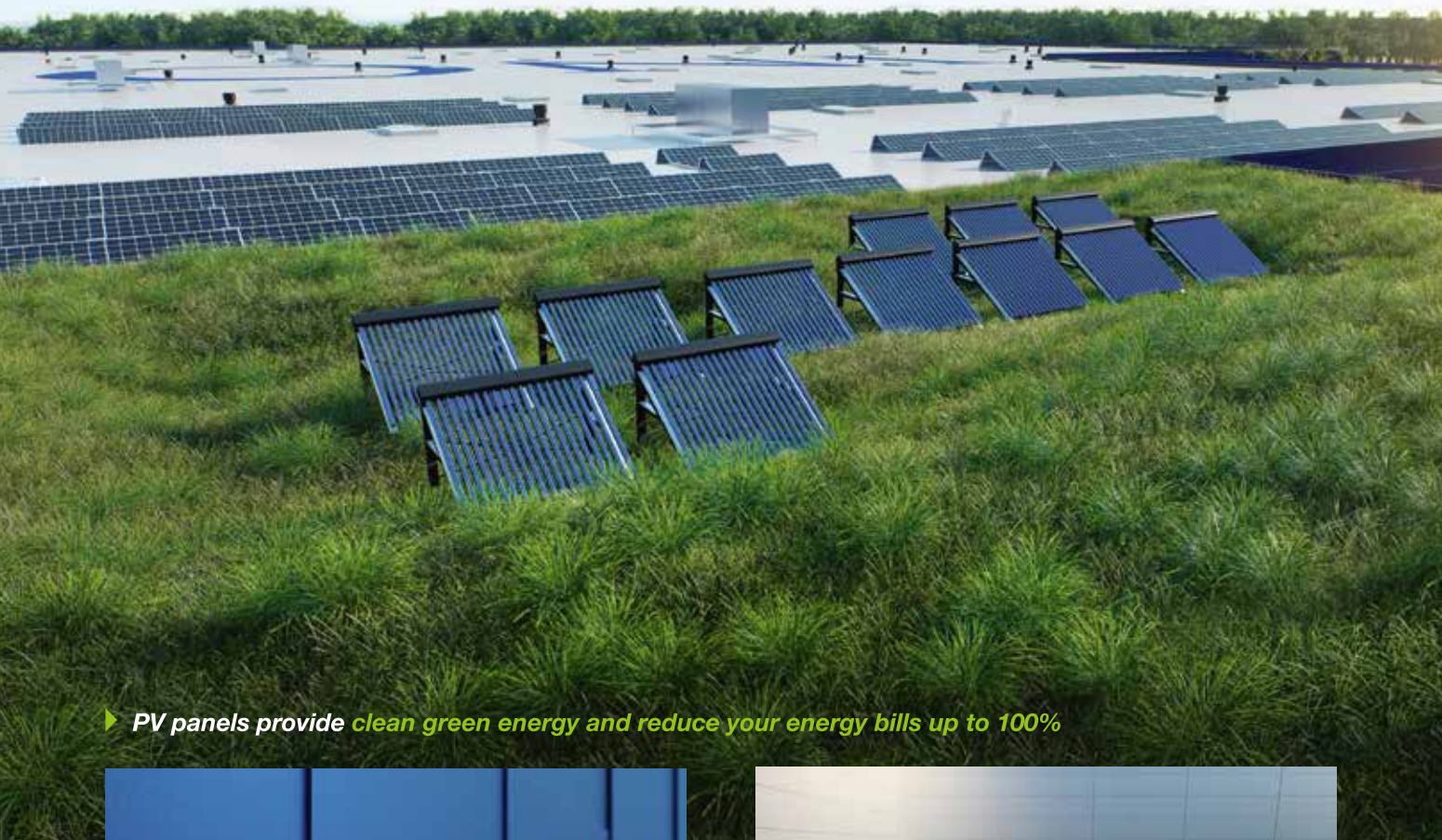
Due to ongoing supply shortages, it is not unusual for tenants to be fighting for the same space. Jason Tolliver, Americas logistics and industrial investor lead at Cushman & Wakefield, says: "There are very few options in the market, so tenants do not have the luxury of taking their time. If you are going out and surveying the market, you are maybe lucky if you have five buildings."

"By the time you set up the tours, you may be down to three, and if you dilly-dally while you tour them, you are probably out of all of those options. It is being prepared and proactive instead of reactive."

Ben Bannatyne, president of Prologis Europe, adds that ease of doing business is a major factor when deciding who gets the space. "You might have two of



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Expert musings on logistics

“We have a saturation of players looking to partake in the industrial arena”

Leslie Lanne, executive managing director
JLL

“Because cities have expanded, they tend to be closer into the urban area of conurbations”

Logan Smith, head of European logistics
Hines

“Occupiers are knocking on our door and saying, ‘Please, we need space’”

Laurie Lagarde, head of EMEA logistics
CBRE Investment Management

“It is a landlord-favorable market the whole world over”

Jason Tolliver, Americas logistics & industrial investor lead
Cushman & Wakefield

“One of the Modi government’s most significant achievements has been to move forward on transport and connectivity and to deliver infrastructure projects”

Rushabh Desai, chief executive, Asia-Pacific
Allianz Real Estate

“Because of lockdowns, there’s been a massive increase in demand for goods, but we have seen labor shortages”

José Pellicer, head of investment strategy,
M&G Real Estate

“Many manufacturers with a European presence are looking to nearshore their supply chain and evaluate selected countries in Eastern Europe”

Adrian Karczewicz, head of divestments CEE, Skanska Commercial Development Europe

your good customers fighting for the same space; it comes down to someone signing first, timing, who is easiest to deal with,” he says.

The right asset is essential

Finding the right asset in the right location is key, whether a new build or repurposing old assets. Leslie Lanne, executive managing director at JLL, says logistics is becoming increasingly saturated, which can make it difficult for newer players: “There are so many new entrants and so much competition.”

She says repositioning is a good way for investors to get in on the action: “Not all of them want to do ground-up development, but everyone can get their arms around a strategy to reposition an existing asset.”

Laurie Lagarde, head of European logistics at CBRE Investment Management, agrees: “They have no choice if they want to buy something in the logistics segment. There is too much capital in the market, and there are fewer off-market deals available because sellers can get better pricing from high competition on the market.”

Asian players are getting bigger

One market in which logistics has really taken off is in Asia – in 2021, fundraising for logistics in Asia-Pacific reached \$4.7 billion, higher than in Europe (\$3.3 billion) and North America (\$2.1 billion).

Alex Tse, managing director at BPEA Real Estate, says: “The lockdowns and social distancing measures expedited the existing shift in consumer behavior and distribution channels, which really accelerated the development of Asia’s logistics market. We don’t expect this transition to slow down after covid-19.”

The players in this market have a desire to scale and position

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AUM

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Logistics and
Cold Chains



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and Modern
Manufacturing Parks



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Redevelopment



Data
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74% A JLL survey revealed that 74% of respondents expect demand for logistics space to grow over the next three years

\$1.4trn India's National Infrastructure Pipeline program is set to invest more than \$1.4 trillion in infrastructure projects by 2024-25

238% In December 2021, the average cost to ship a 40-foot container was 238% higher than the previous year

587m US industrial leasing volume, including renewals, reached a record 587 million square feet through July 2021

themselves for what they call the 'new economy' – life sciences and data centers. Investors are also attracted to APAC because of the region's rapidly growing digital adoption rates.

"We believe institutional investors will continue to be interested in Asia's logistics sector, particularly in South Korea, Australia, Japan and China in 2022," says Steve Kim, head of South Korea at LaSalle Investment Management. "The continued growth of the e-commerce sector correlates with our investment

strategy to both develop and acquire modern logistics facilities in these markets."

ESG is making headway

ESG was one of the biggest talking points for all asset classes throughout 2021, with most developers looking into carbon-neutral or net-zero strategies. There is a huge opportunity for logistics to make a change, considering the sector does not have the best track record when it comes to environmental impact.

Repurposing buildings is one way investors can improve their carbon footprints: "If we are buying to continue to use a building, we really do look at sustainability," says Prologis's Bannatyne. "Upgrading a 20- or 30-year-old building can quickly become pretty uneconomical, and sustainability will become an even bigger issue with certain buildings effectively becoming obsolete unless you can upgrade them sufficiently."

Logan Smith, head of European logistics at Hines, argues that older buildings offer both a challenge and an opportunity for meeting ESG objectives. "There are some advantages to reusing and repositioning buildings. When you think about embedded carbon in concrete and steel, there is real value to buying older buildings and investing the capex necessary to improve them, strictly from an environmental standpoint."

Supply chain is adapting

Because of covid-19, the supply chain is moving from a 'just in time' to 'just in case' model, which means more warehouses are needed to store a greater stock of goods. This shift has been fueled by a desire to increase inventory and avoid shortages if the world faces a similar crisis in the future.

However, this has disrupted the supply chain: "Supply chain disruption is going to last probably another 18 to 24 months. This will put temporary pressure on the logistics space," argues Alistair Calvert, chief executive of Clarion Partners Europe.

"While we don't assume there's going to be further yield compression, we still think that logistics will be a relative outperformer for quite a long time yet, given the rental growth that we're seeing and expecting." ■

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A people-first playbook



Guest comment by **Joanna Frank**

Logistics should prioritize employee health for lasting change, says the CEO of the Center for Active Design, operator of Fitwel

When it comes to attracting and retaining top talent, reducing injuries and absenteeism, decreasing stress levels and increasing overall job satisfaction, employee health and wellness can no longer be an afterthought.

With a 60 percent employee turnover rate in the North American industrial sector and 5 percent of warehouse workers – or approximately 73,000 individuals – experiencing work-related injuries or illness each year, prioritizing employee health and wellness is now a prerequisite for maintaining productivity and output.

Not only are investors, developers and property managers within the industrial sector increasingly understanding the immediate impacts of optimizing the workplace, they are also recognizing the long-term benefits and inherent value of prioritizing health in the design and operations of industrial spaces – and especially in logistics properties.

Despite the growing momentum, and the fact that 87 percent of employees across all sectors consider health and wellness when choosing an employer, the logistics sector still lags

in meeting this moment. With one in three industrial workers citing health concerns as the leading cause of absences, the demand for prioritizing the safety, health and wellbeing of people in the workplace is only intensifying. And with that, the imperative for an integrated approach with thorough guidelines is stronger than ever.

Even prior to covid-19, the logistics sector faced difficulties brought on by the rapid growth of e-commerce, a tightening labor market and high

levels of employee turnover. But with workers deemed essential to meeting the supply chain demands exacerbated by the pandemic, we have witnessed a series of coronavirus outbreaks across warehouse sites and transportation hubs and, understandably, subsequent calls for workplace improvements in everything from air ventilation standards to sick leave policies.

Report solutions

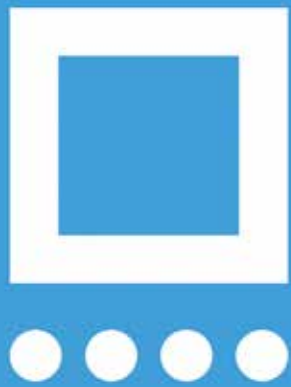
In light of these ongoing challenges, the Center for Active Design (CfAD) and QuadReal Property Group teamed up to author *A Better Box: Optimizing Industrial Spaces for Employee Health and Wellness*.

This report, published in January, identifies key design and operations strategies for optimizing employee health within light manufacturing sites, storage and distribution centers, and flex spaces.

Designed to serve as a playbook for every stakeholder, the report provides actionable guidance for owners, facility managers, tenants and investors to develop a ‘new and improved normal’ for industrial spaces – one where worker health and workplace preparedness are prioritized through strategic design and operational interventions.

The research behind this report

“The demand for prioritizing the safety, health and wellbeing of people in the workplace is only intensifying”



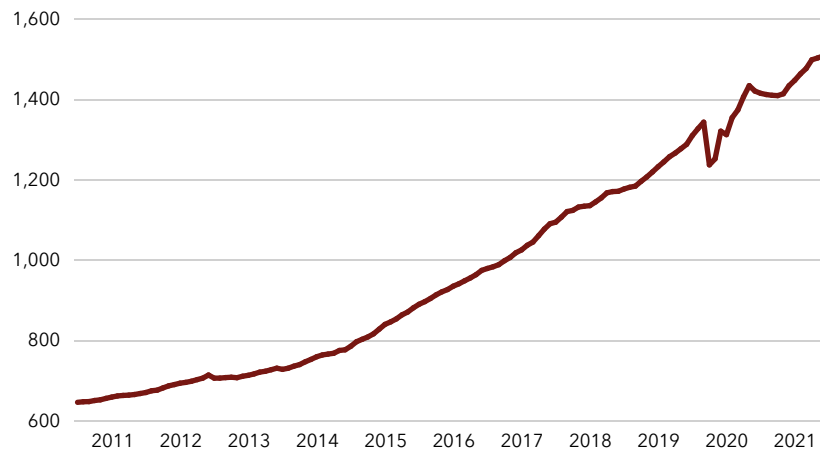
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There has been significant growth among warehouse and storage workforces in the US (employees, 000s)



Source: Bureau of Labor Statistics

builds upon the work conducted by CfAD to develop the Commercial and Industrial Site Fitwel certification. With three areas of impact – maximizing location and site accessibility, designing functional and supportive interiors, and creating spaces that promote productivity and preparedness – this report offers more than 30 industrial-specific strategies for improving employee health through design and operations.

Rob Lauer, senior vice-president, industrial, east, at QuadReal, says: “The industrial sector is maturing, and in partnering with our warehouse and logistics tenants we know that they have higher expectations in terms of employee health and wellness. At QuadReal, our teams are making even more conscious choices at our existing properties and new projects to prioritize occupant health in support of our commitment to creating resilient and sustainable communities.”

Here is an overview of some of the report’s timely recommendations:

Maximizing location and site accessibility With a rising interest in last-mile delivery, it is becoming increasingly possible to locate industrial sites in population centers. This would not only increase the active transportation and physical activity of employees; it

also has the potential to reduce supply chain costs by 50 percent.

In addition, opting for sites with natural greenery nearby or finding ways to enhance existing outdoor spaces with greenery can have a real benefit. Employee survey results indicate that, as contact with nature increases during the workday, perceived stress and generalized health complaints decrease.

In addition, outdoor space amenities – such as walking paths, flexible seating and water features – encourage workers to get outside during their breaks, promoting increased interaction and physical activity.

Designing functional and supportive interiors Among the leading injuries sustained by people working in industrial spaces are musculoskeletal disorders, which affect muscles, tendons and joints. These disorders cost US employers between \$15 billion and \$20 billion per year in compensation costs.

Fortunately, there are many ways to prevent these injuries, and much of this has to do with the design of the interior space. Making sure that the heaviest and most frequently picked parcels are placed within the golden zone, or at chest height, is key.

In addition, managing exposure

to extreme temperatures is vital. Integrating high-efficiency heating and cooling systems can limit long-term exposure to extreme temperatures. This can help to prevent heat exhaustion, dehydration and other heat-related illnesses, as well as muscle pain and cramping, and respiratory and cardiovascular symptoms caused by extreme cold.

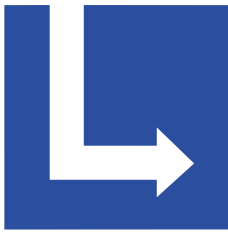
Creating spaces that promote productivity and preparedness When it comes to employee health, operational protocols are essential. One example of this is paid sick leave. Paid sick leave has been shown to reduce risk of worker injury, with one study finding that workers with paid sick leave were 28 percent less likely than those without it to experience workplace injuries.

To remain productive, employees must trust employers to keep their best interests in mind, even in emergency situations. As the covid-19 crisis and climate change have made clear, safety and preparation are key. Sites that have planned for the worst not only ensure the well-being of those working on site; they also quickly become the most appealing assets.

In addition, adopting the measures outlined in the report can serve as a powerful first step for promoting health and wellness in industrial spaces and the eventual achievement of Fitwel certification. While the report features practical recommendations for promoting employee health within the industrial sector based on research and science, our Fitwel Commercial and Industrial Site certification quantifies these guidelines and provides precise requirements for achieving certification.

The logistics sector has a tremendous opportunity to adopt these efforts and to put into action the very approachable guidelines of this people-first playbook. ■

For the full report, visit fitwel.org



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Year in review

The biggest North American logistics stories from 2021

Former Colony execs launch new platform

Lew Friedland and Peter Eichler III joined ex-Colony colleagues Paul Fuhrman and Jae Yi at Miramar Capital to launch its industrial real estate platform, Miramar Industrial.

NorthBridge raises \$500m

Boston-based NorthBridge Partners closed a value-add logistics fund at its \$500 million hard-cap. NB Partners Fund III will target industrial assets on the East Coast.



JAN 2021

FEB

MAR

APR

MAY

JUN

GLP Capital Partners raises biggest fund

GCP, a firm formed by a number of GLP alumni, raised the largest North American logistics fund to date. GLP Capital Partners IV's final close was at \$2.3 billion.

EQT Exeter targets \$2bn for logistics

EQT Exeter was gearing up to launch its fourth US core-plus industrial fund. The vehicle would be the firm's largest US core-plus logistics firm to date.

Rockpoint partners with former Link CEO

Boston-based Rockpoint Group partnered with Benjamin Harris, former head of Blackstone's logistics portfolio company, Link Logistics Real Estate, as part of a drive to increase exposure to industrial assets.



Starwood eyes target

Starwood Capital upped its takeover bid for the 120-property New Jersey-based logistics REIT Monmouth Real Estate to \$1.8 billion. It was up against Equity International, which was looking to merge its own REIT with Monmouth.



Mapletree raises \$1.4bn

Mapletree Investments held the final close on Mapletree US Logistics Private Trust at \$1.4 billion. Capital raised by the vehicle was fully invested in 155 logistics properties located across 19 US states.

ElmTree closes fund at \$888m

US investment firm ElmTree Funds raised \$888 million for ElmTree Net Lease Fund IV. The fund would finance strategically located markets with strong leasing fundamentals, with a focus on investments in industrial and logistics vehicles in North America.

Walmart launches drone delivery service

Walmart partnered with drone company Zipline to transport select health and wellness and consumable products within a 50-mile radius of its store in Pea Ridge, northwest Arkansas.

JUL

AUG

SEP

OCT

NOV

DEC

Brookfield recaps industrial park

Brookfield Asset Management closed another real estate secondaries deal as it recapitalized a Chicago-based industrial park managed by Elion Partners. Elion Logistics Park comprises five assets totaling four million square feet.

BVK enters secondaries with StepStone

Bayerische Versorgungskammer entered the real estate secondaries market through a €300 million separate account with StepStone Real Estate to target secondaries investments in the US and Asia-Pacific, with a heavy focus on industrial and logistics vehicles.



Blackstone purchases Cabot portfolio

Blackstone bought a 124-property logistics portfolio from Cabot Properties for \$2.8 billion, tapping two of its core-plus vehicles: Blackstone Real Estate Income Trust for the US assets and its open-end European fund for those in Europe.

EXPERT COMMENTARY

*Structural transformations support positive short- and long-term prospects, believe
Tim Wang, head of investment research, and Julia Laumont, vice-president,
research and strategy, at Clarion Partners*



US industrial's outlook is bright

US industrial property has continued to be the best-performing commercial real estate sector amid historically robust demand. Institutional-quality industrial investments have significantly outpaced the overall NCREIF Property Index since 2011, as well as the other core CRE property types over recent years. The enduring strength of the sector has been extraordinary, driven in strong part by the ongoing rise in US consumer spending, omnichannel expansion and expanding global trade.

Our short- and long-term outlook for the sector is positive, given structural transformations in both global supply chains and last-mile distribution.

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Over the next few years, we believe that three main factors will drive greater industrial space requirements and higher rents: first, ongoing supply chain disruption and inventory rebuilding; second, the continued e-commerce boom; and third, higher construction and replacement costs.

Strongest property fundamentals on record

Nationwide, US industrial property fundamentals are the strongest on

record, with all-time-low vacancy and soaring rents. New leasing activity has been historically high, and nearly half of product under construction has been preleased. These high-demand conditions have created a market where landlords have a greater ability to increase rents at warehouse and distribution properties in most markets.

- **Vacancy at all-time low.** As of Q3 2021, US industrial vacancy reached a record low of 3.6 percent. All top distribution hubs saw vacancies well below long-term averages (LTAs).
- **Robust rent growth.** Recently, rent growth also reached the highest

pace in over two decades. Average asking rents rose by 10.4 percent, while same-store asking rents were up 4.5 percent year-on-year as of Q3 2021.

- Demand outpacing new supply.** Over the last several years, net absorption has continued to outpace new supply and reach record levels, and shows little sign of slowing down.

Supply chain disruption and inventory rebuilding heightens warehouse demand

The onset of the global covid-19 pandemic precipitated a rapid and unprecedented demand shock that interrupted normal business conditions. Many suppliers quickly scaled back production, which led to widespread inventory shortages and distribution delays. A synchronized global economic recovery, or demand comeback, is now well underway. US retail sales are now 20 percent above pre-covid levels, and the inventory-to-sales ratio has fallen to an all-time low.

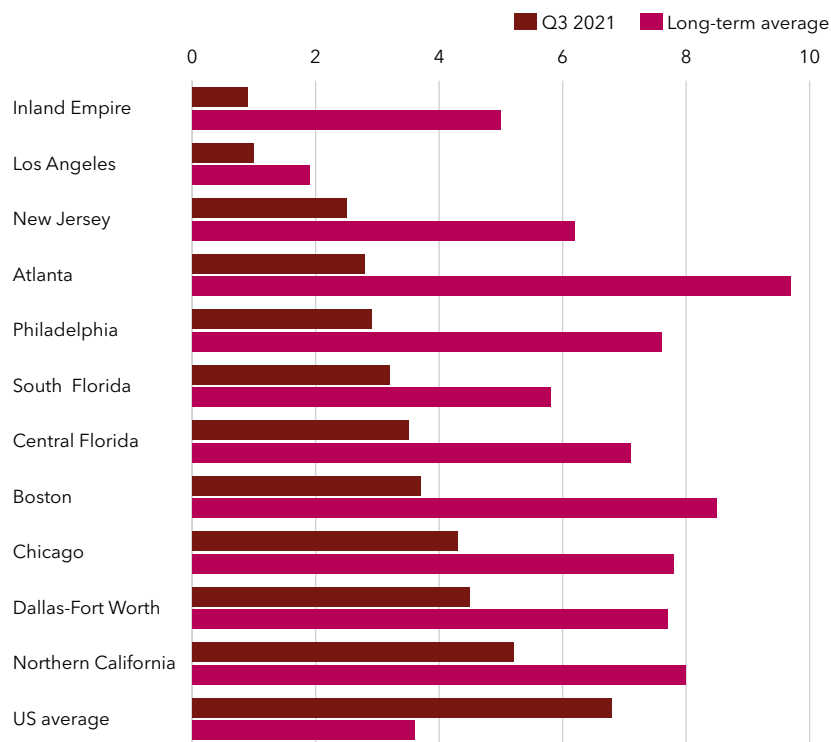
This supply chain disruption has led more and more logistics occupiers to adopt a 'just-in-case' management strategy, often referred to as inventory rebuilding. This both hedges against potential future disruptions and ensures timely last-mile fulfillment. We

expect US business inventories to rise swiftly in the years ahead. It has been estimated that a 1 percent rise in inventories is consistent with approximately 100 million square feet of net absorption; therefore, a 5 percent increase in US business inventory levels would require an additional 400 million to 500 million square feet of warehouse space.

Strong momentum in e-commerce sales boom

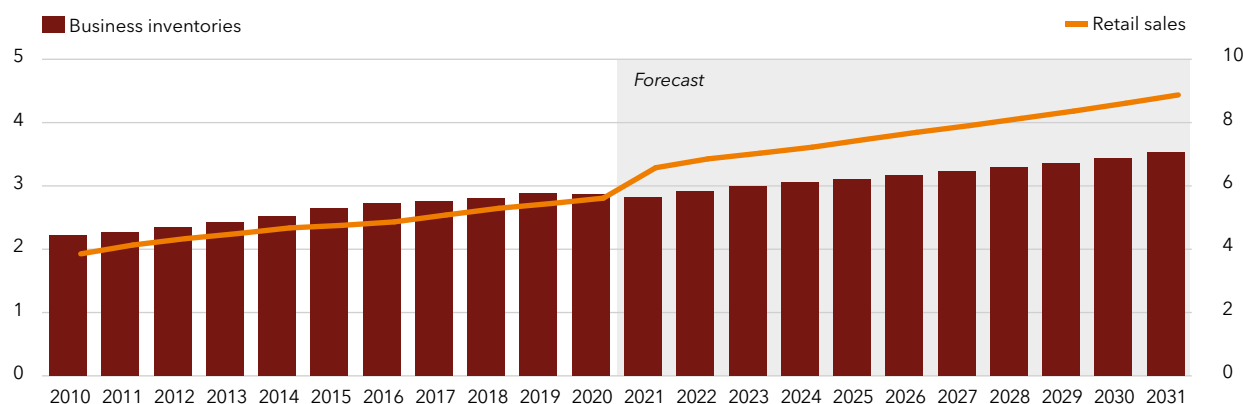
The ongoing expansion of e-commerce logistics is by far the largest secular tailwind for industrial demand. E-commerce users usually utilize three times more warehouse space than traditional retailers, augmenting the demand for warehouse and distribution space.

Selected industrial hub vacancy rate in Q3 2021 vs LTA



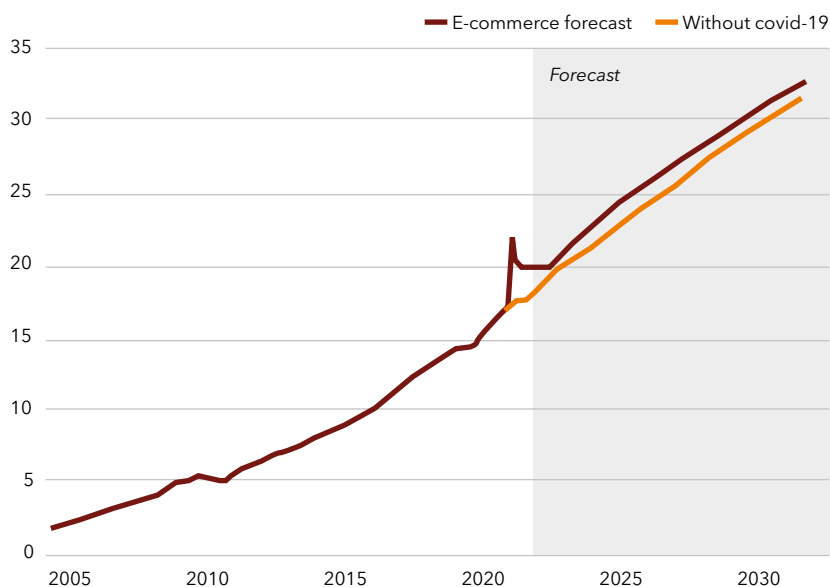
LTA represents the long-term average from Q2 2002-Q3 2021
Source: CBRE-EA, Clarion Partners Investment Research

Surge in US retail sales to drive business inventories higher (\$trn)



Source: Moody's Analytics, Clarion Partners Investment Research

US e-commerce sales as a share of core retail sales (%)



Core retail sales excludes motor vehicles, parts and food services
Source: CBRE, Moody's Analytics, Clarion Partners Investment Research

The covid-19 pandemic dramatically accelerated the recent pace of e-commerce sales. Online sales now account for about 20 percent of total core retail sales (as of mid-2021), which could grow to about 30 percent in the US by 2030.

By 2026, total US e-commerce sales are forecast to exceed \$1 trillion, double the \$500 billion just three years ago in 2018. Industry estimates indicate that every \$1 billion of new e-commerce sales growth requires 1 million square feet of additional warehouse space. Consequently, an estimated 340 million square feet of new space will be needed over the next five years to accommodate e-commerce expansion alone.

As e-fulfillment becomes more dominant, minimizing delivery time and costs will continue to be essential. We expect that there will continue to be attractive investment opportunities ahead in the last-mile segment based on recent demand growth trends:

- **Surging absorption levels for light-industrial.** Absorption of light-industrial space, which is less than 400,000 square feet and largely made up of regional and last-mile

users, has greatly increased in the 10 largest US metro areas in recent years.

- **E-commerce giants pay premium for last mile.** The most competitive occupiers, such as Amazon, FedEx and UPS, will pay a high cost to be near end-consumers amid escalating delivery costs, which have been exacerbated by limited land availability.

Higher replacement costs likely to hinder new supply and boost rent growth

Over the past year-and-a-half, there has been an unprecedented surge in US construction costs. Subsequently, CRE development and renovation costs have risen significantly.

As of Q3 2021, overall building costs remained elevated, up by approximately 35 percent from early 2020. On a year-on-year basis, industrial land costs in East and West Coast markets were up by 50 percent and 75 percent, respectively.

Higher construction costs will negatively impact project timelines and budgets for the 1.4 billion square feet

of warehouse space planned over the next five years. At the same time, much of US existing stock is dated and does not well serve the demands of modern-day omnichannel distribution, and there is a shortage of high-quality modern warehouse space.

- **Shortage of Class A inventory.** Class A warehouse and distribution property is only 15 percent of overall US industrial inventory, about 2.2 billion square feet of the total 15 billion.
- **Widespread functional obsolescence.** About 75 percent of total US industrial inventory was built before 2000.

We anticipate that tenant demand for industrial property – in particular, modern Class A facilities – will be strong amid limited new supply. Many logistics tenants will be required to pay a premium for high-quality facilities in premium locations, and landlords will be able to sustain and escalate rent levels. We expect effective rent growth levels to range between 5.5 percent and 6.6 percent from 2021 to 2023.

Investor allocations to industrial rise

Investor interest in US industrial assets has continued to escalate. Consequently, NCREIF Property Index portfolio allocations to the sector have swiftly risen from 14.2 percent in 2017 to 25.6 percent in 2021. Looking ahead, the more recent phenomena of inventory rebuilding and higher replacement costs will continue to drive growth within the logistics industry, along with the ongoing e-commerce boom.

We are optimistic about the near- and long-term appreciation and income growth potential for well-located, high-quality industrial investments amid the ongoing strength of consumer spending and rise in global trade. Thus, the outperformance of the industrial sector will likely continue over the next few years. ■

Fast four: North America

North American real estate proves resilient despite covid-19 setbacks

Our North America panel

David Levine

Senior managing director,
Blackstone Real Estate

Devin Barnwell

Head of logistics US,
Brookfield Asset Management

Steve McCarthy

Head of North America,
AXA Investment Managers, Real Assets

Palmer Letzerich

Senior managing director and head of industrial and logistics, Hines



Q How has the pandemic changed logistics in North America?

DL: The pandemic clearly accelerated trends that were already underway, such as the growth of e-commerce. It has also forced companies to rethink their supply chain and inventories.

DB: Fueled by e-commerce tailwinds, supply chain pressures, technology and shifting consumer needs, the US logistics market has seen unprecedented demand during this cycle, pushing vacancy to a historical low and sustaining material rent growth nationally. We see continued demand and rent growth for functional, well-located industrial product not only in the Tier 1 markets, but also in secondary markets.

SM: Covid-19 has accelerated US e-commerce sales which, when combined with increased consumer spending and 'just-in-case' inventory management strategies, has led to significant increases in tenant demand, rental rates and property values. In addition, during the past two years institutional investors have primarily focused on two asset classes (multifamily and industrial), which has led to lower cap rates in the industrial sector.

PL: The pandemic was responsible for two major and permanent shifts that put the product type on the map: increased absorption and increased investor appetite. Now that consumers are permanently comfortable ordering online, the square footage that logistics companies require has increased dramatically. Adding fuel to the absorption fire is the fact that occupiers are now also increasing inventory levels to address supply chain shocks.



Q Which market will see the most interest in 2022?

DL: Given the population growth we're seeing, we believe the Sun Belt markets will continue to be a large focus. The last-mile logistics thesis has been well documented in traditional gateway markets such as Los Angeles, San Francisco and New York, but we are starting to see similar trends across prominent Sun Belt markets like Atlanta, Austin, Phoenix and Las Vegas.

DB: The gateway, port-centric markets will continue to see outsized demand and, while most

of the investment activity will continue to focus efforts in these areas, there are several markets with a strong labor force and business-friendly environment that offer an alternative, both from a user and an investor perspective. Austin and Phoenix are great examples of markets that are poised for significant growth in 2022.

SM: Inland Empire will continue to be the US's star-performing market, offering proximity to the massive LA ports and limited development supply.

PL: Coastal markets along with inland markets like Dallas will continue to draw investors due to eye-popping absorption, cap rates and rent growth and incredibly high barriers to entry. Subsequently, relatively cheap markets in Texas, Colorado and Arizona will continue to attract new investment.

Q Which market is most unfairly overlooked?

DL: We have seen tremendous economic and employment growth in Boston, particularly across the technology and life sciences sectors. For a long time, Boston was not viewed as a distribution market, but that perception is now changing.

DB: Boston has been traditionally overlooked by institutional investors as a logistics market. However, the favorable demographics, strong labor force and elimination of a lot of traditional industrial space over the years has led to very dynamic market conditions.

SM: While strong population and job growth will continue to fuel logistics demand in the Southeast

and Southwest markets in the US, we also believe tenants will seek space near inland ports offering good air and rail connectivity. Examples of these markets include Louisville, Kentucky and Columbus, Ohio.

PL: We are seeing spread in secondary markets in the US, but it is becoming increasingly difficult to generate satisfactory returns without pushing too aggressively on underwriting assumptions. Where I see the most spread and an excellent opportunity for dollarized industrial returns is in Mexico.



Q What will be the biggest change in logistics in 2022?

DL: The supply chain issues the country faces are definitely top of mind. The congestion we are seeing at the major ports has led to significant challenges for certain companies.

DB: As technology continues to evolve across the sector, 2022 will be a year of accelerated adoption that optimizes supply chains and promotes efficiency. Another topic that will see tremendous evolution and development is the 'greening' of industrial space.

SM: Even stronger investor demand and competition as industry players continue to chase the promise of sustained rental growth in the sector. Increasing construction and labor costs will continue to be a significant challenge.

PL: The separation of true core from commodity core, where true core outperforms in the near and mid-term, and the performance of commodity buildings could begin to lag in the medium term. ■



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KEYNOTE INTERVIEW

Air freight real estate: Cleared for take-off



*The pandemic has seen soaring demand for air cargo, which is generating opportunities for investment in on-airport facilities, says Realterm head of research **Nathan Kane***

Among all economic sectors, none has experienced deeper disruption as a result of the covid-19 pandemic than air travel. With passenger numbers collapsing, the booming air freight sector has become crucial to airlines seeking to defend their bottom line. Supply chain real estate specialist Realterm has carved out a niche as one of the few established players in the air cargo market through its Aeroterm platform, which owns 15 million square feet of largely on-airport property at 36 airports, primarily in the US and Canada. Realterm's portfolio consists of high-flow-through logistics real estate and aviation-related support facilities. Head

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of research Nathan Kane explains the dynamics at work in a little understood, albeit dynamic and fast-growing, corner of the logistics real estate market.

Q How has the pandemic affected the air freight sector?

It might sound somewhat counterintuitive, given the sharp economic contraction that took place, but demand for air freight actually soared during the pandemic. E-commerce really took off,

and online shopping is a major driver of air cargo volume. However, demand shooting up did not immediately lead to an increase in volume.

Historically, about half of air cargo volume has been carried in the bellies of passenger aircraft. With passenger air traffic down by almost 95 percent at one point, that eliminated almost half of the capacity in the system. Meanwhile, with revenue from passengers virtually wiped out, carriers became much more dependent on cargo to forestall some of that revenue loss.

A lot of passenger aircraft were retrofitted for cargo. They literally took the seats out of the planes to make

room. Even in the depths of the pandemic-induced recession, airlines' air cargo revenue did not fall nearly as sharply as that from passenger traffic, and revenue from air cargo has sharply increased over the past year. The International Air Transport Association is forecasting growth of 7 percent to 8 percent in 2021 over 2019, the last pre-covid year. Meanwhile, passenger revenue is still around 30 percent lower than it was before the pandemic.

Q How is air freight's role in global supply chains evolving?

A shipper has multiple options for how they get their product to the consumer. Usually, the most cost-effective way is to put it on a container ship, for instance between Shanghai and Los Angeles, then offload it onto rail or truck. Typically, air cargo is reserved for high value products, and/or for products that are time-sensitive.

The surge in consumer demand that followed the lifting of lockdown restrictions has created bottlenecks in the shipping industry, with ships queuing to unload because there is no room left on the port. Consequently, some suppliers have shifted to moving their product by air, which has led to a surge in demand. Bottlenecks do not usually occur in air cargo, because a trip usually takes a few hours rather than days or weeks, and schedules and equipment can be rearranged to accommodate a more efficient flow. However, because air cargo volumes have increased so much, so quickly, we are seeing a little of that congestion spreading to airports too.

During the summer and early fall of 2021, we saw very strong cargo demand growth. There was a dip between October and November, reportedly due to delays at handling facilities.

Q What do those trends mean for air cargo-related property investment?

Air cargo is an increasingly important



Releasing air freight pressure at JFK

In June 2021, Aeroterm secured a long-term ground rent agreement to build a \$145 million cargo center at New York's JFK airport. Two obsolete buildings on the 26-acre site will be demolished to make way for the 350,000-square-foot project, which will be the first new cargo facility at the airport in 20 years. "It is the kind of high-clear-height property that can accommodate much higher throughput, increasing capacity at a very constrained airport and providing a release valve for some of the intense pressure on air cargo," says Kane. Construction began in September 2021 and is expected to be completed by the end of 2023.

element in airlines' revenue models, and because of that air cargo terminals have become more valuable to them as a way of realizing that revenue. For landlords, that translates into an increased ability among tenants to pay higher rents to secure those properties, as well as a willingness to sign longer lease commitments and a greater propensity to renew leases when they expire.

Meanwhile, the growing congestion at air freight terminals highlights the need for more efficient cargo handling, which creates a need to build new properties or reconfigure existing ones. Many airport infrastructure proposals – to expand runways and taxiways, or improve passenger terminal facilities – were put on hold when the pandemic struck because the revenue stream was no longer there to support them. Government stimulus packages provided some relief on the revenue side through short-term loans and

subsidies. But they did not fund infrastructure improvements. In the US, the failure of the passing of the Build Back Better bill means that airports may be forced to divert funds from developing on-airport properties to more infrastructure-focused goals. That should mean an expanded role for third-party and private investment capital.

Q What opportunities for investment will be created?

Investment potential depends on three broad macro themes. The first is increasing demand. E-commerce will continue to be the major driver in both the US and Europe. It is expected to comprise about 20 percent to 25 percent of all retail sales in the US by the middle of the decade. Cargo facilities at international gateway airports like JFK in New York or LAX in Los Angeles have limited capacity for cargo

growth within their existing terminal infrastructure. That creates opportunities for investing at secondary airports in the US. Some freight may start to move through Philadelphia instead of New York, for example, before arriving at the same final destination. Secondary airports in fast-growing metropolitan areas like Austin, Las Vegas and Orlando will also require expanded capacity to serve consumer populations.

A second consideration is supply constraint. It is extremely difficult to build new real estate on an airport. To identify growth opportunities, developers have to work with airport authorities, which are usually run by municipalities, but also sometimes by states or private operators. A lot of the time, their objectives do not align well. Because of the scarcity of options for air freight tenants, landlords have more pricing power in setting rents than they would if occupiers had the ability to shop around. The higher rent growth that can be captured from that dynamic makes on-airport investment opportunities more attractive.

A third theme is the functionality of the existing cargo terminal stock. Much of it was built back in the 1960s and 1970s, at a time when cargo volume was much lower and not as time-sensitive, and it is poorly suited

to the handling of equipment that is in use today. That creates opportunities to upgrade properties, for instance by increasing clear heights to accommodate automated cargo handling.

Q How can investors access the air cargo real estate market?

Capital has to be deployed through a fund that is able to operate in this market. For example, Realterm offers its Realterm Airport Logistics Properties (RALP) fund to access this market. We may see some investors that previously exited the sector return. In addition, given the attractive market fundamentals, I am sure there will likely be new funds proposed, especially as development becomes more of an attractive prospect. High prices for core investments in the broader industrial sector at the moment, and exceptionally strong tenant demand, are making new construction a viable alternative to buying existing properties. There are likely to be infrastructure funds interested in on-airport investment opportunities, as well.

Q What are the challenges of investing in the sector?

On-airport properties are usually owned through a ground lease,

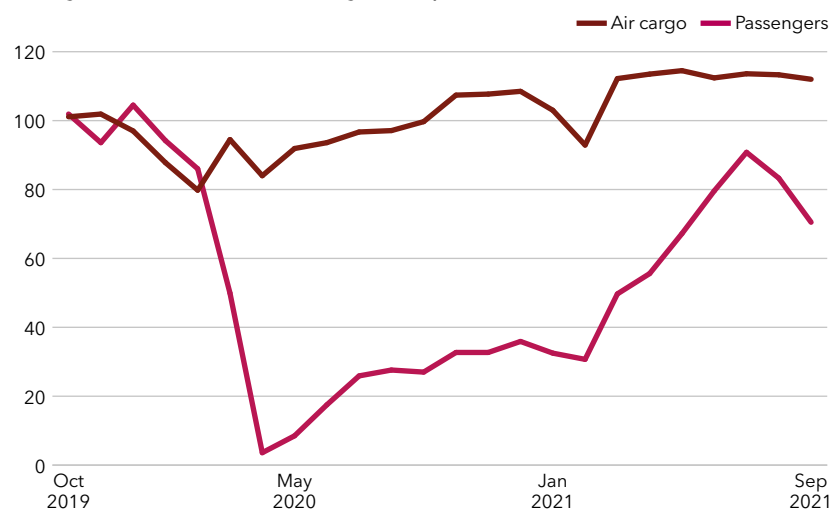
“Air cargo is an increasingly important element in airlines’ revenue models, and because of that air cargo terminals have become more valuable to them”

typically 20 to 30 years in duration, so the term remaining on that ground lease is often a major determinant of the attractiveness of the investment. Because ownership of the building reverts to the airport authority upon expiration of the ground lease, the value of an investment comes entirely through the income stream during the life of the ground lease. The properties that we buy typically have less than 30 years left on the lease, sometimes much less. In these circumstances, lease terms to an operator may hinge on the potential for a ground lease from the airport authority to be renewed.

Development is another way to invest in on-airport properties. Airport authorities rely on public sector financing, and so they rarely have sufficient capital to undertake the improvements they would like to see. They often need a private sector partner to accomplish their goals. An airport authority, often working together with an operator, will issue a request for proposals for a facility that they would like to see built. Developers bid for the project and, if selected, they then enter into negotiations to finalize the financial details.

This process can take years – far longer than what developers are used to in other settings. Investors must have a patient, long-term view to successfully invest in the air cargo real estate market. ■

Air cargo volume remained stable throughout the pandemic (% of Q4 2019 levels)



Source: US Bureau of Transportation and International Air Travel Association



Industrial's old story holds investors riveted

*As the pressure of capital seeking a home in logistics grows, managers are snapping up older buildings at increasingly sharp prices. By **Stuart Watson***

For investors in industrial real estate, age is just a number. While most investment managers would hesitate to buy a decrepit office block or shopping mall with anything other than demolition and redevelopment firmly in mind, their thirst for older industrial stock is currently unquenchable.

The explanation for the phenomenon is manifest: weight of capital. “We have a saturation of players looking to partake in the industrial arena. There are so many new entrants and so much competition. Not all of them want to do ground-up development, but everyone can get their arms around a strategy to reposition an existing asset,” says Leslie Lanne, executive managing director and lead of JLL’s urban infill practice in the US.

Laurie Lagarde, head of European logistics at CBRE Investment Management, says that would-be buyers, frustrated by ending up as underbidders time and again, are turning to older assets because they cannot acquire newer ones. “They have no choice if they want to buy something in the logistics segment. There is too much capital in the market, and there are fewer off-market deals available because sellers can get better pricing from high competition on the market.”

Inevitably, pricing for older assets has increased. Lagarde pegs the spread between cap rates for new buildings and older ones at 50bps or less, with virtually no difference at all in some supply-constrained locations like Paris, London, Barcelona and Lyon.

Repositioning is considered a core-plus strategy, while buying to demolish

and redevelop fits into the value-add bucket, she notes, with abundant capital available and willing to cover the risk spectrum.

Are older buildings worth the prices that investors are paying? The crucial factor in determining value is location, argues Logan Smith, head of European logistics at investor-developer Hines. In that respect, dated assets often have an advantage over newer ones. “Because cities have expanded, they tend to be closer into the urban area of conurbations. And because the location is good, the land component of total value can be relatively higher.”

Smaller warehouse, bigger punch

Assets close to urban populations play into the logistics sector’s defining present-day trend: e-commerce. “The

nature of what is being asked of industrial real estate today – the ability to move product quickly – has increased the value of lower clear-height dated product that is close to people,” observes Jason Tolliver, Americas logistics and industrial investor lead at Cushman & Wakefield.

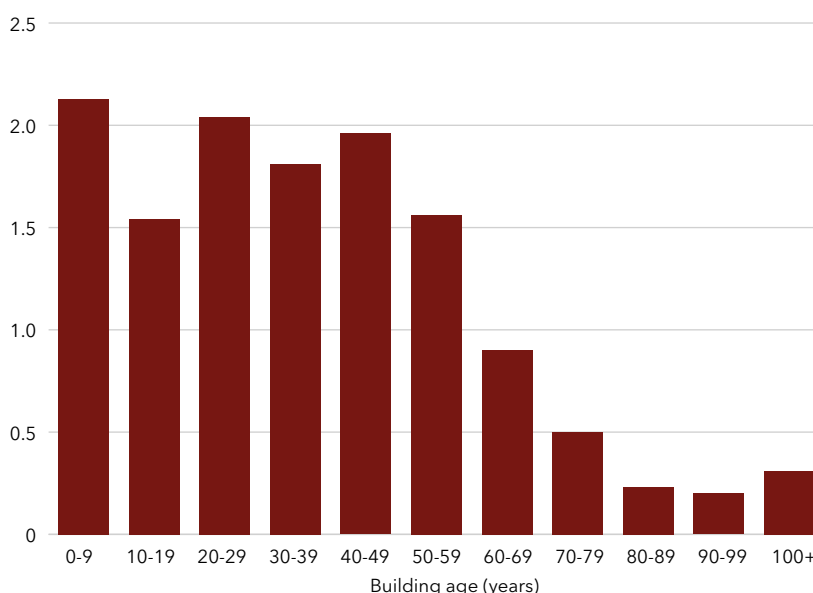
“It offers a tremendous opportunity to deploy capital and realize rent growth. In the US on a one-, five- and 10-year unlevered basis for investment returns, smaller multi-tenanted industrial product has outperformed both overall industrial returns and bulk warehouses, as well as offices, retail and multifamily. The smaller the warehouse, the bigger the punch, if it is the right small warehouse in the right location.”

Rental growth, and its expectation, is the justification for the high prices currently being paid, says Smith. “That is something we have clearly seen in dense, infill markets. If vacancies are low, there is no more stock to take up, and the cost of replacing these assets is increasing because of higher land and construction prices; all things being equal, you would expect the rents to increase.”

Adam Berns, chief investment officer at US logistics platform GLP Capital Partners, argues that the attractiveness of a building in any given market or submarket is primarily related to the context of other buildings in that market. “A building built 10 to 15 years ago in a market with abundant new supply will get to the point much quicker where it becomes less desirable from a tenant perspective, and an owner has less ability to attract tenants and push rent growth. Compare that to infill and coastal markets where it is very challenging to add new supply, and a building that was built 30 years ago may be very attractive.”

The importance of context is nowhere more evident than in the extremely land-constrained markets of East Asia, where multi-story distribution centers are already commonplace.

Nearly three-quarters of US industrial real estate is more than 20 years old (bn sq ft)



Source: JLL Research

“Those warehouses are in such high demand that they just cannot be obsolete,” says Chris O’Brien, executive director, capital markets, industrial and logistics for APAC at CBRE. “They still serve a purpose in good locations, and from a structural perspective they are still sound. When vacancy levels are so low, they are always going to be relevant.”

Price adjustment

Alongside location, the two further factors that buyers of older industrial stock must account for are functional and physical obsolescence, advises Jack Cox, head of EMEA industrial capital markets at CBRE. Functional obsolescence relates to building specification, including eaves height, yard area and floor loading capacity, factors on which last-mile logistics operators are typically willing to compromise if they are close enough to affluent consumers to reduce delivery times.

Physical obsolescence is largely related to the condition of the building, especially the floor and roof, which are the most expensive elements of an industrial unit to replace. “There will be a price adjustment, or not, for those

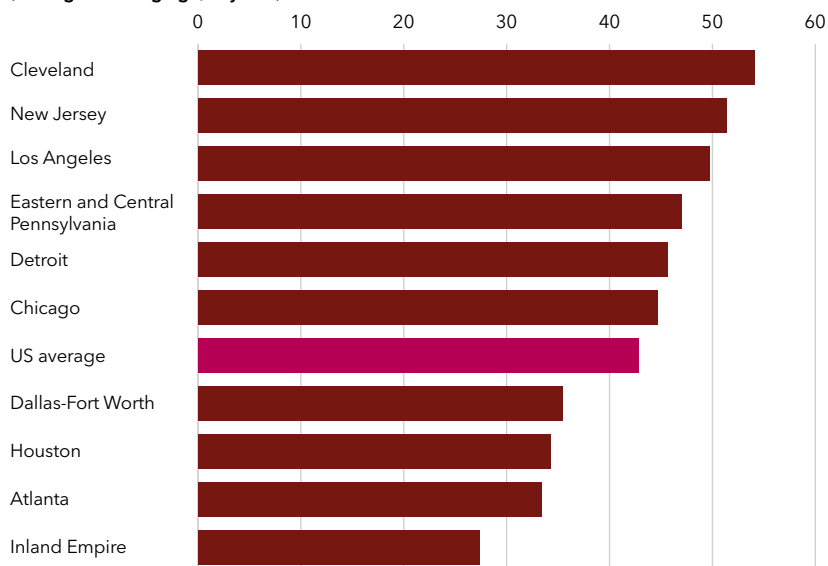
items. But investors can get very comfortable with buying older assets if they feel they have the right advice on those three factors,” says Cox.

The essential simplicity of most industrial buildings means that they tend to retain their value better than other real estate assets, opines Ben Bannatyne, president of Prologis Europe. “Obsolescence is not such an issue as people make out. Most 20-year-old space still works very well. It looks like a modern facility. We might upgrade it with LED, put cladding on to make it more energy efficient, and put more docks on it to make it more suitable for e-commerce. Our portfolio in the US has buildings that are 50 to 70 years old and a lot are still fit for purpose. You can reclad them pretty cheaply and reroof them, and tenants can do a lot inside that rectangle.”

Meanwhile, if the location is good enough, then the condition of the building becomes almost irrelevant for managers with a long-term eye on redevelopment potential. “We are buying a lot of older product as a land bank for the future,” says Bannatyne.

“When the leases expire, we will flatten whatever is on it and rebuild.

Industrial stock is oldest near big US cities where logistics demand is highest
(average building age, in years)



Source: JLL Research

It is a covered land play with income until we are ready to redevelop. For example, we have a lot of older space on [West London industrial district] Park Royal. We may redevelop that for multi-story because land prices are so high, but, in the meantime, rental growth has been phenomenal.”

Meeting ESG goals

While dated industrial buildings are highly attractive to tenants right now, some managers are beginning to plan for a longer time horizon where their underperformance in meeting energy efficiency and other ESG goals will start to undermine their ability to attract tenants and their liquidity in capital markets.

“If we are buying to continue to use a building, we really do look at sustainability,” says Bannatyne. “Upgrading a 20- or 30-year-old building can quickly become pretty uneconomical, and sustainability will become an even bigger issue, with certain buildings effectively becoming obsolete unless you can upgrade them sufficiently.”

It is worth investing capital for improvements even in cases where strong tenant demand and meagre supply

means that a building would otherwise let without the manager needing to do much work, counsels Lagarde. “Some of the older buildings would attract tenants at a lower rent without being repositioned. But this is not sustainable in the future. I would rather spend capex to make the asset more operational and get a higher rent.”

Older buildings offer both a challenge and an opportunity for meeting ESG objectives, says Smith. “There are some advantages to reusing and repositioning buildings. When you think about embedded carbon in concrete and steel, there is real value to buying older buildings and investing the capex necessary to improve them, strictly from an environmental standpoint.”

When conducting a broader evaluation of their carbon footprint, occupiers of older buildings closer to city centers may find that shorter drive times reduce emissions compared with a more modern building further out of town, he adds.

Other potential risks await incautious buyers of older assets, including navigating local regulations and planning conditions. “Some older buildings

have a strict operating permit or license that will just accommodate a single type of goods. An e-commerce company will not go there because they need to deliver any kind of product,” says Lagarde.

Not all redevelopments are likely to secure planning permission, even if there is an existing industrial use on the site, warns Bannatyne. “In locations that are now surrounded by residential property, the local authority or city may not want any more logistics.”

Market appetite for older stock in high-demand locations is such that competition has become every bit as fierce as for new assets. Meanwhile, the relatively low value of individual properties makes it challenging to put capital to work at scale, says Tolliver. “If you are a large fund that has to deploy a tremendous amount of capital, or you are trying to rebalance your portfolio away from office and increase your exposure to industrial, it is hard to do that with smaller buildings unless you can find a portfolio or buy an operator.”

Investors desperate to find opportunities are acquiring property in secondary markets around smaller settlements, observes Lagarde, a strategy that she believes could entail long-term risk.

“They are taking a bet on the change in supply chain dynamics. I can see that demand is spreading out to get closer to consumers, but I am not entirely convinced by that trend. In a downturn there would be a reduction in consumption, and users would consolidate back to the larger cities where the demand is strongest.”

Prologis’s Bannatyne also stresses the primacy of location in informing asset selection. “That is for sure the key. When these markets turn, which they will at some point, those investors who have rushed into logistics and decided to buy anywhere because everything is going up in value will not look so clever.” ■

EXPERT COMMENTARY

*Meeting user needs for modern industrial space remains a moving target, despite new construction in major US markets, writes Macquarie Asset Management's managing director **Thomas Thorpe***



Fulfilling the need for modern logistics

Industrial real estate, with its historically strong correlation to GDP growth and consumer spending, for some time has been a key component of institutional investment allocations. However, in recent years, and in particular since the onset of the covid-19 pandemic, dramatic structural changes across the globe have factored into significant increases in industrial demand and have created broad tailwinds for the sector's fundamentals.

These changes in the US include not only the rapid growth in e-commerce penetration, but also ongoing supply chain reconfigurations, near-shoring and onshoring, and changes in inventory management by tenants.

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MANAGEMENT**

These strong demand drivers have been coupled with increased institutional investment in the sector, with US industrial transaction volumes rising more than 22 percent in 2021 over the prior year, and cap rates compressing by more than 100bps to among the lowest levels on record.

One of the most significant recent demand trends, the rapid growth in e-commerce, has been a large focus, given its higher warehouse and distribution space requirements relative

to traditional brick-and-mortar retail – almost three times more for every dollar of sales, according to most estimates. E-commerce penetration of US sales is now over 13 percent, almost double the level from five years ago.

With US consumer household spending increasing by \$740 billion since the start of 2020, the demand for retail goods continues to drive need for warehouse and distribution space. As population density and access to ports and other transportation hubs continue to factor into logistics real estate decisions, the focus remains on ultimately producing, storing and delivering closer and more efficiently to end customers. With transportation

comprising the majority of a company's total logistics spend, the decision to increase inventories and lease incremental industrial space that minimizes transportation costs becomes easier for occupiers to make.

As user supply chains change and expand, this demand for space by these tenants has not only recently grown, but also diversified across markets and locations within markets. Labor and material shortages and constrained inventories, impacted by the covid-19 pandemic, also factor into this decision for users in their supply chain and leasing decisions. With retailer inventory-to-sales ratios at recent historical lows near 1.1x, the need for 'safety stock' to prevent similar issues has only grown.

In recent quarters, logistics and distribution, third-party logistics (3PL), machinery and materials, and e-commerce retailers have comprised the bulk of new leasing across the US. In Q3 2021, logistics, distribution and 3PL tenants comprised almost 30 percent of this total leasing volume. This can be attributed in part to suppliers looking to 3PL companies to assist in managing their supply chain requirements.

Impact of new industrial real estate supply

Today, a record development pipeline is under construction and planned in major markets across the US, with nearly 450 million square feet overall under construction. The markets with the highest volume of speculative development today include Atlanta, Eastern and Central Pennsylvania, Inland Empire in California, Dallas-Fort Worth and Chicago. Spurred by demand, almost 80 million square feet of industrial space were completed by developers in Q3 2021.

Contributing to this supply growth are the capital markets, which have seen no shortage of interest in the industrial real estate asset class. A number of new entrants are making moves into the sector, as competition for investment is

How logistics can fight climate change

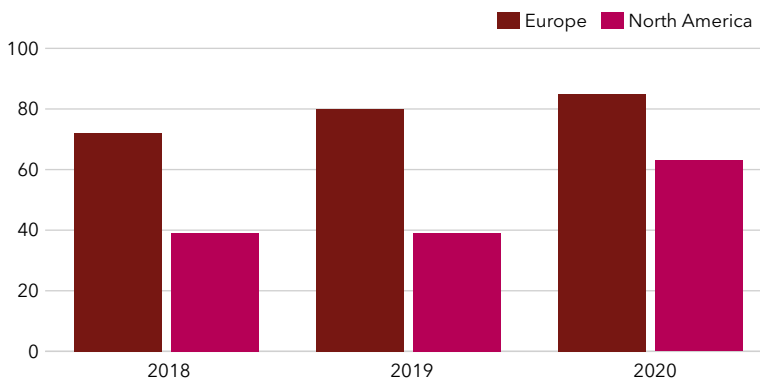
Beyond design changes aimed at productivity, Class A, modern logistics properties increasingly focus on sustainability

From electric charging stations to the ability to install solar rooftop generating capacity, modern logistics facilities are being designed and built with significant energy efficiency improvements over older product.

Macquarie Asset Management (MAM) is committed to managing its portfolio in line with net-zero emissions by 2040 and became one of the first large asset managers to sign the Climate Pledge. Real estate is an important part of meeting this commitment, as the construction and operation of real estate is estimated to comprise approximately 36 percent of global energy demand and 37 percent of energy-related global carbon dioxide emissions per latest research from the UN Environment Program.

MAM works together with its specialist operating platform in the US industrial sector, Logistics Property Company, to focus on ways to build modern logistics and distribution properties targeting a net-zero future. These include utilizing recycled building materials and incorporating efficient and 'future-proof' design elements into properties. We are working with tenants on 'green leases' and ensuring we are able to take advantage of the green and renewable electrification of the grid, as well as other technological and market advances. These changes are becoming more important for real estate investors in the US and around the world.

Proportion of real estate investors considering ESG factors (%)



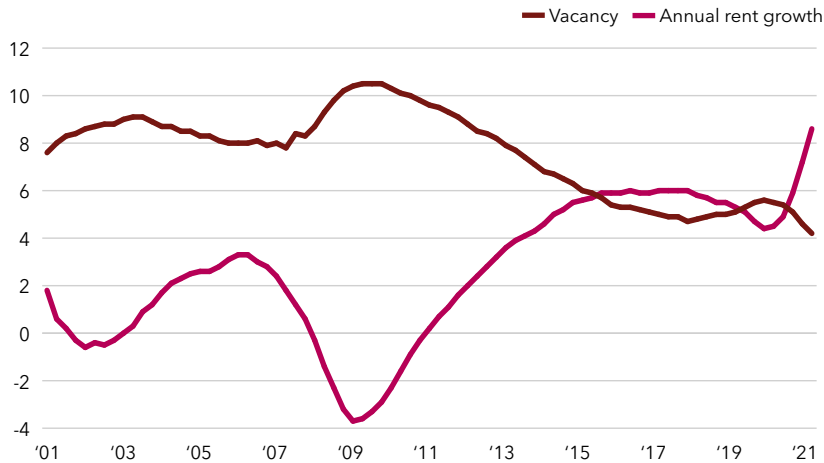
Source: Property Market Analysis

buoyed by the availability of global capital. These factors, combined with the short construction timetable for industrial relative to other real estate sectors, can raise concerns about whether the threat of overbuilding can impact today's positive fundamentals.

Despite this increased new supply, there continues to be a lack of availability today for tenants seeking space, as demonstrated by the recent large

rent growth seen across US markets. Demand has outpaced supply for the past four quarters, driving vacancies down and rents up across almost all major US markets. Year-over-year US industrial rent growth was 10.4 percent in Q3 2021, the highest level in 20 years. Preleasing rates on new developments remain high, as tenants look to lock in and de-risk their near-term requirements.

Logistics annual rent growth and vacancies in the US (%)



Source: CoStar

Supply chain disruptions and changes brought about by the covid-19 pandemic have not only impacted the demand for industrial real estate, but also new development starts and pipelines. Pricing has increased across the board, with overall materials over 25 percent year-over-year in certain markets.

Beyond pricing, the timetables required to secure and bring materials onsite have increased significantly. The early procurement of materials has become important as development projects face lead times of more than 12 months for roofing structures in certain markets and significant queues for dock packages required for tenant improvement build-outs. In today's environment of growing tenant and user demand, these limitations on building materials provide a speed bump for supply growth in the near term.

Additional, longer-term barriers to new supply of US industrial product include a lack of access to readily developable land in major markets, as well as overall longer entitlement processes. Infill and greenfield sites and large plots remain significantly constrained in coastal and gateway markets that have seen some of the strongest recent demand growth, further supporting near- and medium-term fundamentals. Coastal markets close to ports like the

“E-commerce penetration of US sales is now over 13 percent”

Inland Empire and New Jersey have seen five-year rent growth of 83 percent and 75 percent, respectively.

From an entitlement perspective, processes vary by region and, as such, new supply outlook and relative pricing will vary. Overall, municipalities remain focused on managing traditional public pressures and zoning and permitting concerns for a sector that is in demand.

For tenants, space that meets requirements and is ready to occupy is hotly sought after, particularly in the coastal markets with the tightest vacancy levels. This increased demand for space remains bounded by

construction pricing, timing and development processes, helping mitigate the threat of overbuilding.

Modern properties

In addition to the structural changes driving higher demand, the industrial real estate sector is increasingly seeing changes to design and systems to meet tenant requirements. These factors further exacerbate the demand for newly constructed and renovated space. These changes focus on flexibility and overall productivity improvements, as older product can lack the capacity from a technical perspective for modern industrial and logistics usage. With an average age of approximately 34 years, the overall US industrial stock faces increasing obsolescence risk.

One key design element within most modern logistics real estate includes higher ceiling clearance heights, with more usable space and varying pallet loads and mezzanine floors. This feature is frequently leveraged with the increased usage of automated systems and robotics. Another design element is the use of larger truck courts and greater parking for employees and trailers. This facilitates not only storage, but also the efficient flow of labor and materials to and from the site.

With an increased focus on health and well-being, properties are including amenities like gyms and basketball courts beyond more standard build-out requirements like HVAC and lighting. These amenities, which began in the hospitality industry and have become widespread in the office sector, can help tenants stay attractive, especially among millennial employees, in tighter labor markets across the US.

While demand for US industrial today is supported by broad structural tailwinds, supply growth remains constrained by current supply chain disruptions and longer-term barriers. The need for modern logistics space for today's tenants will remain a focus, as sustainability and preparing for a net-zero future come into the forefront. ■

Industrial's autonomous future



Guest comment by **Steve Weikal** and **James Robert Scott**

New technologies and systems are reinventing the supply chain and could soon become widespread, say MIT Center for Real Estate's researchers

Industrial real estate is in the midst of a dynamic transformation, as demand has seen exponential growth in the wake of the e-commerce boom and new technologies and systems are adopted in this sought-after asset class. Increased demand and limited supply of large distribution centers, as well as smaller fulfillment centers located in urban and suburban areas, have resulted in significant investment in automation and other technologies to improve operational efficiency and productivity in these buildings.

The supply chain is also becoming increasingly interwoven within the everyday life of cities, with customer demand for ever-shorter delivery times, rising land and labor costs, and the increasing complexity of last-mile delivery. We look at some interesting concepts and companies that are changing how we think about warehouses and industrial real estate, logistics systems and the overall built environment.

Warehouse vending machines

More than 4 million commercial robots will be installed in 50,000 warehouses

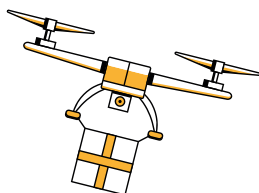
by 2025, up from about 4,000 robotic warehouses in 2018. In the future, automated storage and retrieval systems (ASRS) – computer-controlled systems that automatically place and retrieve items from storage locations – and independent robots will become increasingly integrated with each other. Dematic's ASRS, for example, manages inventory of full pallets alongside independent robots that pick products for customers. Firms like Ocado Technology and Berkshire Grey combine the use of AI, computer vision, machine

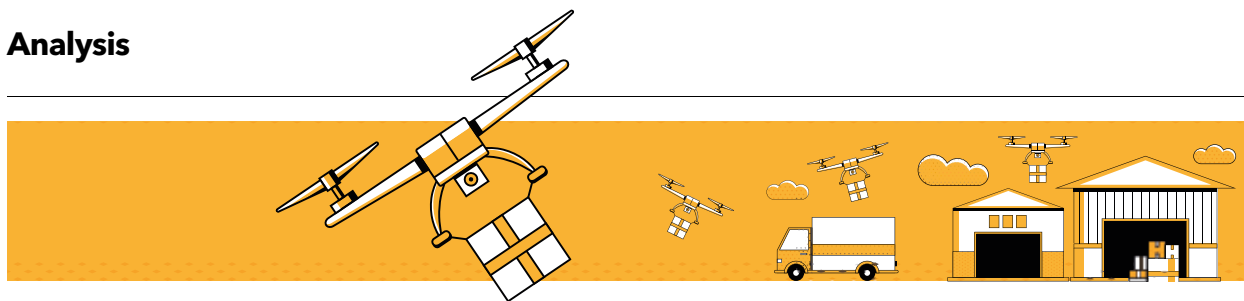
learning and advanced sensing to manage their pick, pack and sort systems.

In parallel with ASRS, robotic carts like those from Fetch, Otto, Canvas (recently acquired by Amazon) and 6 River Systems (acquired by Shopify) use lasers, embedded floor sensors and machine vision to navigate warehouses and also enable social distancing by allowing workers to reduce direct contact with one another in the time of covid-19. Boston Dynamics' Handle robots don't just shuttle goods, but use machine vision to identify and locate boxes, unload trucks, palletize and depalletize, high and low – all autonomously.

Even forklifts, which were invented in the early 20th century, are becoming more automated. Using lasers, image recognition and locational sensors, they can measure distances, map facilities, store data and navigate based on their position relative to the contours of the warehouse floor – walls, racks and other machinery. And soon, robotic forklifts will have the ability to recognize the state of the loading dock, such as the presence of a trailer and the dock's position, as well as the trailer's

“Autonomous vehicles will optimize a warehouse's operational footprint”





destination or origin, to connect goods with ASRS or specific inbound and outbound vehicles.

Do these increasingly intelligent robots and flexible ASRS systems mean that future warehouses will be autonomous ‘dark boxes,’ operating with minimal human intervention? A recent report from NAIOP, the commercial real estate development association, suggests that inflow of goods from the receiving dock may remain fairly normal, but when the pallets are automatically and autonomously unloaded, unbundled, sorted and racked, and items are then repackaged to go out as an order, warehouses could resemble a giant vending machine.

Asset class convergence

The rapid growth of automated storage and retrieval technologies and systems enables real estate owners, operators and developers to re-think traditional real estate classes and their uses, as mounting demand for warehouse and fulfillment space and the shortage of usable space strain the distribution system. Although there were 1,200 new logistics properties under construction in the US in Q4 2020, demand can only be fully met by updating existing stock and innovating them for alternative uses.

According to research by Professor William Wheaton of the MIT Center for Real Estate, automation is perfectly suited to fit into existing structures – and at smaller space utilization rates than prior industries required. Attabotics, for example, makes automated fulfillment systems small enough to fit inside an average-size retail store, and are currently deployed in the US in spaces from 350 square feet up to 61,000 square feet. Fabric, a micro-fulfillment start-up, provides modular storage and retrieval

systems that promise to “deploy to any parameter.” One site in Tel Aviv is located underground in an underutilized parking garage with 11-foot ceilings.

In the relentless push to be closer to the customer, an emerging network of micro-distribution sites are repurposing a variety of unconventional spaces. As landlords deal with falling office occupancy rates, start-up Ohi operates last-touch micro-warehouses in class-B office buildings, with sizes ranging from a few hundred to a few thousand square feet in 80 cities across the US. And instead of displaying items for passing customers, some vacant storefronts are becoming storerooms and delivery depots. Another start-up, Bond, is expanding its network of micro-warehouses for last-mile delivery. Typically between 600 and 1,000 square feet, these spaces are most often at street level, with a storefront accessible by bikes, scooters and local delivery crews.

Fully autonomous distribution

While much of the media’s attention is on driverless passenger cars, autonomous vehicle technology has applications throughout the logistics chain. Rolls-Royce and ABB Marine, for example, are experimenting with unmanned container ships, while the Association of American Railroads is running trials of driverless freight trains. Driverless technology is also being successfully applied to line hauling, with trials of trucks ‘platooning’ a string of autonomous semis, being conducted by manufacturers such as Daimler, Scania, DAF, Iveco, MAN and Volvo.

These efforts are mostly confined to the highway, but progress has been made allowing tractor trailers to safely navigate hub-to-hub and even dock-to-dock. Once these long-haul vehicles arrive at the warehouse, autonomous

technology in the docking yard will take over. Outrider, a start-up focused exclusively on autonomous yard operations for logistics hubs, has raised \$118 million to develop its system of autonomous electric yard trucks that efficiently and safely manage yard traffic, and the dock interface.

When goods leave the warehouse, the delivery fleet will also be autonomous. Waymo is designing a self-driving Ram delivery van with Stellantis (formerly Fiat Chrysler Automotive) and Walmart is partnering with Ford on autonomous cargo vans. Even the ‘last block’ will be serviced autonomously. Delivery robots like Amazon’s Scout, Uber’s Serve Robotics and Tel-eRetail’s Pulse One deliver packages to the doorstep, while Mercedes Benz has partnered with Starship Technologies to develop Robovan, an integrated delivery van (likely autonomous in the future) that acts as a mothership for a swarm of Starship delivery bots, each making doorstep delivery.

Whether long-haul tractor trailer, yard truck, delivery van or bot, autonomous vehicles will optimize a warehouse’s operational footprint by reducing space required for navigation and maneuvering on the site and allowing 24/7 activity.

Conclusion

Even though some of the technologies and concepts discussed above may still be a while away from widespread adoption, the potential changes that new technologies can provide the industry are vast – from more efficient operating systems, to faster delivery times, to the repurposing of underutilized space across our cities. All will enable increased throughput and help address current supply chain issues being felt throughout the global economy. ■

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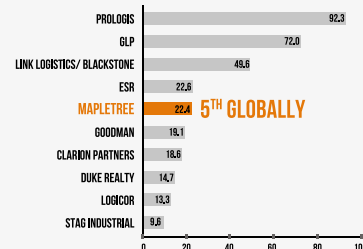


POLAND

>400
ASSETS

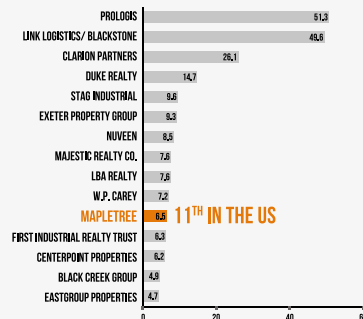
GLOBAL LOGISTICS REAL ESTATE SPACE UNDER MANAGEMENT (MILLION SQM)

TOP 5 GLOBALLY^{1,2}



US LOGISTICS REAL ESTATE SPACE UNDER MANAGEMENT (MILLION SQM)

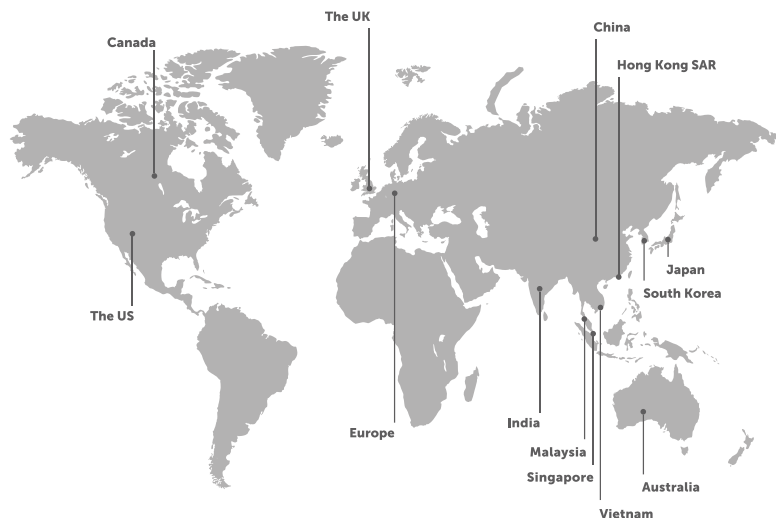
TOP 11 IN THE US^{2,3}



1. Logistics space under management for Link Logistics/ Blackstone only includes US-based operations since global data is not available.
2. Information adapted from respective company's publicly disclosed material (if available), Green Street's U.S. Industrial Outlook (Jan 2022) and Green Street's Pan-European U.S. Industrial Outlook (Jan 2022).
3. Sqm shown are for US operating portfolios.

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KEYNOTE INTERVIEW

Versatile strategy critical to deployment in US logistics



Having a flexible deployment strategy and an enhanced focus on operations and asset management helps investors navigate an increasingly competitive market, say GLP Capital Partners' Adam Berns and Steve Crowe

In the fall of 2019, specialist logistics manager GLP sold its first three US funds to Blackstone for just under \$19 billion. On the back of the deal, the leadership team responsible for GLP's US business created GLP Capital Partners, known as GCP. In July 2021, GCP held a final close for GLP Capital Partners IV (GCP IV), the largest-ever closed-end discretionary fund focused on North American logistics real estate, with over \$2.3 billion in equity commitments.

Senior managing director Steve Crowe and chief investment officer Adam Berns tell *PERE* how GCP is responding to the challenge of deploying

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a large pot of capital in a sector that is currently garnering enormous interest, as well as how the company is identifying the strategic approaches most likely to generate strong returns in the year ahead.

Q How are secular tailwinds impacting investor sentiment towards logistics real estate?

Adam Berns: The combination of resilience and growth potential that

logistics real estate demonstrates right now is quite rare. It's an investment opportunity that shows both strong secular trends, which help mitigate the potential impact of broader economic cycles, and high growth. That is what investors are lining up behind. There is potential for the sector to have a Goldilocks moment.

Logistics assets help form the backbone of the infrastructure required for a world in which expenditure increasingly flows through digital channels. Properties located near dense population and consumption centers are often irreplaceable from a tenant's perspective.

In 2022, we will approach 50 consecutive quarters of positive net absorption in the US. Despite record levels of demand, supply continues to lag, and in top markets is not meaningfully higher than long-term averages. We are experiencing double-digit annual rent growth in many markets, with projections that the next few years may see higher annual rent growth than we have averaged over the past five. This may result in even greater capital allocation to the sector.

A fundamental redefining of core asset classes is underway, with logistics now demonstrating the characteristics that long-term investors once sought in prime CBD offices or high-street retail. Today's questions are less about the attractiveness or strength of logistics real estate, but how investors can be ahead of the curve in an increasingly competitive environment.

Q What strategic approach is best suited to deploy capital in what is currently a very hot market?

AB: In a market that moves quickly and attracts a lot of competition, investment versatility is critical. Having a single deployment strategy, or even two or three strategies, is a competitive disadvantage when there is abundant capital looking for opportunities across the entire property lifecycle and risk-return spectrum.

One of GCP's strengths is our ability to find and execute attractive investments of any size, from development to core, in single assets or portfolios, and be active in all major markets across the country. We've built and positioned our team this way because we believe it's an approach that is effective over longer periods of time, and is not just based on what the investment landscape looks like at any one moment.

A strategy that is limited to a single stage in the property lifecycle – only development, for example – or is strictly defined by transaction size or geography, will naturally exclude attractive

opportunities that fall outside these narrow parameters, particularly in a fast-moving market and with a multi-year investment horizon.

A strategy that is narrowly focused may be effective for the next six months, but to be effective three years from now requires more adaptability. We are constantly looking for relative pricing dislocations and, to capture these, a manager needs to be versatile enough to evolve as the market inevitably evolves, as well.

Q GCP has a fully integrated logistics real estate operating platform, Modlo. How does that enhance your investment strategy?

Steve Crowe: Vertical integration is another critical factor in being versatile. We do everything from development to buying stabilized assets because we have the capabilities in-house to execute across a broad range of business plans. Having internal experts for

leasing, construction, property management and operations generates data and insights that can influence our investment approach.

Our operational expertise and close customer relationships give us a deep understanding of those customers' requirements, which allows us to seize investment opportunities more quickly, with conviction and unique insight. On an ongoing basis, as an operator we can maintain greater control over the customer experience in our buildings, which supports retention. We also gain more detailed insight into customer demand and how customers think about competitive supply than we could glean from brokers' statistics alone.

We use these market observations and customer experiences to refine our investment approach within a particular market, or to extrapolate across other markets with similar characteristics. Meanwhile, our construction team stays close to suppliers of building materials to maintain enhanced visibility into

Market trends: Shifting dynamics in Seattle

"We really like the underpinnings of demand growth in Seattle: technology innovation, job and population growth, and it also has the fifth largest port system in North America," says Crowe. "Industrial vacancy stands at less than 5 percent in a land-constrained market where rents are projected to grow 50 percent over the next five years."

Rising demand from larger customers motivated GCP to develop the largest speculative building in the market. Shortly after completion, a major e-commerce user approached GCP to lease the entire 628,000-square-foot facility, located near the Port of Tacoma, for a 10-year term.



New product on the block: helping tenants serve a dense consumption center by Puget Sound

price changes or supply chain disruptions that could impact development timelines or capital expenditure costs.

Q How do you use your platform to meet customers' needs and demands?

SC: We aim to acquire assets that cater to the deepest pools of customer demand within each market. To do this, it is important that we understand how customers use their facilities and the location and building attributes that are most critical to their operations. While there are many different uses, a comparison between bulk distribution and infill or last-mile facilities highlights some of the key considerations.

At one end of the spectrum, bulk distribution facilities ship and receive goods over a wide area, often distributing to a wide geographic area as the next step in the supply chain.

Because of the large service area, customers seek locations that can reach multiple markets or large population centers within a day's drive time. Location decisions for these facilities are often driven by proximity to major transportation infrastructure, such as ports, intermodal facilities and key highway nodes.

Meanwhile, last-mile operations – the final step in the supply chain – are focused on quick, efficient delivery to consumers, so they require infill locations close to areas of high population density.

The building requirements for the two different types of operations also look very different. In bulk distribution areas, there tends to be more available land, relatively speaking, so buildings are newer and bigger, with modern features like high clear heights, large truck courts and more dock doors to facilitate efficient storage and higher throughput distribution. Proximity to labor and parking for employees have become more important for these assets as warehouse operations get more labor intensive.

For last-mile facilities, location considerations are paramount. The availability of buildings is limited in these infill, supply-constrained locations. Land is scarce and customers must compete with other real estate uses. Therefore, these facilities tend to be older and customers make do with lower clear heights and fewer of the modern building features associated with newer bulk product as a trade-off to prioritize proximity to consumers. As demand drivers and customer requirements can vary widely, an in-depth understanding of these factors is critical to identifying

“As an operator we can maintain greater control over the customer experience in our buildings, which supports retention”

STEVE CROWE

attractive investment opportunities in each market.

Another example of how we utilize feedback from customers was our creation of a comprehensive, flexible, vacant space preparation plan. Customers are now moving with much greater urgency than they did in the past, as they respond to the rapidly evolving dynamics of modern supply chains.

Bringing vacant space onto the market faster enables us to support customers with near-term requirements, allowing them to take occupancy more quickly, and can provide a competitive advantage when trying to secure a leasing deal.

Q Where do you see the biggest opportunity in 2022?

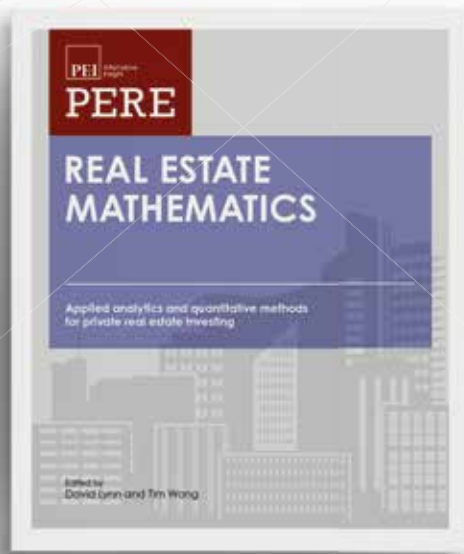
AB: It is easy to be lured into thinking you're on to something in a sector that has long-term tailwinds and extreme supply-demand imbalances. The underlying real estate fundamentals will change in markets over time, and the differentiation between the various strategies being pursued today will become more evident.

We have made a concerted effort to concentrate our portfolio in coastal markets and high-growth, major logistics hubs, which we think present the most compelling risk-adjusted return prospects. In 2021, cap rates compressed by a greater magnitude in non-primary markets than in primary markets. As a result, the yield spread between the two is the tightest it has been in at least five years. But when the mid- to long-term growth prospects for these types of markets are taken into account, we believe the greater opportunity continues to be in higher-growth coastal and primary markets. This approach also aligns with our view of the macroeconomy.

In 2022, we may experience challenges around inflation and higher interest rates. In such an environment, opportunities with higher cashflow growth can mitigate the impact of potential increases in cap rates or higher borrowing costs. A strategy of general exposure to the sector that has worked in an environment with cap rate compression may not bring about such strong results going forward. Bond-like income streams without that growth potential tend to underperform in rising interest rate environments.

Asset management also becomes more important because it drives cash flow growth. There is an increasing need for greater precision in investors' strategic approach to the sector. When supply adjusts, or demand moderates, assets that cater to the deepest pools of tenant demand will have greater potential to generate higher returns. ■

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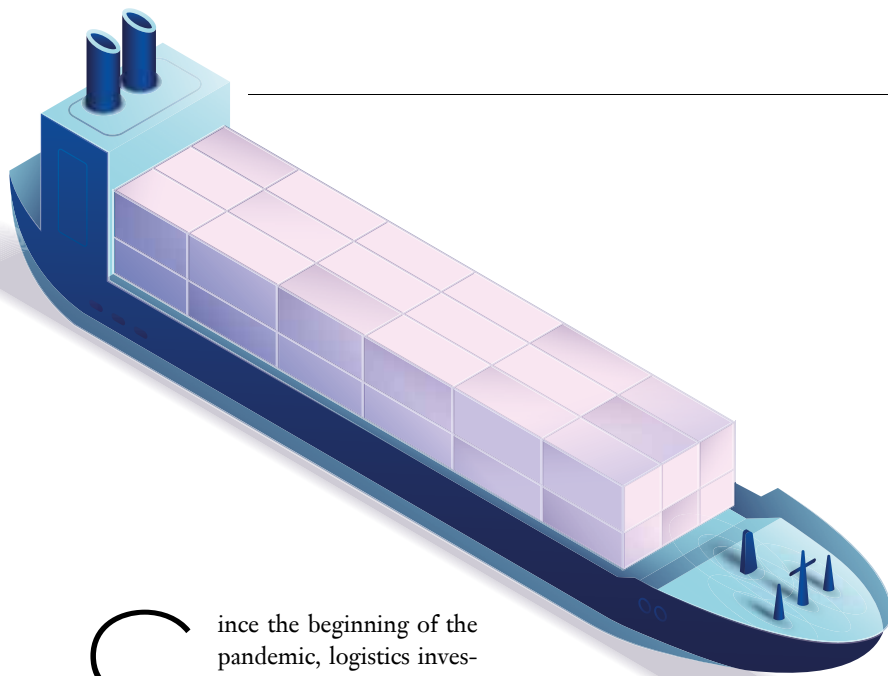
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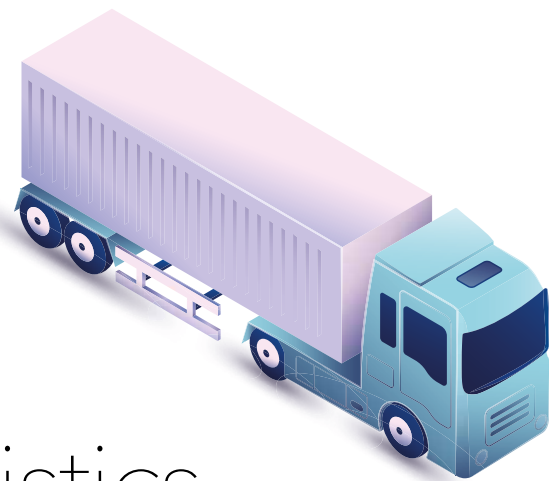


Since the beginning of the pandemic, logistics investors have witnessed how consumer demand has accelerated the growing appetite for e-commerce globally, which, in turn, has increased the need for logistics space. The covid-19 crisis, however, has also created an immediate challenge – global supply chain volatility.

For managers of logistics assets, the most direct impact of the pandemic is that it has further limited the supply of materials needed to build industrial developments. This is occurring at a time when managers are already facing competition from other developers that are also looking to build logistics facilities.

In the US, the sector's construction pipeline has reached a record level. However, advisory firm Cushman & Wakefield says that the recent commodity shortages and increased pricing going forward could slow real estate developers, potentially driving down vacancy rates even further and providing a further tailwind for existing asset values.

In Europe, industrial property investors and developers are facing difficulties in procuring materials such as steel, concrete and timber to build warehouses, as they struggle to respond to the increasing demand for logistics space amid permit constraints and growing competition. An added hurdle in 2022 is going to be the availability



Logistics shifts from 'just in time' to 'just in case'

*The ongoing supply chain crisis is slowing new supply of warehouses, while occupiers secure more industrial space to accommodate 'safety stock' and bring nearshoring higher up the agenda, **Alicia Villegas** reports*

“Supply-chain management companies are finding themselves with an overflow of goods that they need to store and are trying to secure space to store these goods as quickly as possible”

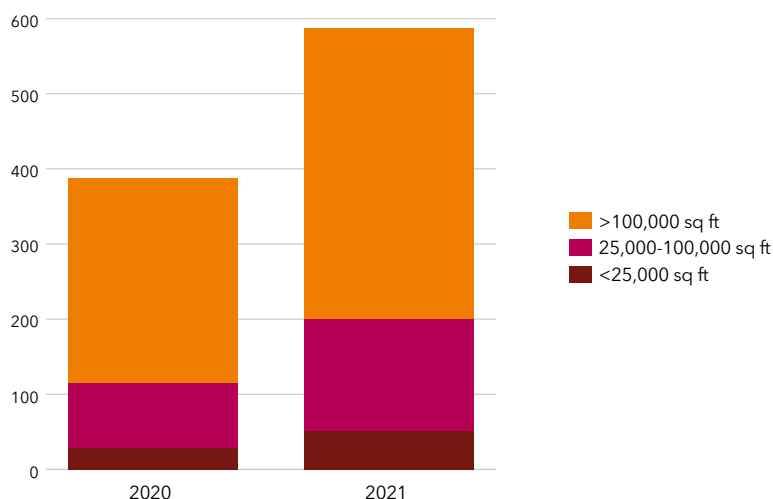
JOSÉ PELLICER
M&G Real Estate



of labor for construction activities, says Kevin Mofid, head of UK and EMEA logistics research at Savills.

“Supply [of new industrial assets in Europe] is already at record low levels and, at the moment, we simply cannot build warehouses fast enough,” says Mofid. “For developers, this is a problem because of the cost implications and construction delays. But for logistics investors, this is not a bad thing. It’s helping them increase the value of warehouses they own. Meanwhile,

Supply chain issues pushed US industrial leasing volume to record levels, reaching 587 million square feet from the beginning of January to the end of July 2021 (leasing volume, m sq ft)



Includes new leases and renewals signed from January 1 to July 31 of each year
Source: CBRE Research, 2021

occupiers are competing for the best buildings and paying higher rents or committing to a longer lease.”

Rental growth

Market participants agree that supply chain challenges brought on by covid-19 have been a major driver of rental growth, as occupiers are looking to increase inventory to avoid shortages and are consequently seeking more space. Thus, in a move to boost resiliency over efficiency, ‘just-in-time’ inventory management models that have been in place for decades – where the aim is to match production as closely as possible to consumer demand – are being replaced with a ‘just-in-case’ approach, which involves producing a surplus of goods and carrying larger inventories to prevent stocks from running out.

This shift to increase ‘safety stock’ began as soon as the pandemic created global supply chain volatility. According to consultancy CBRE, shipping volumes surged in 2020 as retailers and manufacturers rushed to replenish depleted inventories, resulting in greater demand for warehouse space.

Tom Olinger, chief financial officer of Prologis, noted at the logistics firm’s 2021 third-quarter earnings call that,

to offset supply chain disruptions, “old models for predicting demand and carrying inventory were basically thrown out the window.”

During the pandemic, a range of other issues – including adverse weather events, the blocking of the Suez Canal by container ship Ever Given and, more recently, a shortage of truck drivers – have exacerbated this trend. José Pellicer, head of investment strategy at M&G Real Estate, part of M&G’s £65 billion (\$86.1 billion; €76.5 billion) property investment business, explains: “Because of lockdowns, there’s been a massive increase in demand for goods, but we have seen labor shortages, particularly of truck drivers.

“So, despite higher demand, goods are produced and transported more slowly. Supply chain management companies are therefore finding themselves with an overflow of goods that they need to store and are trying to secure space to store these goods as quickly as possible.”

One of M&G’s tenants renewed a five-year lease for 25,000 square feet and took an additional 14,500 square feet on the same industrial estate on a 10-year lease because of the business’s requirement for more space in the UK.

“We have seen strong demand across the board, particularly for fulfillment centers – warehouses next to production facilities and next to cities,” Pellicer says.

Alistair Calvert, chief executive of Clarion Partners Europe, has seen “unprecedented” demand for logistics space. “Largely, the supply chain disruption is resulting in occupiers requiring more logistics space,” he says. “On the flip side, though, we have a couple of buildings that are running at a very small fraction of capacity because the underlying tenants’ contracts are either being mothballed or running very slowly due to part shortages – most notably among automotive-related tenants. This is the exception, though, and we expect it to be temporary.”

Demand outpaces supply

So far, global occupier demand for industrial real estate space continues to outpace supply, resulting in increasing rents. CBRE data shows industrial rents grew by 5.8 percent in the US in H1 2021, compared with 3.1 percent in EMEA and 0.8 percent in APAC.

Calvert, however, notes much higher levels of rental growth. “Look at some of the leases that we’ve signed in the last two years,” he says. “We have seen average increases of 25 percent in the Netherlands and 26 percent in Spain. That’s versus previous leases agreed just three or four years ago. So, broadly speaking, we’re seeing 20 percent to 30 percent uplifts on [new lettings] and renewals, even though they’ve already been subject to annual indexation. And you’re not seeing that in the data.

“When we’re negotiating for our speculative developments, we get very little resistance on rents from tenants – they may have other demands but are willing to pay higher rents.”

He points to ongoing e-commerce penetration as arguably the main driver

How tenants are coping with rising transportation costs

Occupiers of logistics assets have seen transportation expenses skyrocket following severe supply chain disruption, rising energy prices and higher labor costs

Last December, for instance, the average cost to ship a 40-foot container was 238 percent higher than the previous year, according to shipping consultancy Drewry’s World Container Index. Tenants are also dealing with warehouse rent increases, but the impact of transportation cost rises is much greater.

According to consultancy CBRE, transportation costs typically account for half of an occupier’s total logistics spend but can easily rise to 70 percent – while fixed facility costs, including real estate, account for only 3 percent to 6 percent. “It takes roughly an 8 percent increase in fixed facility costs to equal the impact of just a 1 percent increase in transportation costs,” Joe Dunlap, managing director of CBRE Supply Chain Advisory, said in a report released in September 2021.

Thus, tenants hurried to leased warehouse space last year to hold more inventory and mitigate transportation costs, which were growing at a much faster pace than lease rates. In the US, industrial leasing volume, including renewals, reached a record 587 million square feet between January and July, up by 52 percent from the same period in 2020. Given robust demand and national vacancy rates of 4 percent, CBRE in September 2021 reported a 9.7 percent increase in average rents in the US since August 2020.

Rising transportation costs will continue to drive industrial demand for the foreseeable future, leading to continued rental rate growth, strong leasing volume and low vacancies.



of this rental growth, with supply chain disruption another contributing factor.

Beyond ‘safety stock’ strategies and the increase of inventory levels, tenants can insulate themselves from future supply chain disruption by nearshoring

or reshoring industrial facilities. This, in turn, could create a ripple effect for warehouse demand. Although this trend is still incipient, some manufacturers are seeking to bring their supply chains closer to home in the wake of

the covid-19 disruption. According to a survey from the Institute for Supply Management, based primarily on US-based respondents, 20 percent of firms were planning or had already begun to reshore or nearshore some operations after the first months of the pandemic.

Savills' Mofid thinks that, so far, nearshoring is more talk than action. "It takes a very long time to make this type of change – moving your manufacturing from Asia to Europe. It doesn't happen quickly," he says. "But this is something that we expect to happen: people are much more interested in supply chain resilience now. If it does happen, we think that markets in Eastern Europe are going to benefit more than Western Europe, as they have more land, cheaper rents, cheaper land values and cheaper wages."

Adrian Karczewicz, head of divestments at Skanska's commercial development unit in Central and Eastern Europe, agrees: "Many manufacturers with a European presence are looking to nearshore their supply chain and evaluate selected countries in Eastern Europe, such as Poland."

Single market advantage

Despite higher wages than in traditional offshore locations, Karczewicz notes that the best advantage CEE countries have over other destinations is EU membership. This gives access to one of the largest markets in the world with minimal administrative burdens and no tariffs.

"Moving business processes to countries close to the main location of the company or to its clients can reduce costs without some of offshoring's problems, such as time differences and cultural differences," he says. "Nearshoring in manufacturing can also lower transport costs and shorten delivery times."

One of the challenges for Europe's manufacturers looking to nearshore is

"If rental levels continue to rise at the pace they have been, manufacturing occupiers in particular may consider whether it is more prudent to own the freeholds of their strategically important buildings, rather than to lease them and have more uncertainty regarding future costs"

KEVIN MOFID
Savills

the shortage of available logistics space, which could place additional upward pressure on rents. There could also be a risk of increasing wages. Mofid argues that, given the potential higher expenses linked to nearshoring, this could push manufacturers to own the buildings themselves, rather than lease them from investors and developers.

"Manufacturing buildings often have highly capital-intensive fit-outs," he says. "If rental levels continue to rise at the pace they have been, manufacturing occupiers in particular may consider whether it is more prudent to own the freeholds of their strategically important buildings, rather than to lease them and have more uncertainty regarding future costs."

An opportunity to build and sell the new assets required on the back of nearshoring is also limited. "Very few

landlords have land plots for sale at the moment, so I don't think this presents an opportunity for investors in the short term," Mofid adds. "As time passes, however, owner-occupiers may consider whether they wish to enter into a sale-and-leaseback arrangement with an investor."

Regardless of whether these speculations about nearshoring become reality – and regardless of how long supply chain turbulence lasts – industry sources agree that current market fundamentals remain strong and will continue to fuel rental increases and investor demand.

"Supply chain disruption is going to last probably another 18 to 24 months," says Clarion's Calvert. "This will put temporary pressure on the logistics space."

He adds that a much bigger effect on demand for logistics, both from occupiers and investors, will be the "forever shift" to e-commerce: "While we don't assume there's going to be further yield compression, we still think that logistics will be a relative outperformer for quite a long time yet, given the rental growth that we're seeing and expecting."

M&G's Pellicer agrees that the global e-commerce boom is the "number one" tailwind for logistics, followed by supply chain disruptions and the increased number of institutional investors turning to logistics to diversify portfolios away from retail and, to a certain extent, offices.

Although he believes logistics is well placed to be a "winner" asset class, he notes the threat of increasing values and higher rents while new supply of industrial assets goes up: "There might be a cyclical downturn at some point, but certainly while there is a pandemic and while real estate investors are thinking about their portfolios for the future, the industrial sector is on the buy list for many people." ■

EXPERT COMMENTARY

*Logistics markets around the world have different characteristics and development opportunities, finds **Rosemary Feenan**, executive vice-president, global research at QuadReal Property Group*



Same drivers, different speeds

The reality of Sun Tzu's well-known maxim, "the line between disorder and order lies in logistics," has persisted as a truth over the centuries. While the original context was military, the principle applies as a potent reminder that in the current race for logistics space, discipline is essential.

When QuadReal was formed in 2016, the logistics sector in many countries was already entering what was to become a sharp growth curve. MSCI estimates that the value of the global industrial market has nearly doubled over the past five years, while the overall share of investment in the sector grew from approximately 10 percent of total volumes a decade ago to 23

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percent today. CBRE further forecasts that global demand figures will require another 1.5 billion square feet of space by 2025.

QuadReal's conviction to logistics real estate remains high, reflecting the sector's role as a crucial support to distribution as a core urban service. To date, we have constructed a \$9.6 billion industrial portfolio that comprises over 100 million square feet, with 391 assets in 16 countries. As we continue to acquire and develop the portfolio, our focus is not only on understanding

the dynamics of demand, but on the regulations, policies, design and operational specifics of each market as they respond to the need for logistics space.

A common thread across all markets is the creation of facilities that respond to the e-commerce creed of speed, convenience and choice. While new formats of distribution space are emerging, big box and last mile remain the axial asset styles of the mix. Mapping a market's position on an evolution curve, as defined by style of facility and the pace of change across key markets, gives a sound basis for creating a forward view of opportunity.

The accompanying table graphic summarizes QuadReal's on-the-ground

Characteristics of selected global logistics markets

Market	Character/ evolution level	Metro population/ density (sq km)	Country e-commerce % (2025F)	Vacancy % (metro)	Multi-level presence (low to high)	Typical site coverage (%)	Typical lease length (years)
London	Highly mature	11.1m/6,400	33	3.5	Medium	45-55	10-20
Paris	Enhancing	11.0m/3,900	19	5.0	Low	35-50	6-12
Berlin	Advancing	4.0m/2,944	21	3.7	Low	50-60	5-10
Los Angeles/Inland Empire	Highly mature	15.5m/2,400	26	0.8	Low	30-50	3-10
New York/New Jersey	Highly mature	20.9m/1,700	26	2.1	Medium	30-50	3-10
Toronto	Advancing	7.0m/3,000	13	0.9	Medium	37-50	10-plus
Shanghai	Accelerating	22.1m/5,400	50	4.4	High	55-65	3
Tokyo	Mature	39.1m/4,800	14	2.4	High	45-60	3-5
Sydney	Advancing	4.6m/2,100	20	0.4	Low	45-55	5

Sources: QuadReal, Oxford Economics, US BEA, Demographia, eMarketer, Euromonitor, Forrester, CBRE, CoStar, JLL

experience, and our perspective on the state of play in a selection of cities and their markets around the globe. What emerges are different levels of evolution regarding site-specific elements as well as the growth of e-commerce as the primary driver of demand.

Europe: Different pathways but the same destination

Jay Kwan, managing director, Europe describes QuadReal's mindset: "The successful provision of the 'box' has become an exercise in foresight, and in gauging the likely strength and impact of trends in different countries and cities. The variation across European countries in market preferences and processes can be surprisingly wide, but they are fundamentally rooted in the same primary demand drivers and challenges regarding e-commerce's need for space against land scarcity."

The evolution of big-box facilities in locations serving London, Paris and Berlin shows similarities in formats. For example, truck court depths average between 35 meters and 38 meters, and clear heights are relatively standard

at around 10 meters in Paris and Berlin, and around 12 meters in London. However, lease lengths in London and Berlin vary between five and 20 years, and in Paris are typically six or 12 years. As is already well documented, rents and yields are now reaching unprecedented levels.

When looking at last-mile logistics, formats vary even more as occupiers contend for very scarce land. In London, for example, land values in some submarkets are approaching residential values and rapid land attrition has resulted in a two to three times increase in land prices. Truck courts can also fall well below 30 meters and less than optimal floor plans become necessary, with clear heights below six to eight meters not uncommon. Last-mile facilities in Berlin tend to be more standardized with lower coverage ratios, higher clear heights and better parking provision.

As last-mile rents continue to grow, the potential of capturing ongoing rental growth through shorter lease lengths will give investors pause for thought.

Asia-Pacific: Fast-tracking to greater efficiency

The maturities of logistics markets across Asia, while at different levels now, are likely to further converge over the next five years, reflecting the demand for modern, automated facilities.

"Innovation and flexibility are a hallmark of many of these logistics markets. Multi-level has historically been a feature in Asia, but the markedly lower modern industrial stock per household compared to North America and Europe is a signal of the opportunity to come," says Peter Kim, managing director, Asia.

China is well known for its incredible pace of e-commerce adoption and is forecast to reach 50 percent of total retail sales by 2025. Big-box facilities for Tier 1 cities such as Greater Shanghai commonly see nine meter clear heights, 38 to 40 meter truck court depth, and shorter lease lengths around three years. Cap rates for stabilized industrial products continue to tighten in the market as land supply becomes limited in core locations.

Australia has been a late adopter of

e-commerce; however, online sales are expected to propel to 20 percent of total sales by 2025. Common product specifications in the market include 10 meter clear heights, 36 meter truck court depths and five-year lease lengths.

Further, the Tokyo market is no stranger to multi-story facilities, but with less than 10 percent of industrial stock considered modern, there remain opportunities for future upgrading. Industrial vacancy in Greater Tokyo stands at around 2 percent, also driven by the demands from e-commerce expansion. Grade A have typical clear heights of only five meters, truck court depths of 13 meters, and three- to five-year leases.

North America: Filling in and filling up?

Last year, the US saw some startling headlines with markets running out of space and record annual rent growth being common themes. US national vacancy hit a historic low of 4.1 percent in 2021, and consensus suggests further logistics demand requirements of approximately 330 million square feet through 2025, with national annual rent growth forecasts at circa 7 percent in 2022.

As many major US markets continue to struggle to meet record tenant demand, developers have shifted focus to second-tier markets, where there is significantly more availability of open land for development to capture the spillover.

Among the top markets in North America, we see some variances in the format of industrial spaces. For example, in the Inland Empire, Class A properties have on average 30 feet clear heights, 62 feet truck courts and five-year lease terms, whereas in the New York and Northern New Jersey markets, Class A properties have 35 feet clear heights, 48 feet truck courts and five-year average lease terms.

While the US has not traditionally embraced multi-level product, this wave of demand and lack of sites, and

“Mapping a market’s position on an evolution curve, as defined by style of facility and the pace of change across key markets, gives a sound basis for creating a forward view of opportunity”

higher land prices for urban last mile in particular, are opening up possibilities in some of the densest cities.

Jamie Weber, managing director, Americas, puts it thus: “In such tight and infill markets, the demand for quick commerce, paired with scarce product and high potential for rent growth, will drive a natural progression toward multi-level product; although such development in the US will initially be in a limited set of cities for more targeted user requirement, particularly e-commerce automation.”

Canadian markets such as Toronto have a challenging entitlement process and a marked land scarcity. “Toronto has more or less run out of land,” according to Rob Lauer, senior vice-president, industrial, east, Canada. “The debate in the GTA [Greater Toronto Area] is how far is too far when it comes to secondary locations?” With more than three-quarters of Toronto’s industrial inventory being constructed before 2000, modern urban logistics remains in huge demand. The lack of supply, combined with extremely

strong demand, has pushed Toronto’s industrial vacancy to one of the lowest globally, sitting at 0.9 percent. As one of North America’s fastest-growing metropolitan areas, the GTA’s industrial market will remain extremely tight.

A new wave of future readiness

Across geographies, changing consumer behaviors, smart new business models and improvements in delivery efficiencies are driving the next generation of logistics real estate. These trends are recasting value contours and use patterns in and around cities. As demand levels continue to grow, innovative land use, technology and a focus on energy efficiency are key pillars in the transition to a state of ‘future readiness.’

Full automation for now may be mainly the preserve of build-to-suit and longer lease projects, but the fast-tracking of semi-mobile robotic solutions is offering a step change in efficiency. The challenge of obsolescence, where estimates suggest up to 70 percent of US buildings have a pre-2000 completion, highlights both the magnitude of the industry’s task to fast-forward to future readiness, while also offering substantial modernization and redevelopment opportunities.

As urban planners everywhere grapple with complex land use trade-offs, the evolution of logistics real estate is teaching us much about the commercial and personal value of time. The city evolution curve is far from static; the next five years will see progress in select markets towards ‘cities 4.0,’ where integrated data platforms will help optimize the efficiency of each layer of infrastructure, opening up opportunities in location, formats and design.

At QuadReal, we act with discipline in this race for space. We leverage our research, our partners’ intelligence and the experience of our teams on the ground to identify the markets, the cities, the locations and the assets which will deliver maximum efficiency and meet the challenges of an increasingly digital world. ■

Sub-Saharan Africa: From sheds to riches?



Guest comment by **Martin Schwarzburg**

Rapid urbanization is just one reason to look off the beaten path, says Brigg Macadam's emerging market banker and former ADIA real estate global COO

While global real estate investors have focused on e-commerce-driven logistics and data centers, major global manufacturing shifts underway elsewhere are likely to have more pronounced impacts on industrial property, logistics and warehouse markets.

Among these shifts is the movement of manufacturing facilities out of the main hubs in China, to Southeast Asia and other new markets such as Ghana, Kenya and other sub-Saharan African countries.

The main drivers of these shifts are a rearrangement of supply chains in the wake of the covid-19 pandemic, geopolitical uncertainty and rising labor costs in China, as well as freight container rate spikes. Improved market frameworks, shifts in industrial development policies, and demographic changes like rapid urbanization and population growth are creating significant pull effects for the re-evaluation of locations that may be off the beaten path.

The latter two components of demographics and urbanization, along with market liberalization, are making

the sub-Saharan Africa industrial and logistics markets increasingly attractive.

The median age of African countries is 18 years old, compared with 31 in Asia, 35 in the US and 42 in Europe. According to the UN, by 2050, more than 1.4 billion people (58 percent) in Africa will live in cities, up from 488 million (40 percent) in 2016.

In addition, the establishment of the African Continental Free Trade Agreement (AfCFTA), which came into force on January 1, 2021, is widely expected to provide a major boost to trade and economic integration across the continent by tearing down tariffs and simplifying cross-border procedures and costs within the continent.

The World Bank periodically scores and ranks countries in terms of their Logistics Performance Indicators, including customs procedures, infrastructure, international shipment efficiency, logistics competence, tracking, tracing and timeliness.

South Africa, as the highest-ranking African country, achieves a score of 3.38 (rank 33). Other major economies on the continent score significantly lower; for instance, Egypt at 2.82 (rank 67) and Nigeria at 2.53 (rank 110).

In order to improve that persistently

low performance, a combination of hard asset modernization (ports, roads and rail lines) and soft asset upgrades (track and trace technology, digitized warehouses and port operations) are necessary. Most importantly, significant improvements of inefficient procedural arrangements to move goods between countries and regions will be required.

A connected continent

AfCFTA's importance becomes even more obvious when considering Africa's highly fragmented market landscape. The African Development Bank has predicted that AfCFTA would lead to a 90 percent tariff reduction, leading to regional trade enhancements between 15 percent and 25 percent in the medium term. However, this may be a pipe dream as more than 70 percent of African countries have populations of fewer than 30 million people and, correspondingly, there are a large number of relatively small economies.

Drilling down further reveals that the majority of intra-regional trade currently occurs within the Southern African Development Community. Implementing AfCFTA across the greater continent will take time, as its

implementation and integration in national law and regulations will be the real driver for countries to harness its benefits. However, there is significant economic potential among trading partners and thus a high probability of rapid implementation.

So, does this translate into logistics opportunities for private real estate capital providers? It depends. Africa's urban population is set to almost triple over the next 30 years to 1.4 billion people, with most of the growth occurring in sub-Saharan Africa.

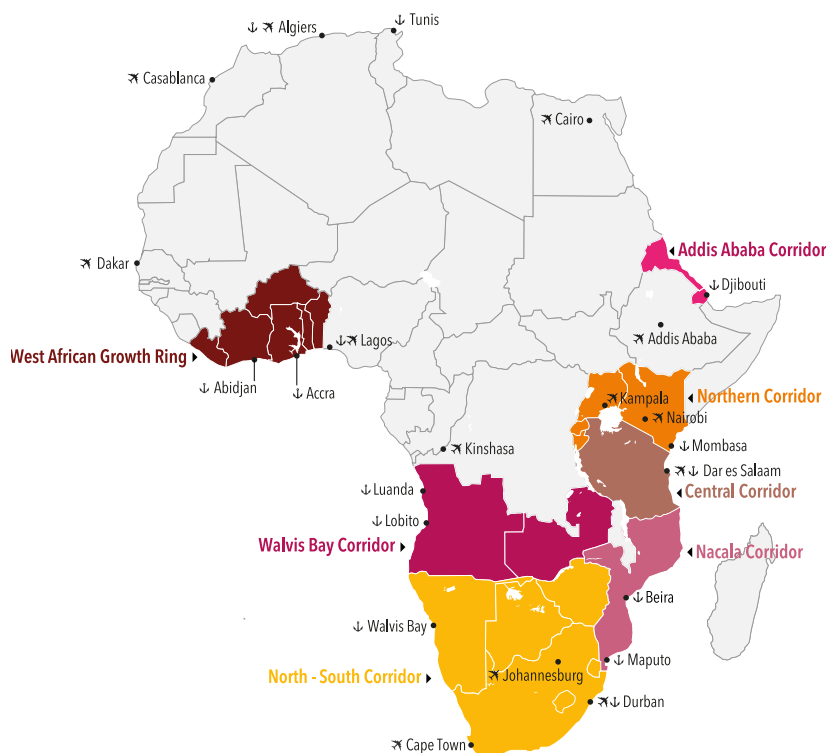
As demographic growth and urbanization drive productivity gains, manufacturing and innovation clusters are likely to emerge in megacities like Kinshasa, Lagos, Dar es Salaam, Luanda and Johannesburg. Johannesburg is likely to remain a key logistics submarket.

In addition, wealth and spending power expansions across a number of second-tier cities are expected to result in retail-driven logistics demand. According to research provider Euromonitor, cities including Nairobi, Abuja and Douala are expected to experience consumer expenditure growth between 130 percent and 200 percent by 2030, an additional total consumer expenditure between \$5 billion and \$18 billion.

In terms of the anticipated manufacturing growth driven by AfCFTA-induced regional trade and the manufacturing relocation opportunity discussed above, a helpful starting point is to consider existing regional industrial clusters. Sea-freight for both (intra-) African regional and global export trade is typically anchored by major ports accessible by rail. It is imperative for logistics investors to conduct in-depth connectivity, efficiency and risk analyses of related port and rail infrastructure, since there are often only limited transport alternatives available.

Important data points include the digitization drive for Nigerian ports, as well as significant M&A activity like the CDC Group's recent joint venture

Africa's industrial corridors



Source: Knight Frank

with DP World to operate a key port portfolio in Northern and sub-Saharan Africa.

Apart from transport links, electricity availability and data connectivity are critical elements to keep in mind when evaluating potential acquisitions as well as, given limited land supply in most urban markets, development sites for greenfield investments.

Prime rents and yield expectations

Space requirements are on the rise across most of sub-Saharan Africa, with an overall 13 percent year-on-year increase, most of it driven by agriculture, fast-moving consumer goods and manufacturing occupiers.

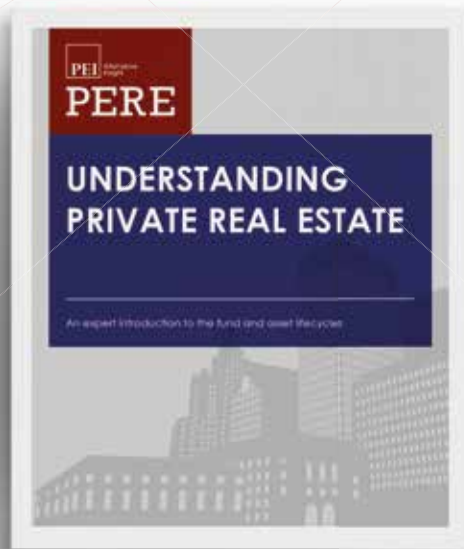
Prime rents vary widely, partially reflecting market adjustments, developer activity and core economic drivers. Yield expectations around the 10 percent mark are realistic, with some undersupplied sub-markets like

Libreville experiencing yield spikes of up to 15 percent.

Partnering with a reliable developer and/or operator on the ground is key to approaching this market, as is a realistic timeframe. As in the case of most other real estate investments across the continent, patient and flexible capital providers unencumbered by fund lifecycles stand the best chances of success. Given the often-patchy data available, creative demand analysis involving grassroots techniques can provide valuable additional insights to help de-risk logistics investments in the region.

Last but not least, there are ESG considerations, which in most cases exceed the potential typically seen in developed markets. As such, the sub-Saharan African logistics space provides almost unlimited potential for investors looking to marry healthy returns while contributing to incredibly young, dynamic and resilient societies. ■

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KEYNOTE INTERVIEW

Getting closer to the customer



*Finding last-hour efficiencies in the handover of goods to the consumer begins with defining the population to be served, says Logistics Property Company's CEO **James Martell***

To meet the demand of e-commerce growth since the onset of the covid-19 pandemic, tenants are increasingly looking for spaces that will reduce delivery time to the customer. Having the right asset in the right location could yield significant cost savings on transportation, and mapping travel routes could mean that a repurpose is more desirable than a new build, as well as lowering carbon emissions.

CEO James Martell discusses 'last-hour' spaces the firm wants to occupy and how the specialist developer Logistics Property Company, LLC (LPC) is managing its tenant and environmental risks in a booming sector.

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Q LPC doesn't use the term 'last mile.' Why is that?

The trouble we have with the concept of 'last mile' is trying to geographically define where that is. Where is that last mile? We like to think of it as 'last hour.' Products start at a manufacturer and need to end up in the consumer's hands. Getting that product to the last touch – the handoff to the consumer – is the goal of the e-commerce market and that is usually within a last-hour radius of the consumer.

The critical issue for e-commerce delivery systems is defining a geographic area that has a population that they equate to a certain number of deliveries or boxes. They need to navigate traffic issues and natural boundaries associated with last-hour delivery, and it's not always as clear-cut as one might think. To take an extreme example, if you have a logistics facility on a major street, you sometimes can't get to the other side of the street or even a block away without driving miles around due to natural barriers or the way roads are set up. So, your last-hour location may be a block away, but you have to traverse miles to get there because you

have natural boundaries or traffic issues you have to avoid.

It's not a black-and-white discussion. It takes monitoring transportation and the speed at which you can deliver a product from a location that's most efficient. Sometimes, most efficient does not mean closest. It may not be a last hour, it may be a block; but we still have to think it all through.

Q How do you meet increased e-commerce demands when both land prices and consumer demand have exploded in and around cities?

Certainly, the volume of deliveries has increased dramatically. It's not just Amazon; it's FedEx, it's DHL and other delivery companies. There's an e-commerce facility in Chicago that's set up with a drive-through for Uber cars – the drivers open their doors up, the facility loads them up with packages, and away they go.

In e-commerce, everything starts with an algorithm that defines the population, and then you look at how transportation can best serve that



Master plan: Southport Logistics Park, 3.5 million square feet of Class A industrial space in Wilmer, Texas

population. In some instances, truckers and/or delivery drivers operate from 8pm to 1am to avoid peak hours. That both helps traffic in the local area and lets delivery drivers do two or three runs in the same amount of time it would take them to do one otherwise.

Since that's what many of our customers do, as a developer, we are doing the same thing – we are defining populations, and then asking how we can serve those populations. Sometimes you might deliver 10,000 packages to a single residential complex in a month. Do the math; having a logistics facility

right by a handful of those buildings would be very valuable and productive. We are trying to build one like that in downtown Chicago, at a location that sits between two major east-west routes off the Kennedy Expressway, with about a million people living within a very small radius.

Transportation is a huge cost for e-commerce. For every dollar spent, about 65 cents go to transportation. Rent is just 5 percent of costs. Even in areas where rent is high, the cost of transportation has risen along with rent. As a developer, giving companies a model that saves 10 percent on transportation is meaningful. Saving 10 percent on rent isn't as meaningful.

ESG considerations for last-hour spaces

The logistics sector can and will take steps to reduce carbon emissions and do its part to fight climate change. Making buildings closer to last hour will make jobs attractive to local labor and help rejuvenate neighborhoods. Reducing transportation by being closer to the customer reduces emissions dramatically. Building charging stations at Class A, modern logistics facilities to charge electric vehicles on-site can also help.

When tearing down a building, Martell says that LPC recycles the materials they can. Powering buildings via thermal and solar energy will help long-term operating costs. While there is an upfront cost to getting LEED or LEED-equivalent certifications, it is a cost they absorb because they value it. "We make up for that by showing investors that we are delivering a lower carbon footprint and meeting our goals – we provide our investors with a thorough audit of our ESG activities that measures the actual results to a pro forma. That's what makes us more competitive, as opposed to just cutting costs to meet the return expectations."

Q Given the scarcity of space in major US markets, how do you decide whether to repurpose older buildings or build from scratch?

Volatility in real estate is related to land. You can generally build the base buildings for industrial for the same price – maybe a little extra for earthquake and hurricane safety. But the cost of the land can range from \$3 to \$4 per square foot, to even \$100 per square foot. Some large plots of land in big cities may also have massive environmental issues, which will add to your redevelopment costs, your timeframe and zoning issues with the city.

Many places by LAX or the inner cities, for example, were old manufacturing centers. However, those

locations are so valuable to our customers that rent isn't a factor. They'll pay whatever you can reasonably charge, because it will save them so much on their delivery and transportation costs.

To decide, you have to look at the utility of a building – can you adjust it to make current demand? Can you add in enough parking, ceiling clearance, etc? The cost differential for repurpose vs new build is hard to peg; it's really a case-by-case basis. To build a new building is about \$75 to \$80 per square foot, but that doesn't include tearing down the old structures, if necessary. Repurposing can cost more than that.

However, some of these buildings are so environmentally contaminated that companies will give them to you for a dollar. Some of them will even give you the money to clean them up, because they want them off their books. Another advantage of industrial, as a developer, is that the sector's footprint is so big, there will always be someone who will take it – maybe a class C or class B tenant who doesn't need the ceiling clearance that an e-commerce user does. Even if you can't repurpose the building to the highest standards, it can still be very useful.

Q In your opinion, are there too many planning restrictions? Do governments and local authorities need to do more to incentivize developers and investors?

There have been all kinds of programs and incentives, a recent one being Opportunity Zones to bring developers into lower-income areas. However, the planning process does tend to be overbearing in most cases. Local governments expand their requirements to what they think adds value to their community. Some things are important, like storm water management and, of course, that needs to be structurally sound.

But now they're going into a lot of areas that are unnecessary. The process by which they go about reviewing

"We are defining populations, and then asking how we can serve those populations"

is sometimes also inconsistent, to the point that it comes down to the individual perspective of who's reviewing it and their interpretation of the code. Reviewers are adding requirements based on their interpretations of the code versus what the code actually says. Cities are interpreting and/or adding to their codes, and few understand or know how to interpret some of the new ones.

There are generally good ordinances in place, but they should be black and white and should not be left open for interpretation.

Q To what degree will rents continue to rise as the economy reopens?

The driver of rents is demand exceeding supply. If there continues to be demand for key logistics locations as there has been over the last three to five years, and we can't build them fast enough, so rents will go up. I'm expecting double-digit increases across major markets over the next two or three years, and in California up to 30 percent increases.

Increased rents are going to continue with the 10-year US Treasury rate getting closer to 2 percent. That will put some pressure on costs, but if demand continues, rents will go up. In California, for example, vacancy in the Inland Empire is less than 50bps.

Even if the general market slows,

industrial is the darling everybody wants a piece of. Covid-19 by itself expanded e-commerce demand in the first quarter [of 2020], at a rate accelerated by 10 years. Generations of people who would never have used e-commerce, like me, were forced to use it, are now comfortable with it, and won't go back.

I think we'll see a lot more manufacturers bypassing the distribution and retail market and going direct to the consumer, since that drops their costs dramatically. All that means booming business for industrial real estate.

Q Given how fast industrial has been growing, what are the potential downside risks in the medium to long term and how can they be mitigated?

What helps mediate exposure to industrial is the large denominator. With five-year leases on average, a 1.5 billion-square-foot market like Chicago would have 300 million square feet rolling over every year. So, there's an opportunity to deal with that large rollover annually to get exposure to a different kind of customer. We always see downturns as an opportunity to diversify and improve the quality of customers. That protects your downside. Based on what we see relative to all the drivers of industrial, I expect a solid three- to five-year run for the industrial market.

Our goal is to deliver the lowest cost of occupancy, not necessarily the lowest cost of rent, with lower operating costs by building a higher quality building and incentives. Having better long-term consistency in our revenue source and less rollover is better for us, even if the immediate return is lower. After all, the cost on re-leasing a building is expensive – advertising, commissions, vacancy costs. As our investors are long-term partners, we prefer to incentivize our customers to stay long-term by providing the lowest cost of occupancy so our rollover exposure is minimized. ■

Fast five: EMEA

Investors see the cost of inflation and climate change as the biggest issues for 2022

Our EMEA panel

Charlie Ferguson Davie

CIO,
Moorfield Group

Victor Massias

Head of
developments,
Valor Real Estate
Partners

Craig Maguire

Head of pan-
European logistics
and industrial,
BNP Paribas Real
Estate

Rahul Ghai

Managing
director and co-
head private real
estate Europe,
Partners Group

Stefan Wundrak

Head of
European
research,
Nuveen Real
Estate



Q How has the pandemic changed logistics in Europe?

CFD: There has been a marked increase in both tenant and investor demand, driven by increased online delivery requirements and changes to supply chain management to improve resilience. This has resulted in rents growing well ahead of inflation and yields falling substantially.

VM: Demand for e-commerce and ultra-last-mile delivery has surged due to the multiple lockdowns experienced across Europe, which have accelerated

changing consumer behavior – in particular demand for the even-quicker delivery of goods. Increased storage capacity and faster supply chain requirements have also considerably reinforced the appeal of the logistics sector.

CM: It is no secret that the rates of buying online due to the pandemic have increased dramatically. Volumes in relation to capital inflows to the sector have increased, as has tenant take-up. This drive to buying online was happening before the pandemic due to technological evolution and faster distribution channels. However, the pandemic has accelerated this process.

RG: The pandemic has accelerated changes in consumer behavior, and we think there are two related trends in this regard: further e-commerce growth due to changing consumption habits and the increasingly mobile labor force capable of remote working. The continued offline-to-online migration will result in occupiers refining their supply chains to ensure short delivery times and reduced transportation costs.

SW: Overall, the covid-19 pandemic has had very little impact on the logistics sector in Europe. The existing trends in favor of logistics before the impact of covid-19 have strengthened, with nearshoring, e-commerce, ESG criteria and warehouse robotics all driving growth in the sector. As a result, the sector has benefited from rental growth and yield compression.



Q Which market will see the most interest in 2022?

CFD: The UK is well set to attract further investor demand. The dynamics are very favorable, with very low levels of availability and limited speculative development. Tier 1 cities continue to be at the forefront of most investors' focus, but there is also likely to be interest in regional locations due to pricing and rental growth expectations.

VM: The most densely populated cities like London, Paris and Berlin are set to benefit the most from tenant demand and, consequently, rental growth. We are seeing investors increasingly keen to try and grow their exposure to these markets. The challenge is how granular they are, which means they require superior local knowledge and deep market connections that take a number of years to develop.

CM: The larger markets of UK, Germany and France performed very strongly in 2021 and will continue to see strong interest. Spain and Italy are seeing more interest as their e-commerce markets develop further, and the Netherlands is still seen as a core entry point into Europe. A theme for 2022 will be a focus on the last-mile or delivery point locations to improve customer service.

RG: Urban logistics facilities linked to e-commerce that facilitate the delivery of smaller and more fragmented orders with shorter delivery times stand to benefit the most. This is particularly true for markets that suffer from a structural undersupply of high-quality facilities. The opportunity to reduce operating costs via more efficient facilities within close proximity to key population centers should continue to support take-up of modern stock.

SW: The UK has seen an investment comeback after Brexit uncertainty ended. As a result, yields will fall and the gap to the eurozone will narrow, albeit not fully due to the higher financing costs in the UK. Meanwhile, France, Italy and Spain are on the cusp of strong e-commerce growth, which will drive demand for space and, consequently, push up rents, making them attractive markets for investors.

Q Which market is most unfairly overlooked?

CFD: There aren't many markets that are overlooked, but the disparity between London and the UK's other major regional cities can sometimes be excessive. There is additional yield on offer in Scotland because of additional concerns about independence, but the smaller universe of investors increases liquidity risk.

VM: There isn't one individual geography that isn't on investors' radars that should be, simply because of the amount of capital looking at the sector. However, most institutional investors keep focusing on sizable deals. The more granular, complex deals require more effort and a fully integrated platform, but also provide the most potential for value creation.

CM: I don't think any market is unfairly overlooked, given the parameters and market indicators. Each market has a certain level of maturity and population it serves.

RG: The UK and the Netherlands remain structurally undersupplied with respect to high-quality, modern

logistics facilities. We believe that both economies stand to benefit from increased online trade, given their established port presence and functionality as key hubs for shipping entering Europe. Given the cross-border nature of logistics, we also see high relative value in Poland due to lower labor and real estate costs.

SW: The Czech Republic is often lumped in with other Central and Eastern European countries. However, financing costs are as low as in Western Europe and logistics zoning is also as tight as those further west. That drives value and reduces volatility and, in contrast to the rest of Central and Eastern Europe, there is a domestic investment market as well.





Q Thinking about logistics, what concerns you most?

CFD: The weight of money chasing the sector has driven a substantial shift in yield. There will

come a point where rents will not grow as fast as predicted and the yield environment could change. This is most likely to be driven by a higher interest rate environment as a result of economic recovery and higher levels of inflation. Higher taxes could be targeted at the logistics sector and meeting net-zero carbon targets will also introduce additional costs.

VM: The unprecedented amount of capital chasing the sector has led to strong competition, which is driving up prices to unprecedented levels. We are also mindful of the impact of cost inflation on construction and the longer supply chain delays, which have an impact on the delivery of new developments. However, these pressures should ease over 2022.

CM: ESG is the big one. This is having an impact on design, location, external space, use of materials, etc. All these components need to work as part of the supply chain to ensure a common target is met. Cost inflation can be a concern.

RG: The broader macroeconomic rate environment. Yields have compressed materially and capital values for assets continue to grow to unprecedented levels. Cost pressures, whether through energy crises or other supply-side shocks, are creating challenges for the underlying occupier market. We need to be vigilant in underwriting rents from a serviceability standpoint. For us, it's not as simple as 'build it and they will come.' We need to pay much closer attention to the kind of tenants attached to leases and the proximity to their supply chain.

SW: The primary concern is that, at some point, structural strong demand growth will end. But determining when the market is saturated is extremely difficult. The second concern for investors is the low yields for tertiary locations and the old assets coming to the market will require significant capital expenditure as these will start to impact returns.

Q What will be the biggest change in logistics in 2022?

CFD: The very best-in-class assets will attract the most attention. Lower quality buildings that are not fit for the future, especially because of environmental requirements, will become less appealing.

VM: Reflecting demand from customers, local authorities, investors but also lenders, ensuring that both existing and new space is fit for purpose from a sustainability perspective will become standard practice for managers and developers. The ongoing shortage of available land will also result in more innovative construction methods.

CM: Possibly more pressure on land supply generally.

RG: Warehouse automation and robotics will likely have the most significant impact on logistics in the year ahead. We think that occupiers will increasingly start to forward-plan for facilities that can accommodate these technologies, and commitments might occur as early as 2022. Separately, we also see an increasing focus on ESG.

SW: From our perspective, one of the biggest challenges for investors will be navigating the inward yield shift as it runs out of road due to less ECB quantitative easing and rising financing costs as a result of inflation. This could be offset by more rental growth than in 2021. ■



KEYNOTE INTERVIEW

Soaring rents underline industrial's appeal



*Heightened tenant demand and limited supply mean the sector's golden age is far from over, say Ares Management Corporation's **Bill Benjamin** and **Dave Fazekas***

In July 2021, alternative investment manager Ares Management Corporation closed on the acquisition of Black Creek Group's US real estate investment advisory and distribution business, which had approximately \$13.7 billion of assets under management. Head of real estate Bill Benjamin says that the acquisition was complementary to Ares's existing opportunistic, value-add and debt real estate strategies in Europe and the US: "Black Creek's focus was on core and core-plus strategies, with mostly perpetual capital, including two non-traded REITs and various institutional fund vehicles."

Benjamin, and Ares CIO of industrial, Dave Fazekas, weigh the relative merits of the US and European logistics

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markets, and conclude that industrial will remain a "high-conviction bet" for investors on both sides of the Atlantic.

Q What supply-demand dynamics are driving industrial real estate markets?

Bill Benjamin: The fundamentals of industrial real estate in Europe and the US are impressive. Demand in the sector is driven by GDP growth and the economies of both regions are expanding. Consumer spending is picking up, with higher e-commerce and e-grocery

penetration driving a retail sales recovery. All of that boosts demand for industrial space, while supply cannot keep up because of planning and zoning constraints in markets with a high barrier to entry, coupled with rising construction costs.

Dave Fazekas: In the US, industrial vacancy stands at 3.5 percent nationally, the lowest level we have ever seen. Meanwhile, each of the first three quarters of 2021 saw record net absorption of industrial space. The level of demand has been incredible. On the supply side, obtaining entitlements to build remains difficult. Covid-19 has led to delays in the supply of construction materials, and over the last 18 months

we have seen the cost of materials increase. A new development used to take eight or nine months to complete, but that period has become substantially longer. This dynamic, combined with the heightened tenant demand we are seeing across markets, puts landlords in a very strong position to capture rental growth.

Q How do the European and US industrial markets measure up?

BB: Historically, economic growth has been higher in the US than in Europe. On the whole, the US is viewed as more tech-savvy and taxation levels are lower, so there is more private sector activity. And it is a very big market with a growing population, where the economic tailwinds are very strong.

In Europe, economic growth is generally around 1 percent lower than in the US. On the other hand, Europe has less existing industrial space per capita. In major markets such as the UK, Germany, Netherlands, France and southern Spain, occupancy also stands at around 96 percent, and research indicates that when the level is greater than 92 percent, the historical result is rental growth. While that growth is not at the double-digit level seen in the US, it is enough to constitute a strong buy signal for investors in almost every European market. The exception is Central and Eastern Europe – in Poland, Hungary and Romania, land is more plentiful and barriers to entry are lower, so supply and demand are roughly in balance.

DF: The coastal markets of the US are characterized by high population density and infill with proximity to ports. Those markets were always very supply-constrained, but sustained GDP growth, together with increased demand from e-commerce, which has been further accelerated by the pandemic, has driven vacancy down to less than 1 percent in some locations. In Southern California and New Jersey, for example, we have seen astounding

US market: Case study

High-barrier-to-entry speculative buildings preleased during construction

In 2020, at the onset of the covid-19 pandemic, Ares purchased 107 acres of land for the speculative development of two industrial facilities totaling 1.3 million square feet. “Both buildings were preleased prior to completion, which we believe demonstrates the intensity of demand in certain high-barrier-to-entry areas, particularly in top distribution markets in the US that provide access to top metropolitan statistical areas,” says Fazekas.

“As long as rental growth continues at the pace we are seeing now, there will still be strong capital demand for industrial real estate. While cap rates are compressed, the mark to market on rents due to rent growth has continued to grow as well”

DAVE FAZEKAS

rental growth relative to other locales.

Tenants have very few options, so occupiers are renewing their leases, while at the same time being subject to increased rents. We are also seeing rents increase in high-population growth markets, such as South Florida, Phoenix and Las Vegas, to name a few, where net migration and population growth is creating more demand for goods. For tenants, rent is still a comparatively small component of overall operational costs, at less than 10 percent. This is far less than they are spending on transport and labor, which have seen meaningful increases, so they should continue to be able to absorb increases in their property costs.

Q How are geopolitical and macroeconomic trends influencing the market?

BB: The combination of Brexit and the pandemic has made transporting goods from continental Europe to the UK substantially more difficult. As a result, businesses have had to reconfigure their supply chains and stock higher levels of inventory. Storing goods is expensive, and in the 1980s that prompted a powerful drive to establish ‘just-in-time’ arrangements.

However, that trend is being supplanted by ‘just in case.’ Firms do not want to be caught out, unable to meet their customers’ needs, which is driving demand in the UK. A combination of geopolitical tension and the pandemic has also impacted certainty of supply from the Far East, so there will be more emphasis on economic and business autonomy across Western markets, which will generate further demand for space.

DF: The trends are similar in the US. Retailers are reconfiguring their supply chains to deliver omnichannel solutions in addition to brick-and-mortar retail. We are seeing inventories swell because they are under pressure to deliver goods to their customers and retail locations in a timely manner. We are also starting to see a bit more onshoring and

nearshoring here, although that is at an early stage. So far, that is happening mainly in pharmaceutical manufacturing. But we are also starting to see other critical manufacturing operations, such as microchip production, return to the US.

Q How are investors securing opportunities in this highly competitive market?

BB: In Europe, we're seeing creative investors do programmatic joint ventures and forward funding developers' pipelines. The developer secures the land, planning permission and a guaranteed maximum price construction contract, with or without some level of preleasing. Together with the banks, the investor will forward fund projects to build up large-scale portfolios. In these situations, certainty of capital is a higher priority than cost of capital for the developer. Having a partner that can provide funds quickly helps them to secure deals.

Meanwhile, construction prices are high, so certainty of cost is important for an investor. That can be controlled to some extent by forward buying materials. And while material costs are going up, because industrial buildings are single-story boxes, it is possible to quantify those increases accurately or to put in enough contingency. For high-rise construction with lots of services and expensive finishes, there is a much greater risk of being impacted by rising prices. We also believe that if a seller knows that they can approach a potential purchaser and get a swift yes or no answer in a wholly or partially off-market deal, then that is a powerful calling card and potentially favors buyers that do a majority of deals off-market.

DF: In the US, investors that are vertically integrated on the development side not only have greater visibility over factors such as construction cost increases and potential delays to building schedules, but are also likely able



Key asset: an Ares distribution facility in Saarbrücken, Germany totaling 29,540 square meters

Europe market: Case study

Scarce logistics assets

Ares provided equity capital through an off-market exclusivity arrangement to fund the pipeline of a European developer, which resulted in the forward funding of 34 logistics assets across a number of European countries.

"Despite the scarcity of these types of logistics assets, we believe that our emphasis on long-term relationships was attractive to the developer," says Benjamin.

"Unanchored inflation seems to me like the biggest risk for many asset classes, not just real estate"

BILL BENJAMIN

to obtain desirable basis point spreads relative to current core cap rates with projects that lease prior to completion because tenants have so few options. It is hard to predict that cap rates will continue to compress, but we also thought that in 2015. As long as rental growth continues at the pace we are seeing now, there will still be strong capital demand for industrial real estate. While cap rates are compressed, the mark to market on rents due to rent growth has continued to grow as well.

Q What are the potential downside risks for industrial investors?

BB: The two dangers that can bring a real estate cycle to an end are overbuilding and overlending. On an absolute basis, industrial development has been growing in Europe and in the US. However, in Europe, there is less than a year's supply in all the major markets and, in the US, vacancy is also very low. We are not seeing instances of overlending as banks are at 60 percent LTV. If we get inflation, and it is good inflation because it is driven by GDP growth, we will see rents grow.

Therefore, even if yields soften a little, total returns should still be protected. The worrisome thing would be if you cannot pass that inflation on to tenants, and cap rates drift up because investors need to be compensated for the cost of their money. Unanchored inflation seems to me like the biggest risk for many asset classes, not just real estate. ■



It's a landlord's market

*Rampant demand and checks on supply are reshaping the dynamic between the owners of industrial space and their tenants. **Stuart Watson** reports*

Global logistics markets are seeing an unprecedented race for space. But construction has failed to keep pace with demand and vacancy rates have reached historic lows, especially in the most in-demand markets. Those two factors combined have given landlords the whip hand in negotiations, with the ability to drive ever-harder bargains for desperate tenants.

The drivers of demand are well attested: the return of consumption following the pandemic; supply chain challenges that have created bottlenecks for goods, driving the need to hold more inventory closer to customers and prompting onshoring of manufacturing operations; and the inexorable rise of e-commerce, with distribution networks adapting to provide ever more

“In some markets, rent is not an expression of land values, plus rising construction costs, plus yield. It is an expression of affordability”

JACK COX
CBRE

goods to customers, who are demanding ever-quicker service.

“Occupiers are knocking on our door and saying, ‘Please, we need space,’” observes Laurie Lagarde, head of EMEA logistics at CBRE Investment Management. “There is so much demand that we cannot find it for them. None of the big e-commerce and logistics operators know how to answer the demand from their customers and clients.”

In the hottest markets, close to ports and major cities, big owners of industrial space are virtually sold out. Ben Bannatyne, president of Prologis Europe, says: “Across our markets, our portfolio is something like 98 percent occupied. In Germany, it is completely occupied – so are the UK, the Netherlands and Sweden. These are numbers we have never seen before.”

Developers have found it difficult to step up construction activity to ease

the shortage, however. “It is more difficult to build now,” says Logan Smith, head of European logistics at investor-developer Hines. “Land prices are increasing. Costs are going up because building components are also more expensive. Permitting and planning cycles are becoming longer.”

Similar conditions apply in the US and in the developed markets of Asia-Pacific. “It is a landlord-favorable market the whole world over. The pandemic has amplified that, and vacancy is historically tight globally,” notes Jason Tolliver, Americas logistics and industrial investor lead at Cushman & Wakefield. “In the US, vacancy is below 5 percent overall, and in a lot of the major markets it is below 2 percent.”

Logistics occupiers face a “dizzying array of business challenges,” he adds. “Not only is the real estate market tight, most of [occupiers’] other costs are accelerating. They need to carry more stock in more locations to drive throughput, which is an increasingly expensive proposition. Shipping costs are through the roof, and supply chain disruptions and labor continue to be top of mind.”

Competitive weapons

Beset by such challenges, tenants simply cannot afford not to have the right facility, and that has led to a shift in their attitude to real estate costs, argues Jack Cox, head of EMEA industrial capital markets at CBRE.

“Access to market is such a differentiating factor that in the context of urban logistics, buildings in the right locations are competitive weapons. Some of the decisions we have seen in terms of rental bids for leases are not being set by the head of real estate, but by the chief executive and chief financial officer because of the potential EBITDA impact on their business.

“In some markets, most clearly in London, rent is not an expression of land values, plus rising construction costs, plus yield. It is an expression of affordability.”

What the experts say: Rapid rental growth is a feature of industrial markets worldwide

Nathan Kane, head of research, Realterm

“Between 2000 and 2015, there was virtually no long-term growth in rents in the US industrial space when adjusted for inflation. Since 2015, we have seen 30 percent to 40 percent total growth. That is an unheard-of number.”

Leslie Lanne, executive managing director, JLL

“In markets with sub-2 percent vacancy, such as the Inland Empire and New Jersey, we have seen historic rent growth of up to 17 percent annually. But even in Midwestern and tertiary markets where vacancy is 4 percent to 6 percent, we have seen rent growth of 7 percent, which is nothing to sneeze at either.”

Jack Cox, head of EMEA industrial capital markets, CBRE

“Rental growth forecasts have lagged what we have actually seen in markets that have low availability of land. We are seeing US- and UK-style rental growth performance emerge in the land-constrained markets of northern and western Europe.”

Ben Bannatyne, president, Prologis Europe

“Around 18 months ago we started to see really strong rental growth in the US. We knew it was coming to Europe. Rental growth for comparable space over the past year was around 5.5 percent, which does not sound that dramatic, but we are seeing in-place rents from when tenants last signed a lease three years ago up 25 percent to 40 percent.”

Chris O’Brien, executive director, capital markets, industrial and logistics APAC, CBRE

“We have seen 5 percent to 7 percent rental growth in APAC, with 10 percent in some markets, but not 10 percent to 15 percent year-on-year growth yet. But what is happening in America and Europe is now coming to APAC. We are getting to very low vacancy, which means we will have exponential rental growth.”

The combination of these factors has propelled industrial rents to rocket worldwide, and led to “difficult conversations” with occupiers, particularly those accustomed to leveraging their scale to secure favorable deals, says Bannatyne. “We are telling them really far in advance where rents are going and trying to be as transparent as possible. This is not Prologis being greedy. Land prices have gone up, construction costs have gone up. You could not build a warehouse today for last year’s rent.”

One of the most notable changes in the landlord-tenant dynamic has been the reversal of positions over lease lengths. Once landlords coveted the security of longer terms, while tenants craved flexibility. But now, many landlords are reluctant to lock in terms for an extended period, thereby potentially missing out on rapid rental growth, while tenants would prefer the opposite.

An emphasis on capturing rental growth makes sense for investors who foresee further inflationary pressures

during a period when “the major yield compressions are behind us,” argues Cox. “There has been a real shift in mentality from leasing for value – getting the longest lease to secure the lowest yield – towards leasing for income. Capital markets have an increased appetite for shorter leases that offer near-term mark-to-market opportunities to drive total return on the income growth side, rather than being reliant upon yield compression.”

Most landlords are now reluctant to offer leases with renewal clauses, which allow tenants to roll over their terms at the current rent. In some cases, occupiers that want long leases are unable to obtain them.

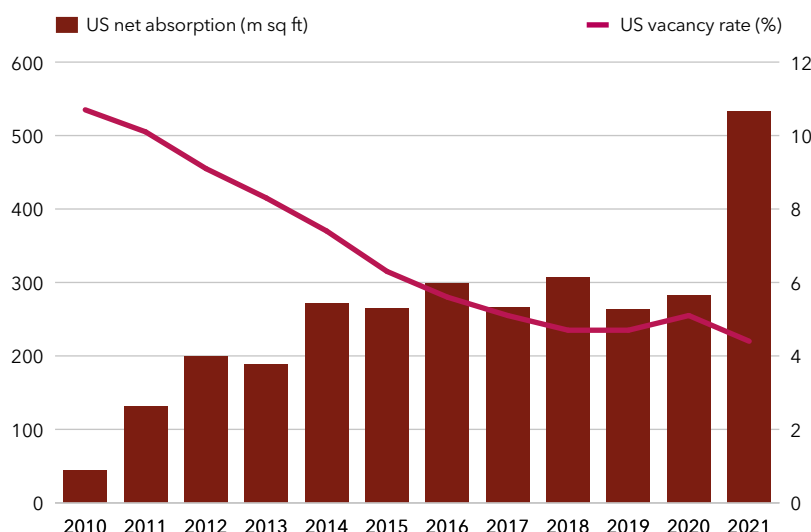
Meanwhile, other landlords are locking in higher periodic uplifts, observes New Jersey-based industrial specialist Leslie Lanne, executive managing director at JLL. “Owners that want to hedge their bets are looking at long-term deals with increased annual escalations: 2.5 percent to 3 percent used to be the norm in the US, and now we are seeing owners pushing for 3.5 percent to 5 percent annual increases in many markets.”

Fighting for space

With standing stock in short supply, it is not unusual for more than one tenant to compete for a single building. But bidding wars are not a common feature of the market, says Lagarde. “In this industry, it does not work like that. However, we are very mindful of the financial strength of the tenant. One day you will sell your building, and names like Amazon, GXO and DHL trigger premiums on the pricing. If one of them and a small tenant are competing for a building, both prepared to pay the rent, it is not hard to guess which a landlord would choose.”

Ease of doing business is often the deciding factor, adds Bannatyne. “You might have two of your good customers fighting for the same space; it comes down to someone signing first, timing, who is easiest to deal with.”

US industrial vacancies fell to 4.2% as net absorption jumped in 2021



Source: Cushman & Wakefield Research

Occupiers must be ready to make swift decisions, counsels Tolliver. “There are very few options in the market, so tenants do not have the luxury of taking their time. If you are going out and surveying the market, you are maybe lucky if you have five buildings. By the time you set up the tours, you may be down to three, and if you dilly-dally while you tour them, you are probably out of all of those options. It is being prepared and proactive instead of reactive.”

End users with strong credit, and a year or two to select a greenfield site, can still strike favorable deals on build-to-suit space, argues Chris O’Brien, executive director, capital markets, industrial and logistics for APAC at CBRE.

“The appetite from capital and need to build scale is so strong right now, and yields are so sharp, that feasibility still stacks up with high rental incentives and low effective rents,” he says.

“The prelease market is entirely different to the stabilized market. A tenant with a 500,000-square-foot requirement that will sign up for 20 years will get an unbelievable rental deal.”

Tenants willing to stray outside their core business can insulate their business from rental cost escalation by

acquiring land and self-developing for owner-occupation, notes Cox. “For example, [logistics provider] DHL has been utilizing its balance sheet to participate in the profit from development and offer its customers a lower rate of rent.”

While development activity will inevitably ramp up, the most desirable logistics markets close to ports and major cities are naturally supply-constrained because of the multiplicity of competing uses for a finite supply of land. They are likely to remain landlords’ markets for the foreseeable future.

Hines’s Smith cautions that it is important to put that into the perspective of long-term trends in the logistics sector, however.

“The occupiers will continue to have the lion’s share of the balance of power, and it should be that way. Together, Blackstone and Prologis and Segro have about a seventh of the market capitalization of Amazon, and there are 10 companies that size focused on logistics and industrial real estate right now,” he says.

“We are still incredibly small relative to the scale of the occupiers that are focused on this sector. We are humble service providers. A pawn on the chessboard.” ■

KEYNOTE INTERVIEW

Balancing pricing and rental growth in European logistics



*Core industrial property prices have never been as elevated as they are now, so selecting assets for which occupiers will pay higher rents is increasingly crucial to investment performance, argues UBS Asset Management's **Brice Hoffer***

Rental growth for logistics space has remained strong in key European markets over recent quarters. However, increases cannot be relied upon to outstrip inflation across the whole sector, even in the near term, cautions Brice Hoffer, head of real estate research and strategy for the DACH (Germany, Austria and Switzerland) region at UBS Asset Management. And with pricing reaching hitherto unheard-of levels, he argues that to underwrite industrial transactions successfully, investors need to understand the asset-level factors that will drive performance.

Q Has high pricing in European logistics markets deterred investors

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from committing capital to the sector?

Definitely not. According to Real Capital Analytics, the first three quarters of 2021 saw record transaction volumes for logistics of more than €40 billion in total, despite yields of less than 4 percent in many prime markets. Demand is not being driven by investors looking at entry yields, but by the structural trends that are lifting the market. In that respect, it is similar to the private rented residential market, where demographic trends are expected to support demand over the coming decade.

Logistics is very strongly supported by an occupier market that has been propelled by e-commerce demand, which has been accelerated by the pandemic. For a while, the pandemic caused intense disruption to supply chains. That is now fading, but in the meantime, stock was depleted massively, and so many businesses are now restocking, which is an additional cyclical driver of demand for logistics.

Whether a manager is investing for their own funds or for a specific mandate, they have the comfort of knowing that in residential, and particularly in logistics, the demand is unquestionable, so the asset will probably remain fully occupied. Those sectors also benefit by comparison with retail, which

is suffering the flipside of the e-commerce effect, and also with offices.

Even if we do not buy the office apocalypse story, and we think for good offices demand will remain strong in the occupational and investment markets, there are still a lot of questions over which assets will be resilient. That uncertainty in other asset classes continues to support demand for logistics assets in Europe.

Given the low cap-rate environment, what can logistics investors do to drive performance?

At the pricing levels we see now, it is essential for investors to drill down into the details of the individual market, sub-market and of the asset itself to know if they are being paid appropriately for risk. In the following core markets of continental Europe – France, the Netherlands and Germany – sub-4 percent yields are the new normal.

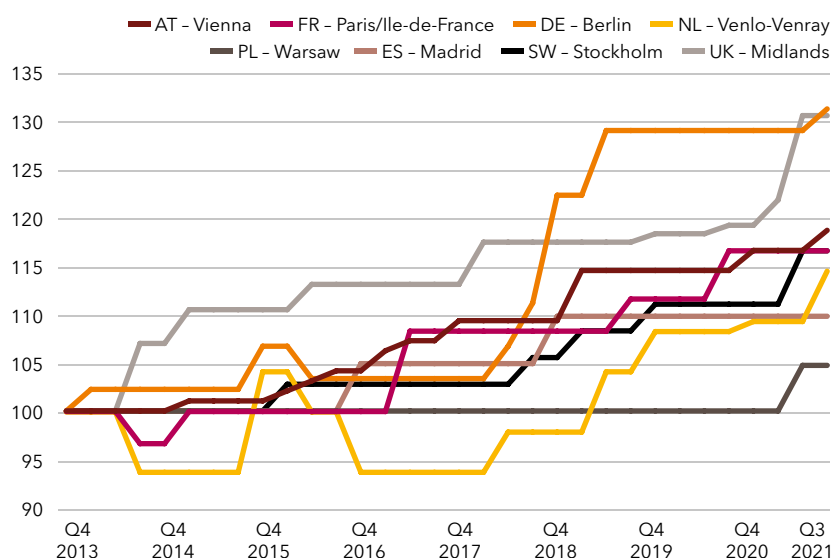
In secondary markets like Central and Eastern Europe, and in Southern Europe, entry yields are higher, but the demand drivers are still strong, so an increasing volume of capital is flowing into those locations. The UK also offers something of a yield gap compared with prime continental markets, although that gap is shrinking as Brexit-related uncertainty gradually fades.

Meanwhile, rental growth is becoming an increasingly important component of investment performance. As many logistics businesses operate on relatively tight margins, it is too optimistic to underwrite across-the-board rental growth that will outstrip inflation. Research consultancy PMA forecasts that in several markets, rental growth will run only just ahead of inflation in the period to 2025.

However, if an investor can identify a location where the tenant can make the highest possible savings on their operating costs, which for logistics firms means transportation, then the occupier will be willing to accept a higher level of rental growth.

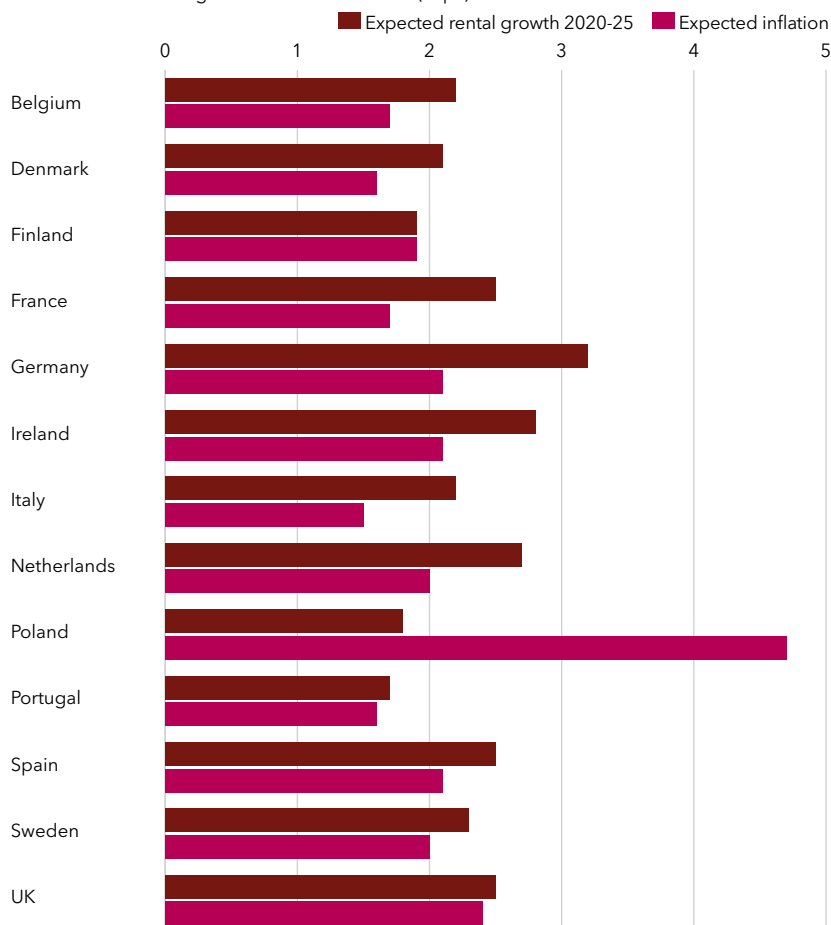
Positive momentum continued in 2021 for European rental growth...

Prime industrial rent indices (100 = Q4 2013 level)



... but mid-term outlook should run just ahead of inflation in several markets

Prime industrial rental growth forecast from PMA (% pa)



Source: PMA October 2021; UBS Asset Management, Real Estate & Private Markets

Q Do other sub-asset classes within the industrial sector represent good value?

Yields for manufacturing and light industrial space have not compressed to the same extent as those for logistics assets serving e-commerce. But there are trends at play in those sectors that will potentially support demand there too.

The consequence of the pandemic is likely to drive the reshoring of certain activities to Europe. Whether yields for that space will compress as sharply is another question, but it is likely to be strong from a demand-driver perspective. There is also potential to modernize and convert light industrial space to serve distribution users. Investors doing that need to be very selective about the location, ensuring it is one where occupiers can save on transport costs, so that it will generate the higher rental growth that offsets the capital expenditure needed for repositioning.

As with all value-add strategies, success depends heavily on the price paid and the strength of the demand driver, which enable the investor to let the finished product at a higher rent.

Locations within urban agglomerations may also see higher rental growth. Competition with other uses like retail, office and even residential drives up land prices. A tenant who wants to secure that site for urban logistics use is likely to accept a higher-than-average rent.

Prime locations have seen higher rental growth over recent years than was the case in the past, but prime is not the average of the market, and the cost of investing in those locations is that you enter at a lower yield than the market average. At the entry yields we currently see in those locations, investors need to make sure the location of the asset and the nature of the tenant support a rental growth story for their underwriting to work.

Q What other factors will determine the rental growth potential?

“Demand is not being driven by investors looking at entry yields, but by the structural trends lifting the market”

The modernity of the asset is important in generating rental growth. The ESG theme will undoubtedly continue to grow in importance within the industrial sector. Historically, logistics facilities have been poor performers in environmental terms. More efficient modern assets, and those that have been improved to bring them up to current standards, will soon show a competitive advantage, both in terms of demand from tenants and from investors.

Investing in a building that is not very modern or energy-efficient may work fine now, there may even be some cap-rate compression. However, investors, occupiers and regulators are starting to look much more closely at these issues, and that risk is not yet priced in for many older logistics assets in Europe. It may be more of a problem for industrial than for other commercial real estate sectors because substantial capex will be needed to make older industrial buildings energy efficient.

Q Is there any danger that increasing supply will undermine values?

There has certainly been an increase in development activity over recent years. According to current data from PMA, we saw record delivery of new space in 2021, with 215 million square meters constructed in continental Europe and the UK. We see that as a positive sign because it creates more opportunity for strategic buyers. There is little threat that construction will upset the

demand-supply balance. The end-user appetite for modern logistics facilities is huge, so development will not derail the strong market fundamentals that we see now. Even in locations with relatively good land availability like Poland, oversupply is not a concern because the pent-up demand for modern logistics assets there is huge. The structural change in the market still has a long way to run, so we actually need more supply. Eventually it may reach a level where it becomes a problem, but that is unlikely to be the case for the next two years, at least.

Q Is the outperformance of the European industrial sector at an end?

Over the short to medium term, two or three years, we do not think there will be major changes in the performance of any of the commercial real estate sectors. Logistics will still be the top outperformer, ahead of residential. More cap-rate compression will help. While yields are already low, we expect that there is further to go, and in some locations there will also be strong rental growth, especially when compared to other sectors like offices and retail.

Beyond three years, it is difficult to forecast. It could be that the bottom is in sight for the correction taking place in retail property markets. If that is the case, as the logistics market becomes even more expensive and investors seek higher-yielding assets, capital may begin to shift toward retail four or five years from now. At that point we will call the end of the outperformance of logistics, and investors will start to migrate to other property sectors, and perhaps to other niches within the industrial sector like manufacturing and light industrial.

In the meantime, however, in a competitive market like logistics, it will remain crucial to drill down into the detail of each investment. When you take a high-level view, a transaction may look like a good idea, but a great deal still depends upon buying at the right price. ■



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Year in review

The biggest EMEA logistics stories from 2021

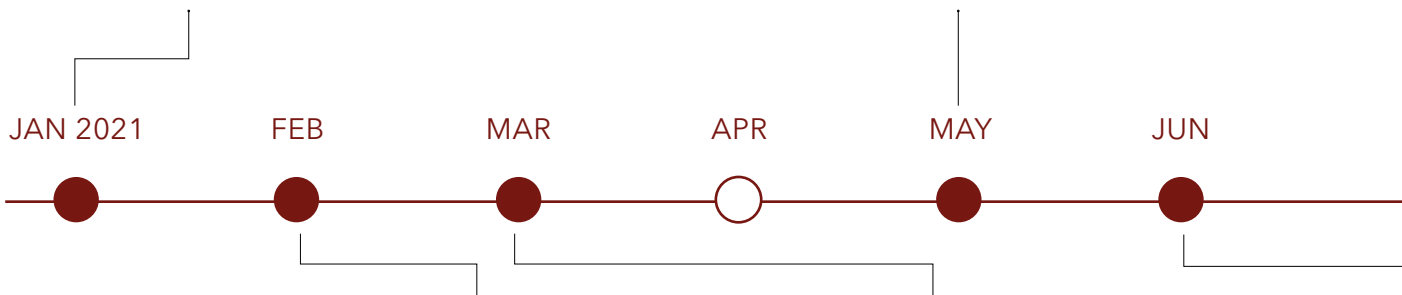
Oxford strikes seventh platform deal

Oxford Properties Group agreed to acquire European logistics manager M7 Real Estate. M7 was due to be the primary conduit through which Oxford would deploy £3 billion (\$4.1 billion; €3.4 billion) over five years.



Canada's PSP goes global

Canada's Public Sector Pension made an international logistics play by launching a £1 billion (\$1.4 billion; €1.2 billion) joint venture with Chicago-based Bridge Industrial to target last-mile facilities in Greater London and the UK's Midlands.



AEW launches urban logistics strategy

AEW raised €475 million of equity for a closed-end European urban logistics and light industrial strategy. The three main investors were PGGM, Allianz Real Estate and Crédit Agricole Assurances.



Trammell adds European leader

Dallas-based Trammell Crow Company appointed Ian Worboys as head of European logistics. He had filled a similar role for San Francisco's TPG Capital.

BGO closes core-plus fund

BentallGreenOak held a final close of its inaugural European Core+ Logistics Fund at its €695 million hard-cap. More than 20 global institutional investors committed to the vehicle.



Oxford eyes record

Oxford Properties was looking to build the biggest logistics hub the UK has ever seen. It acquired a 734-acre plot in Birmingham and planned to build an 8 million-square-foot freight rail interchange facility.

EQT Exeter raises its biggest fund

EQT Exeter closed its fourth European logistics real estate fund at its €2.1 billion hard-cap. EQT Exeter Europe Logistics Value Fund IV exceeded its target by 68 percent.

PGIM exceeds \$1bn

PGIM Real Estate's European Value Partners II fund doubled the size of its first European value-add effort, attracting \$1.1 billion of equity. Its portfolio was seeded 60 percent with last-mile logistics.

'You're going to need a bigger shed'

A report by listed logistics firm Tritax EuroBox and broker Savills revealed 46 percent of warehouse tenants expected their space requirements would increase, with France and Germany leading the way. Only 4.8 percent expected to make a reduction.



JUL

AUG

SEP

OCT

NOV

DEC

NREP enters Poland

NREP branched out from the Nordics by securing logistics and residential deals in Poland as part of plans to deploy up to €500 million in the country. The logistics transaction was the privatization of BIK, a real estate business with four standing assets.



Schroders goes Dutch

Schroders Capital, the private markets investment division of UK asset manager Schroders, agreed to buy Dutch manager Cairn Real Estate from German firm MPC Capital. Cairn has €1.3 billion in AUM and primarily invests in logistics, office and healthcare.

KIC looks to Eastern Europe

Korea Investment Corporation, already focused on logistics in Western European countries, was looking to diversify its real estate portfolio in Europe by entering new sectors and geographies in the region.

KEYNOTE INTERVIEW

Logistics' trans-Europe express gathers speed



*E-commerce and supply chain transformation, coupled with investor demand, are creating a truly pan-European industrial and logistics market, says Panattoni CEO & co-owner Europe, **Robert Dobrzycki***

While European logistics real estate markets have garnered avid investor interest in recent years, much developer and investor activity has been focused in a few prime markets. But occupier trends that have intensified during the pandemic – notably, the need to provide e-commerce delivery centers close to populations and onshoring bringing increased production activity back to parts of Europe – are now creating conditions in which it is both necessary and desirable to create truly pan-European development platforms that are able to fulfill investors' desire to build large, diversified portfolios across the continent.

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Q What investor-level trends are fueling greater geographic diversification across European logistics markets?

There is a huge shift of capital from other asset classes to logistics because of the well-established structural trends that favor the sector.

However, compared to the amount of capital allocated, the total stock and value of industrial property is still small relative to other real estate sectors.

There is much more demand from investors than there is product available, therefore yields are continuing to compress across European markets.

The historically high capital values we see today are nevertheless still justifiable, because it is becoming ever more difficult for developers to buy land, get a permit to build and supply new logistics facilities in desirable locations.

Frequently, logistics is not perceived as a desirable use for municipal authorities in high-consumption areas, and populations in those areas do not want warehouses as neighbors. Scarcity supports values for logistics property, while also offering investors the likelihood of

further yield compression in the long run because of excellent prospects for rental growth.

Meanwhile, the difficulty and expense of accessing the logistics market at scale is transforming the way in which investors are working with developers to deploy their capital. Instead of buying standing product, they are trying to cut themselves a slice of development profit by backing developers.

Because building volume through development on a deal-by-deal basis is difficult, investors are funding large-scale pan-European construction platforms. That is part of the reason why Panattoni has been expanding its geographic reach, to be able to do that faster and better across more European markets.

Add to that the fact that large

pan-European logistics portfolios are extremely liquid, and it explains why the region's logistics market is becoming much more programmatic, volume-oriented and pan-European.

Q Do some European locations still offer comparatively attractive entry yields?

Demand from occupiers and capital providers still does not match completely, which creates buying and development opportunities.

Demand fundamentals in western Poland and eastern Spain are better than in western France or eastern Germany, but that is not yet reflected in investor demand or in yields. Investors, in their high-level analysis, reason that France represents a better capital

markets outlook, and much more liquidity, than Spain.

The same applies for Germany versus Poland. The demand from logistics occupiers in western Poland and eastern Spain is very strong; however, while their popularity with investors has yet to catch up, the yield gap between those locations and those that are favored by investors is wider than it should be. In fact, a warehouse in western Poland should be perceived as more attractive than one in eastern Germany, because it is still serving German demand from a location on the other side of the border, where labor is more cost-efficient.

Meanwhile, there is huge demand for logistics space in France, but it is very difficult to build it. It is much easier to develop on the Spanish side of the border in areas that are still serving France. There is more land available in Poland and Spain, increasing the risk to standing assets of competition from new development, and that plays a role in shaping investors' perceptions of value in those locations.

Of course, it is more attractive to hold assets in a supply-limited location. However, it will not be long before land is scarce everywhere, and the volume of money coming into the logistics market is so high that the yield gap we still see today will soon close.

Q How are supply chain trends opening up new markets for industrial development?

In the past, companies were chasing efficiency, which led them to site their production platforms in low-cost global locations. Occupiers are increasingly taking the view that long supply chains are risky, so they are shortening and diversifying their supply chains and seeking to bring them closer to the end consumer, even though that generates higher costs.

When the first lockdowns closed borders, businesses created temporary country-by-country supply chains to ensure continuity of supply. Those are

Transforming old assets to service a strategic market

In November 2021, Panattoni made its first acquisition in France, a 150-acre former automobile spare part production and storage site on the outskirts of the city of Beauvais located 47 miles north of Paris. Together with remediation and brownfield specialist ADM, the developer will tear down the old facility and build in its place a 485,000-square-foot, state-of-the-art logistics center.

The project will be built in line with the principles of the Afilog charter for environmental commitments, of which Panattoni is a founding signatory, and is targeting a 'very good' BREEAM accreditation. It is also committed to conserving and improving the biodiversity of several acres of natural wooded land in the area. The deal comes on the heels of Panattoni's first hire in the country, Salvi Cals as managing director, along with five other employees in its newly opened Paris office.



New hub: an artist's rendering of the completed Beauvais logistics facility

very inefficient, so they are unlikely to persist as the pandemic becomes less of an issue. However, as long as covid and geopolitical factors continue to cause supply chain uncertainty, we will continue to see companies setting up multiple facilities in Europe, where once they would have operated out of fewer buildings or located them elsewhere.

We are seeing that trend in Western Europe, but it is Central and Eastern Europe that has been the chief beneficiary. The most visible consequence of that trend for the industrial market is that production facilities are being opened in Europe, instead of in Asia, to serve Western European demand. For example, electric vehicles destined for German and French buyers are being built in the central and Eastern part of the continent.

Demand in southeastern Europe has grown substantially. Labor is in short supply in Western Poland and the Czech Republic. Developers are unlikely to cross into Ukraine because of tensions on the Russian border, so the locations most likely to benefit are Hungary, Slovakia and Poland, which are already established markets for Panattoni, and also Romania, Serbia, Slovenia and Croatia. Increased production will drive more economic activity in those areas, so local consumption will grow as well, creating more warehouse demand.

For developers, those markets were difficult to enter because the volume in each of those small countries was not sufficient to justify setting up a local development operation. However, with volumes growing significantly, it is more practical for a pan-European developer to serve those local markets. That is definitely an expansion path for us going forwards. There is still a very substantial economic development gap to be closed between those markets and Western Europe.

Q Are those locations also attracting more attention from investors?

Occupiers may want space in a location,

but without investor demand the market is not a good prospect for developers like us. It differs from country to country, but we have seen growing investor appetite for southern and eastern Europe since the pandemic, which encourages us to go there. Investors who are looking for a bit more yield, for higher returns, cannot find that in Western European markets.

There is much more potential upside in Eastern Europe. Volumes are lower but growing, and we have seen some global investors who specifically want to be in Southern and Eastern European logistics markets because there is much less competition, a bit more yield, and they still believe in the market dynamics.

Q Panattoni is also seeking to expand into more national markets in Western Europe. What is driving that?

Tenant demand, which is mostly for e-commerce fulfillment in areas of high consumption, is the main driver. At the same time, investors want pan-European coverage, exposure and access to product.

In the past, we felt that within Western Europe, France and Italy were a bit less dynamic and more mature than some other markets. However, e-commerce growth has made those markets a more attractive prospect for developers. Creating product in France is tougher than in most other European countries.

“We will continue to see companies setting up multiple facilities in Europe”

Greenfield development is limited and getting permits is difficult. We plan to progress mainly through a brownfield strategy, buying older facilities, remodeling and repositioning, demolishing, and constructing modern buildings. We have secured a site north of Paris and we are hoping to acquire a second one soon. A few other acquisitions are on target for the first quarter of 2022.

In Italy, we have established a team and will probably close on two sites in the north of the country in early 2022. The fundamentals there are similar to other Western European markets, with the large e-commerce customers that we serve elsewhere also expanding there. We are also looking at Sweden. Our end-user clients want to be there because it has quite a large consumer market to serve. Property there is expensive, but it is also a very liquid market.

Q What are the main challenges facing European logistics developers?

At the moment, the challenges are on the supply side: land acquisition and construction costs. Supply chain issues meant that building costs have risen substantially over recent months. It is not the level of cost that presents a problem. Because there is high demand from tenants, they will pay more rent. It is the unpredictability of cost. Sharp increases halfway through a project can be difficult to absorb. There is no magic way of dealing with it. You just have to watch costs closely and have a strong relationship with your contractor and your capital provider so that the risk is shared.

The yield compression we are seeing at the moment creates a natural hedge for construction cost increases and they are also likely to be offset by rental growth. When building programs have long lead times, if you cannot lock in your construction costs, you should not be locking in your final investment yield either. ■

South Korea's battle for speed



Guest comment by **Jaryoung Choi** and **Wonjin Oh**

Traditional offline conglomerates are joining the e-commerce race, say IGIS Asset Management's head of research and investment strategy team manager

During the covid-19 pandemic, the South Korean e-commerce penetration rate, already among the world's highest, increased more than 6 percent year-on-year to 30 percent in 2020.

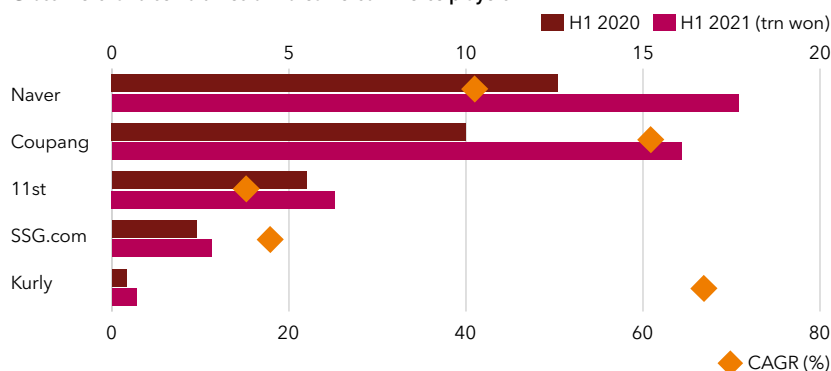
Even before the pandemic, industrial factors including IT industry development and mobile phone supply, and social trends such growth in single-person households, were driving the high penetration rate.

The increase in single-person households, to 30 percent of all households across the nation, is leading to growth in the number of SKUs and the quantity of products – mainly centered on small-quantity batch production – handled by logistics centers.

As a result, the development and operational methods of e-commerce and 3PL centers are changing. Logistics properties are becoming a core asset in the South Korean real estate market, and their importance is expected to continue growing in the future.

Between 2015 and 2021, 181 million square feet (5,092,000 pyeong) of

Gross merchandise volumes of Korean e-commerce players



Source: Wiseapp, Kiwoom Securities

new logistics centers were built, accounting for almost half of the country's total supply. In that time period, growth averaged 9.7 percent per year. Most centers are located in metropolitan areas with high population density, and expansion is shifting from the south and west to the east.

Rent is increasing about 1 percent per year; ranging from 8,055 won (\$6.74; €5.90) per square foot for room temperature logistics and 17,280 won per square foot for low temperature logistics. The vacancy rate is 8 percent and the cap rate is 4.3 percent, which is less than half of the 2011 peak but

higher than the return for offices in the country.

Cap rates have fallen because of high land costs and increased competition, as well as the difficulty in acquiring permits for logistics centers and in securing large-scale sites. Prime, large-scale logistics centers larger than 350,000 square feet are seeing asset values increase an average of 13 percent per year.

Until recently, the Korean distribution market primarily took place offline, mainly the hold of conglomerates such as Shinsegae, Lotte and Hyundai Group, through department stores GMS, SSM and CVS. However, new

e-commerce players and platforms, such as Coupang, Market Kurly and Naver, are changing the retail landscape.

The characteristics and success factors of the major players in the Korean e-commerce market can be summarized into the following three categories:

1 Game changers offering same- or next-day delivery

From its start as a social commerce business in 2014, Coupang has established itself as a game changer in Korean e-commerce; it is often referred to as the 'Amazon of Korea.' Using its fleet of delivery personnel, Coupang's 'Rocket' delivery system guarantees next-day delivery for orders placed by midnight, and its Rocket Wow membership service for 4,990 won (\$4.15) per month guarantees free delivery regardless of purchase amount. The Rocket Fresh service focuses on fresh products and delivers products early the next day, when the order is placed before 7pm, and same-day delivery at night when the order is placed before 9am.

Market Kurly, which first introduced the concept of early morning delivery in Korea, provides curated, high-quality fresh food with high-quality delivery, capturing market share among the trendy, younger generation. Orders – such as seafood, meat and vegetables – placed before 11pm will be delivered by 7am the next morning in time for breakfast.

These same- or next-day delivery guarantees have been a hit; 31 percent of Koreans use Coupang. In 2021, it reported gross merchandise volume (GMV) of 16.1 trillion won (\$13.4 billion), a 61 percent increase from the previous year. Market Kurly's GMV grew 67 percent from the prior year to 0.7 trillion won. Although growth has been impressive, both companies are operating at a loss due to heavy investments in logistics and delivery. Still, Coupang is expanding its logistics centers through IPO proceeds and Market Kurly received Series F investment to put into innovation.

Big growth ahead

South Korean e-commerce players are planning bigger logistics footprints across the nation

Coupang has over 170 logistics centers, totaling 24 million square feet (equivalent to the size of 40 football fields). It is investing 2 trillion won to build an additional 35 million square feet of large-scale fulfillment logistics centers in seven regions across the nation, aiming for every household in the country to be within six miles of one of its logistics centers by 2025.

Market Kurly is building a full cold chain, handling logistics from warehousing to storage and delivery according to each product's appropriate temperature. It plans to develop a 1 million-square-foot complex logistics center encompassing cold storage and dry storage logistics.

Shinsegae Group plans to use offline stores together with NEO, a next-generation online-only logistics center, to establish logistics infrastructure nationwide. Currently, there are three NEO centers, totaling 1.15 million square feet, operated by SSG.com. In addition, 110 pick and pack centers located across the country utilize E-Mart stores, Shinsegae's subsidiary, to handle online logistics. E-Mart plans to expand the number of pick and pack centers to 160 through additional store renewals, and to develop a large-scale logistics center worth more than 1 trillion won.

2 Offline-based retailer delivery

Conventional, offline-based retail companies, which had been slow to respond to changing trends and both Coupang's and Market Kurly's growth, are now jumping on the early morning and same-day delivery bandwagon. Traditional retailers, such as Shinsegae and Lotte, are seeking to take the lead on quick delivery services by offering short delivery times within three hours, an hour and even 30 minutes through their brick-and-mortar stores.

3 Platform-based open market

Korean web platforms such as Naver and Kakao have emerged as formidable opponents against the explosive growth of Coupang. They operate an open market based on their capacity for huge traffic and the competitiveness of their platform. Naver has the country's largest GMV at 17.7 trillion won, and Kakao has been growing rapidly with the rollout of a social commerce campaign called Gifts. Both companies are expanding market share by using

their platforms to connect manufacturers and consumers, rather than storing and selling their inventory, while working with 3PL companies on logistics.

With large amounts of investment and intensification of competition come concerns about diminishing profitability and oversupply of logistics centers. The growth of logistics centers have not come without a price – there have been fires, higher labor costs and a tightening of logistics-related regulations.

However, the nation's explosive e-commerce growth is requiring a large number of logistics facilities to be built to meet demand. New facilities are increasingly becoming build-to-suit, unlike the existing practice of building and renting out a center. Within cities, assets that have depreciated in value are being repurposed into micro-fulfillment centers (MFC). Mesh Korea, for example, pivoted from its MFC target strategy of last-mile shipping to total fulfillment, providing inventory storage, picking products, packaging, shipping and handling. ■

KEYNOTE INTERVIEW

Building a cleaner future



*The logistics sector has a big opportunity to make a difference by making warehouses carbon neutral – and even carbon positive – believe Logistics Capital Partners co-founders **James Markby** and **Kristof Verstraeten***

Logistics Capital Partners (LCP) raised the bar on ESG performance last fall when it completed the first large-scale carbon neutral logistics warehouse in Europe. LCP immediately sold the 1.75 million-square-foot building at Civate al Piano near Milan to Midas International Asset Management and Hana Financial Investors for nearly €200 million, marking Italy's largest ever single warehouse transaction and comparable core pricing. The development also reflects the growing importance attached to embodied carbon as well as operational energy efficiency in new-build facilities. Co-founders James Markby and Kristof Verstraeten

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discuss the significance of the scheme on the industry's path to net zero.

Q ESG is high on the real estate agenda generally, but what is the driving force in logistics in particular?

James Markby: The drive in the sector is linked to the strong investment boom for logistics. We have a great performing asset class so, in theory, there is capacity to invest further into green and more energy-efficient and

carbon footprint-reducing features.

We have the largest building footprints and roof spaces to utilize, in particular solar panels and power generation. Apart from tight urban infill locations, we typically have lower site and building densities that allow for features such as ground source heat wells, and additional planting and biodiversity contributions over a greater area. Of all the sectors, we believe there is the biggest opportunity to make the biggest gains in logistics.

Q What set LCP on its course to carbon neutrality at Civate al Piano?

JM: What started to get us excited about what we could do, beyond a decent BREEAM rating, was our previous development, which was 1.8 million square feet across two adjoining buildings for Kering, the luxury global retailer brand, in Trecate, west of Milan. The project was not just driven by the landlord and not just by the occupier – but in collaboration. We extended the design of that building to incorporate a 12 megawatt peak solar installation, the maximum possible on this roof; that hasn't been a typical feature of logistics beyond minimum local requirements under legislation.

It does, however, introduce extra complexity regarding who's then responsible for which parts of the roof, who pays for what and who gets the benefits of what's produced. That was a process we were able to get into with Kering.

Kristof Verstraeten: This was a large multinational group investing, together with us, in a new global distribution center. It was an opportunity to not only make the building itself energy neutral, but also to make it energy positive and to contribute to their wider range of real estate, which involves shops and offices where the technical constraints are more complicated. That was where we started seeing real leverage in the logistics sector.

JM: It is a fantastic thing to have buildings produce more power from clean energy than they consume. If you coupled that with a shift in operations, using gas or electric-powered or hybrid vehicles, then you're shifting some of the older, negative dynamics of the sector toward making a positive environmental and an economic impact. We would hope this starts to move the perception of logistics to a more positive place, where it can now play a more positive role in urban planning, and doing its part as we move toward more sustainable business operations and local communities.

“It was an opportunity to not only make the building itself energy neutral, but also to make it energy positive and to contribute to [Kering's] wider range of real estate”

KRISTOF VERSTRAETEN

Q What issues did you face in addressing embodied carbon as much as operational efficiency at Cividate al Piano?

JM: We started looking at how much carbon was emitted to get the building constructed in the first place – the embodied carbon – and, from our assessment of logistics, this is typically the bigger producer of carbon than the operations within the lifecycle of the building. But there is still a lot of confusion around what is ‘carbon neutral,’ what is ‘net zero,’ and areas such as: which part of the building category in the lifecycle assessment holds what carbon – embodied or operational? As the developer, we are only able to control the embodied carbon assessment up to the point of practical completion, and then it's a question of what standards you hold it up to and who undertakes the assessment.

On this project, we were not able to get any better accreditation than carbon neutral at the point of practical completion. Because it was a bespoke

pre-let building, with existing design criteria, we didn't have the full opportunity to redesign and mitigate areas of carbon content within the design. The best we could do was volunteer to do the assessment and then make a suitably well-researched and regarded carbon offset that was then also independently verified and accredited.

Q Why was the sub-4 percent yield sale price important in the context of carbon neutrality?

JM: There are other carbon neutral buildings but they're all much smaller and, importantly, none of them have been traded. Therefore, there hasn't been a commercial process and transparency over how you can link that [carbon neutrality] to value. This is a near €200 million building following a full-scale CBRE marketing process and with global institutional capital bidding.

If a private partnership company like us is able to demonstrate this link clearly and credibly, then this is a challenge to the rest of the industry and the institutional capital universe. Perhaps there's actually more that they could be doing more immediately, that is within their capacity, than just having stated objectives to move to carbon neutrality in buildings and ratings in five or 10 years' time.

Q Is there an issue around future-proofing new-build logistics in ESG terms?

KV: There is demand today, and the only thing you can do is try to be as advanced as you can reasonably be on ESG topics so that you're in the front or in the top 20 percent of what gets developed. If buildings in 10 years are going to be even more ESG-friendly, then that shouldn't stop us from going full steam ahead today. Obsolescence in real estate is usually much more driven by operational usage and so, on a pure ESG basis, I think the risk is fairly limited.

Q Is the prospect of greater regulation around ESG a help or a hindrance?

JM: Without regulation, you're effectively marking your own homework, which for the environmental agenda and industry can't be an ideal position. We wanted to be able to avoid any such accusations and took the extra step to have the project externally audited by a recognized third party.

As developers, we are creating new product and therefore can incorporate new standards, feasibility assessments and environmental features into the construction process, materials and operation. But the additional step of external audit and accreditation is critical to move the whole industry toward higher standards.

We have a massive advantage to be

able to push that agenda and adhere to those standards. It's one of the reasons why companies like us that are building the next generation of buildings should be much more open to increased regulation in whatever form that comes, because if we can have something that's less voluntary in terms of what we need to incorporate, then it keeps a level playing field for all the competitors, who are still often required to make primarily cost-based proposals to win occupiers' attention.

Q What are the other main challenges going forward?

KV: The next step will be carbon net-zero buildings, which effectively means the real embodied carbon itself gets reduced substantially through

design and building material changes, so that whatever is left and needs to be offset – with a carbon offsetting project – is a much smaller number. That next step is still a huge challenge because logistics buildings typically have lots of steel and concrete in them. Carbon offsets in themselves will probably get materially more expensive in the future, so you'll have to fix the issues at the source, and there's a whole series of technical challenges to go through.

The whole industry – tenants, developers, construction companies and also authorities handing out building permits – will need to work together over the next few years to start shifting the typical standard specification of a logistics warehouse to something that simply contains much less carbon. We're not there yet.



How LCP achieved carbon-neutral status

For LCP's latest scheme, independent assessor Construction Carbon verified the design and construction in accordance with the RICS Professional Statement "Whole Life Carbon Assessment for Built Environment" (2017).

This process calculated the embodied carbon emissions for the full lifecycle of the building. The upfront embodied carbon emissions for the materials and construction were then determined and offset via The Gold Standard, one of the recognized registries for acquiring offsets. The project also has a BREEAM 'excellent' rating. Importantly, Construction Carbon also independently verified the assessment process and the offset, and hold the carbon accreditation so that it lives with the building and the offset cannot be traded on.

"Everything we've done has been on a voluntary basis," says Markby. "There are different standards, and knowing which standards to adhere to is a body of work in itself. We felt the RICS is at the highest end for the industry and globally recognized, and is leading the dialogue when it comes to future regulation. How European governments then adopt those standards and guidance statements that have been produced by recognized industry bodies, like the RICS, will be critical part of the regulation that could and should be coming."

JM: We're undertaking carbon assessments on our speculative buildings at a much earlier stage so that we have the control and flexibility to design out and mitigate carbon content. That means we have a better chance of achieving net zero on the embodied carbon status accreditation of these buildings.

KV: The pandemic and other supply chain issues are making it difficult to get basic materials, let alone fancier materials that are even harder to get. It has been a perfect storm for us over the past 18 to 24 months.

The point here is not to get caught in some short-term squeeze and lose sight of the long-term ESG objectives. In the long run, higher construction and land costs will translate into higher and better specifications of buildings, which will filter through as higher rents, especially in logistics. There is going to be undersupply for the next five to 10 years. A lot of logistics will still have to be built to accommodate continued e-commerce and changes in retailing and supply chains. We're in a market that's driven by new construction, and that is why the ESG upside potential in logistics is so significant. ■

Fast five: Asia-Pacific

Growing economies in Southeast Asia are driving investor appetite

Our Asia-Pacific panel

Steve Kim

Head of South Korea,
LaSalle Investment
Management

Paul McGarry

Head of Asia,
Goodman

Alex Tse

Managing director,
BPEA Real Estate

Ralf Wessel

Managing director of
fund management,
GLP



Q How has the pandemic changed logistics in Asia-Pacific?

RW: Covid-19 has shown that logistics is an essential support function to the economy. The pandemic has accelerated several pre-existent global trends and changed the way we live, work and shop. Research points to many of these consumer behavior shifts becoming permanent. A prime example is Southeast Asia, which has added 70 million new digital consumers since the start of the covid pandemic.

PM: E-commerce growth has taken center stage. As a result, the logistics sector has emerged as an essential service to support a rapidly growing digital economy. The pandemic has also disrupted supply chains and the nature of future supply configurations. This has resulted in more demand for warehouse space, as companies require additional space to hold more inventory, and

increasing demand for new, efficient facilities to be developed in the future.

SK: An indirect impact of the pandemic has been a rise in construction costs, particularly for steel. On the logistics tenancy side, occupancy rates have continued to outperform relative to established property types, such as the office sector. This was even the case in markets in South Korea, where the economy did not shut down and the workforce continued to go to the office.

AT: The lockdowns and social distancing measures expedited the existing shift in consumer behavior and distribution channels, which really accelerated the development of Asia's logistics market. This trend was particularly evident in China, where online purchases of groceries and other fresh food achieved record growth during the initial lockdowns. We don't expect this transition to slow down after covid-19.



Q Which market will see the most interest this year?

RW: No particular market jumps out. Globally, all markets for logistics remain strong and interesting. All over the world, companies are rethinking their supply chains and the resiliency of their operations, which is driving up demand for highly functional, modern warehouse space. There is research estimating that every \$1 billion increase in online sales equates to a need for an additional one million square feet of warehouse space. In 2022, you will see GLP expand our businesses and investments across all of our core markets, including China, Japan, India and Vietnam.

PM: We believe the industrial property market will maintain investor interest in 2022, as structural changes

continue to result in a pivot from retail to industrial and logistics. The acceleration of e-commerce has made the global industrial asset class increasingly sought after, and we see the most interest in the big consumer markets of Asia – the gateway cities with large populations, high disposable incomes and high rates of technology adoption.

SK: We believe institutional investors will continue to be interested in Asia's logistics sector, particularly in South Korea, Australia, Japan and China in 2022. The pandemic has ushered in permanent changes in consumer spending habits, with a wider demographic of the population purchasing commoditized items as well as higher-value products online compared with pre-covid. The continued growth of the e-commerce sector correlates with our investment strategy to both develop and acquire modern logistics facilities in these markets.

AT: We continue to see strong investor interest in China, which has represented nine of the 11 transactions valued above \$100 million in Asia since 2019. It is the region's largest market and one of the least developed. Approximately 90 percent of existing warehouse stock in China is obsolete in terms of specifications and construction standards, and is generally not sufficient to meet the requirements of modern logistics users who often deal with high-flow-through logistics operations. We believe that China is at the onset of a multi-decade transformation.

Q Which market is most unfairly overlooked?

RW: There are many smaller markets in Southeast Asia that are not covered yet. The reason for this is the issue of getting them right-sized in a reasonable timeframe. From that perspective, Vietnam is one of the most attractive and underpenetrated markets with attractive population dynamics, a growing economy and a middle class, which all support domestic consumption.

PM: With strong investor appetite for logistics properties, all markets have been attracting attention. There doesn't appear to be any differentiation between the quality of assets. However, we believe that in time, there will be a bifurcation to higher-quality assets in the key gateway cities where cashflow growth and resilience are expected to be greatest.

SK: Asia-Pacific represents a diverse region of different

countries with individual real estate market fundamentals and cyclical positionings. Our approach has been to focus deeply on our key targeted markets in South Korea, Australia, Japan and China, and pursue growth and overlooked opportunities within those markets, identifying undersupplied locations for logistics developments from outside of Seoul in South Korea to Greater Nagoya in Japan.

AT: Southeast Asia has huge potential, as many countries in the region have the same characteristics as China – booming demand and a chronic shortage of modern logistics stock. Indonesia, Malaysia, Thailand and the Philippines all have positive long-term tailwinds from rising income levels, growing consumption, and a developed internet and e-commerce economy. But they remain underpenetrated, with most warehouses still substandard facilities owned by local developers.

Q Thinking about logistics, what concerns you the most?

RW: A lot of capital has flowed into the sector, but the challenge is creating and finding the right product and being able to deploy the capital into the right opportunities. For GLP, the key is having established and experienced teams on the ground with the expertise and knowledge to deliver that product. Global customer relationships are also an area of differentiation, as they provide visibility over market trends and opportunities.

PM: With demand for logistics properties so high, there is increased requirement for land and facilities close to consumers. We need to ensure that planning regimes allow for flexibility and higher density to maximize the ability to meet this demand.

SK: Supply chain and demand imbalances, which may potentially create bottlenecks impacting the day-to-day operations of logistics tenants, the potential for inflation and debt capital markets to impact real estate values, and the continued uncertainties around new variants of the coronavirus.

AT: The biggest thing that keeps us up at night is being able to find enough talent to scale our platform and meet the growth opportunity. We're constantly looking for talented professionals across all aspects of our logistics platform, from execution to construction to leasing. The sector is growing so quickly that it's an ongoing challenge to find the best people.



Q What will be the biggest change in logistics in 2022?

RW: The biggest challenge for the sector remains discipline. In an environment where everyone is chasing the same thing at the same time without prudence and investment discipline, shortcuts can be made and the risk of mistakes increases.

PM: We will see an accelerated focus on sustainability. As the global property sector currently accounts for almost 40 percent of total greenhouse gas emissions, it's imperative that property owners focus on reducing emissions and their environmental impact across the board. At Goodman, our sustainability approach is about practical initiatives that have the most positive impact and drive long-term value for our stakeholders.

SK: A broader continuing trend for 2022 and onwards will be of tenants relocating out of older and obsolete warehouses into modern logistics facilities in strategic locations. The trend will support and accommodate tenants' growth and transformation into an increasingly digital and 'just-in-time' business model, and allow them to maintain their competitiveness and respond to customers in their respective business segments, whether in B2B or B2C.

AT: ESG is an area we're really focused on, and we think it has the biggest potential for change across the industry in 2022. Responsible investment is a core component of our strategy, and we believe that firms that are more conscious of their wider responsibility will deliver the best economic returns. For example, we are currently looking to install solar panels across our logistics facilities, and hope that the cost of installing solar panels will continue to fall over time, to the point that this becomes the standard across the industry. This could create a fully sustainable industry. ■

KEYNOTE INTERVIEW

Asian player takes
on the world

*Singapore's Mapletree has acquired close to S\$10bn of logistics real estate in the US and Europe in the past four years, says Europe and US regional CEO **Michael Smith***

After years of Mapletree's logistics business being mainly focused on its home region of Asia, since 2018, it has become a global player building significant portfolios in the US and Europe. The Singapore-based developer and investment manager has a portfolio of both private funds and Singapore-listed real estate investment trusts. Logistics assets now make up about one-third of its S\$74.6 billion (\$55 billion; €48.4 billion) of real estate assets under management. *PERE* talks to Michael Smith, regional chief executive officer, Europe and US, about the group's rapid expansion in those markets and its plans for the future.

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Q Mapletree is now one of the top managers of logistics real estate worldwide. How has the business developed over time?

Mapletree's origins can be traced back to PSA Singapore. In 2000, the port business and its ancillary real estate were split, with the latter eventually becoming Mapletree. Some of those original assets included a few warehouses, so logistics is in our DNA. The first Singapore real estate investment trust

launched by Mapletree was Mapletree Logistics Trust (MLT) in 2005. MLT started out with an initial portfolio of 15 assets worth S\$422 million and now has 183 assets across nine countries worth S\$12.4 billion, including the proposed acquisitions of 13 properties in China and three properties in Vietnam. Today, we have S\$26.1 billion of logistics assets across the Mapletree Group. In addition to private funds and public REITs, we also acquire and develop logistics assets using our own balance sheet, which means we can continually feed our managed vehicles.

Mapletree's early expansion in logistics was in Asia-Pacific, but more

recently – and my focus since I joined in 2017 – has been to expand our footprint in the US and Europe, which now comprises 88.5 million square feet across 421 warehouses in Europe and the US. In 2018, we acquired \$5.9 billion of warehouses in the US and Europe, the majority of which went into our first private fund, Mapletree US & Europe Logistics Trust (MUSEL). As it was an opportune time to buy logistics assets, the fund has performed very well.

At the same time, we built our operational capacity, opening five offices in the US and three in Europe. We then went on another acquisition spree in 2021, focusing on the US, acquiring \$4 billion in July and September. Those assets were syndicated in the Mapletree US Logistics Private Trust (MUS-LOG). We had a lot of repeat investors and the fund was oversubscribed.

Q Why has recent expansion been heavily weighted toward the US?

The US logistics market is one of the strongest markets that we operate in right now. There are structural forces underpinning demand for warehouses in the US that will have positive impacts for years to come, including rising e-commerce penetration and a re-configuration of the supply chain away from a ‘just in time’ to a ‘just in case’ inventory model.

This reflects the fact that over the past two years, our occupiers have had to hold more stock to ride out supply-side shocks. This growing demand has outstripped supply, and vacancy rates are at all-time lows, down to 3 percent to 4 percent in most markets. On the supply side, construction costs have escalated significantly by about 15 percent year-on-year.

Q Are many of the same factors at work in Europe, making it similarly attractive?

We are strong advocates of the European logistics market, but do not see the

same levels of rental growth as we are seeing in the US. Demand is stronger in the UK as it has higher e-commerce penetration versus continental Europe. Contracted rental growth in Europe is also indexed to inflation, which has remained muted compared to US leases, which have fixed 2.5 percent to 3.5 percent annual escalations.

Q Everyone wants to buy logistics assets. Does that mean you need to pay through the nose for large portfolios?

It is certainly a more competitive marketplace than I have ever witnessed, but Mapletree’s strong balance sheet

enables us to buy portfolios outright without relying on debt financing. We are able to buy first, then syndicate, which means we have fewer elements to juggle when bidding for a portfolio. When we have aggregated a portfolio of sufficient scale, we then invite like-minded equity investors to participate alongside us and secure non-recourse debt financing for the fund. Our strong balance sheet also allows us to hold assets during the aggregation phase.

So far, we are pleased with the pricing at which we have acquired our assets. I think we have been in a real sweet spot whereby cap rates have been at a



Sustainable warehouses: a high reflectivity ‘cool’ roof installation at one of Mapletree’s logistics assets in Ohio

Making warehouses greener

Mapletree is committed to delivering high ESG standards across its business, and that is no different in the logistics sector, says Smith

The need to cut greenhouse gas emissions means warehouse location is more important than ever. A warehouse an hour closer to a key market is curbing emissions every time a truck makes that journey, Smith points out.

ESG in logistics must be a partnership between owner and tenant, because “although we own the four walls, the slab and the roof, the tenant owns everything inside,” meaning that initiatives such as energy efficiency measures must have tenant buy-in.

Smith says: “We have been working to include green lease clauses in our standard lease templates and environmental provisions in our fit-out manuals. There is a lot of money spent on fit-out – by both the tenant and landlord – when a new tenant leases space in our properties. We see this as an opportunity to improve the environmental footprint of our properties in partnership with our tenants, who may have their own ESG requirements too.”

“We prefer outright ownership [in challenging markets] so we can manage our exits into either our private or public vehicles”

“We see opportunities to transfer some of our knowledge of building vertically in Asia to other markets”

level where the prevailing interest rates have provided a decent positive carry. However, that spread may be squeezed if interest rates rise and cap rates continue to compress on the back of strong demand for logistics assets.

Q What is the picture for logistics cap rates in the US today? How much room is there for further compression?

Cap rates have compressed so much that it may now be difficult to acquire a quality portfolio in either Europe or the US for above 4 percent. In 2018, we were buying in the 5 percent to 6 percent range, implying that values may have risen by up to 50 percent in some markets.

This reflects both strong rental growth and the denominator effect of cap rates falling substantially. We did well with MUSLOG in bundling together some assets that we had owned since 2018 with two large portfolio acquisitions – the stars were aligned and it worked for both investors and ourselves. It will be more challenging going forward if cap rates compress further and interest rates rise. There is still a lot of capital out there, especially for logistics, but rising interest rates will inevitably dampen cap rate compression at some point.

Q It has been a great time for logistics real estate, but things look tougher from now on. Where are you looking for growth?

We have a significant logistics footprint in Asia-Pacific. In challenging markets such as China, India and Vietnam, many of our peers tend to look for joint venture partners. However, we prefer outright ownership so we can manage our exits into either our private or public vehicles.

We can do this because we have experience, knowledge and local teams on the ground. This is something we have been replicating in the US, where we have accumulated knowledge from operating 355 warehouses. That knowledge should enable us to pivot toward development going forward, allowing us to replicate what we have learned in places like China. The next obvious direction is to expand our development capability in Europe and the US.

Q Is there a particular Mapletree model with regard to logistics? What do you do differently?

It would be disingenuous to say we have the ‘secret sauce,’ but we know enough about global logistics to know the importance of location. You want to be in as many high-quality locations as possible. Although we do not expect

there to be any major disruptions to logistics real estate, any weakness is likely to be felt more in tertiary locations.

We see opportunities to transfer some of our knowledge of building vertically in Asia to other markets. We have built ramp-up warehouses in Japan and China, while in Hong Kong we have built an 11-story ramp-up warehouse. These types of vertical warehouses are not typical in the US, but there will be more pressure on the best-located sites in the future, so there might be a need to densify and get more usable area out of the land.

There are few truly global logistics real estate businesses, which puts us in a fortunate position to work with major occupiers as they globalize their businesses, for instance Chinese e-commerce companies that may want to develop a global presence.

We also offer a range of exit options for our private funds, such as MUSEL and MUSLOG. We can explore divesting assets via trade sales, merging the private funds into one of our listed REITs or launching a new REIT through an IPO.

We have an enviable track record of generating value for our investors by exiting our private funds through these options. For example, MJLD, a Japan-focused logistics development fund, developed a portfolio of high-quality warehouses. It would have been ideal for our public logistics vehicle, MLT, to have acquired the portfolio, but Blackstone offered a compelling price, so we sold \$1 billion of those warehouses to them. MJLD eventually achieved a return of 1.8 times the equity multiple and a net internal rate of return of 23.7 percent.

Having development, asset management, REITs and private funds skills, alongside global logistics knowledge and a strong balance sheet, gives us a lot of options and the ability to pivot our business to where the best opportunities lie. ■



Year in review

QuadReal pushes into China

Canadian investor QuadReal completed its second logistics investment in China, committing equity to a \$1 billion partnership with Warburg Pincus-backed New Ease.

The biggest Asia-Pacific logistics stories from 2021

JAN 2021

FEB

MAR

APR

MAY

JUN

Mubadala makes Australian debut

Abu Dhabi sovereign wealth fund Mubadala made its entry into Australian logistics, teaming up with KKR and LOGOS for a \$1 billion joint venture.



Blackstone sells Milestone

Blackstone sold Australian logistics portfolio Milestone through a dual-track process, marking the country's largest real estate transaction in five years. It sold to a joint venture between ESR and Singapore's GIC for A\$3.8 billion (\$2.9 billion; €2.4 billion).

CPPIB comes back to South Korea

The Canada Pension Plan Investment Board made a bigger bet in South Korea's logistics market after the successful exit of its previous investments. Along with ESR, it pledged to invest \$500 million into their 2018-vintage Korea Income Joint Venture.



Goldman leads secondaries process

Goldman Sachs was set to lead a single-asset deal focused on one of Asia's largest distribution and logistics firms. Hopu Investment Management was moving its stake in GLP China into a new vehicle anchored by the asset manager's secondaries arm.



Blackstone hires logistics CEO

Blackstone hired its first CEO for China logistics platform DragonCor. Peter Hwang was formerly managing director at Iron Mountain.

ESR cements position in Asia

Logistics specialist ESR acquired ARA Asset Management for \$5 billion. It separately inked a joint venture with Dutch pension investor APG and an affiliate of Singapore's GIC to invest \$1 billion into warehouse developments in China. With leverage, the ESR China Development Platform could deploy up to \$4 billion.

Gaw closes first pan-Asia opportunistic fund

Gaw Capital Partners reached a \$1.2 billion first close on Gateway Real Estate Fund VII, which has a \$2.5 billion hard-cap. As with predecessor Gateway funds, Fund VII targets real estate assets with a focus on logistics and data centers.

CMC hires for logistics focus

GLP-backed China Merchants Capital hired former Link REIT executive Ricky Zhang as managing director – real assets, as part of a bigger plan to grow its fund management business. Hong Kong-based Zhang was appointed to focus on niche sectors such as logistics, cold chain, life sciences and digital assets.

JUL

AUG

SEP

OCT

NOV

DEC

Stonepeak to build China team

Stonepeak Infrastructure Partners planned to build a China investment team. Although traditional infrastructure would remain the firm's focus, it was increasing its real assets exposure. The team's first hire was Derek Ng to focus on investment opportunities in transportation and logistics.



GLP reaches first close of \$2.75bn

GLP announced the first close for its GLP Japan Development Partners IV fund on ¥311 billion (\$2.75 billion; €2.44 billion). Like its predecessors, the fund will invest in logistics facilities in Japan.

CBRE raises \$1.74bn

CBRE Investment Management closed CBRE Asia Value Partners VI at its hard-cap of \$1.74 billion, exceeding its \$1.2 billion target. The vehicle will make at least 80 percent of its investments in the logistics sector.

KEYNOTE INTERVIEW

Capturing new economy real estate growth in China



*Chinese real estate investment veteran **Sun Dongping** outlines the strategy through which his new venture, DNE Group, aims to deploy capital at scale in the country's fast-expanding new economy sectors*

In December, Chinese real estate investment managers D&J and New Ease announced a merger to form DNE Group. Both companies were founded by Sun Dongping, who previously co-founded Asian logistics, Warburg Pincus-backed manager ESR before leaving the firm. The new combined DNE entity brings together New Ease's expertise in logistics and cold chains with D&J's specialism in life sciences and modern manufacturing parks. It will also add further verticals in internet data centers and urban redevelopment to create a comprehensive Chinese new economy infrastructure platform under Sun's leadership

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as the chairman and chief executive officer.

Sun and Keaton Yu, senior vice-president, capital and fund management (above right), tell *PERE* how the company will seek to differentiate itself from its competitors and seize opportunities in a market that is both rapidly expanding and highly competitive.

Q What was the rationale for creating DNE Group?

Sun Dongping: D&J was created in

2014, and New Ease in 2018, and they had grown from start-ups to a considerable size and reputation within the market. It made sense once the businesses grew to sufficient scale to merge the platform, creating synergies for both project development and co-ordination of asset management under a common management team.

Post-merger, DNE becomes a leading player in the market, covering the full spectrum of the new economy and new infrastructure segments in China. That creates synergies for our customers and investors; for example, life science firms carrying out research on our business parks can also use our

industrial space to manufacture their products, and further downstream they may use our logistics warehouses for their storage and distribution needs.

If you can offer a one-stop shop to large-scale domestic and international occupiers, offering all the real estate products they need, that provides a competitive advantage when seeking to attract tenants.

Meanwhile, at the national level, the Chinese government is leading a policy push away from traditional real estate sectors, toward assets that function as infrastructure to support the new economy. It is also attractive for local governments in China to partner with a real estate platform that can create a whole new economy ecosystem for their region, instead of focusing on a single segment. From their perspective, that brings in more investment, more infrastructure and a wider range of skilled employment into their region.

Keaton Yu: The two companies involved in the merger – D&J and New Ease – are relatively young, compared to the other industry players. However, DNE has been the fastest growing platform among our peers, with early-mover advantage across multiple sectors. In logistics, industrial warehouses and life sciences, we are already in the top five, if not the top three, firms in the country.

All the segments have operational scale, accentuating the management team's depth of knowledge and expertise across our product offerings. Compared to other players, whom traditionally tend to be single segment providers, DNE has the capability to offer an integrated service across all the different segments.

Q What are the drivers for growth in Chinese new economy sectors?

KY: The logistics story is well told: GDP growth, the increase in the middle-income earning population



Landmark goals: Galaxy One will have three-story ramps, modern warehouses and services in the Jinshan District

Shanghai space race

DNE's flagship Jinshan Galaxy One scheme at the Shanghai Fencing Industrial Zone is set to become one of China's largest modern industrial and logistics developments

Over a five-year period, the developer plans to construct 15 million square feet of modern warehouse and industrial space located within one hour's drive from downtown Shanghai. This represents an investment of around \$1 billion in the city's industrial infrastructure.

"Galaxy One will become the landmark project of the southwest gateway of Shanghai," says Sun. "It will demonstrate the integration of the Yangtze River Delta with the rest of the city, enhancing the 'Shanghai Bay Area' brand."

translating into increased consumer spending and the need for more and better goods. We have already seen a transformation in China's logistics and cold chain space, to upgrade them to international standards over the past decade. In manufacturing, there is a strong policy drive from the government to enhance China's high-value, high-tech production capabilities to strengthen the economy.

SDP: Covid-19 has also created opportunities for our target market segments. The pandemic has led to a strong emphasis on supply chain resilience. Meanwhile, the higher level of pandemic-related disruption seen in some neighboring economies has encouraged manufacturers to bring their operations back onshore.

Even without covid, life sciences were always going to be a strong sector

in China. The country has a massive population, with ever-growing spending power and focus on improving health and well-being. We expect this to be one of the fastest-growing segments in the industry. Investors have recognized that, and research funding has reached record levels.

Our involvement in urban redevelopment is driven by the obvious demand to upgrade aging industrial facilities. We are pursuing the repositioning of obsolete factory and manufacturing sites in infill locations in Tier 1 cities. By converting suitable sites to modern, low-density, well-equipped business parks, DNE has created an attractive portfolio located in key business hubs commanding benefits from a cluster ecosystem effect and strong government support, which are well pursued by customers, particularly those in high-tech and internet industries.

Q What is the expected growth trajectory for DNE Group?

SDP: In the next two or three years, we aspire for DNE to become one of the largest providers of new economy infrastructure real estate in China. DNE is already the number one independent player in the life sciences and advanced manufacturing segments. We want to capitalize on our market position and grow that business to become the dominant provider in the country. The business is an integrated platform with the ability to secure land, design, construct, manage and lease, with an added layer of fund management capabilities to provide a one-stop shop solution for our tenants and investors.

KY: DNE currently manages 16 funds or platforms for our investors, which include GIC, Allianz and QuadReal. We are looking at raising several new funds in multiple segments, on top of our existing vehicles, starting with our flagship core logistics fund, which will go to market in early 2022. We are also in the process of establishing development vehicles focused on industrial parks on the back of C-REIT progress in China, as well as platforms for life sciences properties.

Like our tenants, who have the ability to use a single provider to service their needs across a number of segments, our investors will be able to do the same; instead of investing with three or four different managers, they can invest with DNE to cover the full new economy infrastructure spectrum.

Q What challenges and risks do new economy real estate providers and investors face in China?

SDP: China has been successful in controlling the coronavirus pandemic. Nevertheless, we may have to learn to live with further covid and other potential disruption in the future. That will

Catering for China's life sciences boom

The country's life sciences sector has seen remarkable growth in recent years

Management consulting firm McKinsey & Co reports that the market value of publicly listed biopharma innovation players from China across the Nasdaq, Hong Kong Stock Exchange and Shanghai Stock Exchange surged from \$3 billion in 2016 to more than \$380 billion in July 2021, and seven out of the world's top 10 largest biopharma IPOs from 2018 to 2020 originated from China.

DNE's predecessor company, D&J, was among the first movers taking advantage of the segment's rapid growth by developing projects such as Shanghai Jinchuang Plaza. Located in the center of Zhangjiang Hi-Tech Park, one of the most mature R&D business park areas in China, the 1.3 million-square-foot park consists of four research buildings built in two phases between 2010 and 2013. Occupiers are mainly Fortune 500 companies, including Shell, Johnson & Johnson, Formosa, Celanese, Amgen, Sartorius and Broadcom.

affect our on-the-ground operations. For instance, if one element of a business's operations, such as logistics, has to close for a period of time, can their manufacturing still operate? We need to work with our occupiers to build resilience into their supply chains.

Meanwhile, a byproduct of the comparatively successful management of the pandemic in China is that new economy real estate assets are in high demand and are being pursued by investors around the globe. In the past several years, we have seen the emergence of new investors and operators, which has increased competition. This is where our scale and multi-strategy investment opportunities will differentiate us and highlight our competitive advantages.

Another factor to consider is growth policies in China. The government plays a critical role in economic development; its long-term strategic policy can have wide-ranging effects. In China, we have to understand the government's view on how the economy and its supporting infrastructure will grow. This is a key pillar in the government's drive to promote tech-driven and people-orientated sectors such as new economy industries. As with all investments, there are cycles in the return profile, and we believe that our multi-segment scale and expertise mitigates the risk of any individual segment.

Finally, a challenge not only confined to China is the impact of climate change. The Chinese government is moving away from traditional power generation and towards renewable energy. That shift will have a series of long-term impacts. At DNE, we believe in contributing our share of social responsibility and have a series of long-term ESG initiatives in place to drive change. These initiatives include a review of energy usage and emission, as well as targets on reducing the environmental- and climate-related footprint of our operations.

In the near term, the supply of raw materials has been impacted; therefore, we need to be prepared for fluctuations in the prices of steel, concrete and other building materials, and proactively manage them through the development cycle of each project. ■

Laying the groundwork

India's ambitious infrastructure development plans are supporting the growth of the industrial and logistics sector, Mark Cooper writes

The key fundamentals for investing in real estate in India are its demographics and growth. However, recent government initiatives now mean a huge pipeline of infrastructure projects is supporting the growth of the industrial and logistics sector in particular.

The Indian e-commerce market is set to more than double to \$111.4 billion by 2025, from \$46.2 billion in 2020, according to the India Brand Equity Foundation. By 2030, it is expected to reach \$350 billion. Industrial and logistics space is not just supported by domestic consumption – India is becoming a manufacturing location, as manufacturers look to diversify in the wake of covid-19 and the US-China trade war. CBRE Research found that India was the most popular nation, along with Vietnam, for manufacturers looking to diversify from China.

India saw 45 million square feet of Grade A and B industrial and logistics space delivered last year, according to Savills, and 44 million square feet of take-up. Vacancy rates in major cities vary from 4.4 percent in Pune to 17.9 percent in Ahmedabad. The largest market is Delhi National Capital Region, with 61.9 million square feet of stock.

Key to the development of India's national logistics networks was the introduction of a national goods and services tax in 2017, which replaced a mix of state levies. This was the spark for a number of overseas investors to allocate significant capital to the sector.

The success of India's logistics and logistics real estate also depends on a suitable transport network – successive governments have been investing in infrastructure projects that are creating new roads, railways and transport hubs.

Canada's CPP Investments is a global investor in logistics real estate and made its first Asian investment in the sector in 2009. It formed a joint venture with IndoSpace in 2017 to invest in industrial and logistics assets in India. Hari Krishna, managing director, real estate – India, says: "We've seen extensive investments across infrastructure in India for several years now."

Rushabh Desai, chief executive, Asia-Pacific at Allianz Real Estate, which has a \$1 billion India logistics joint venture with sector specialist ESR, says the Narendra Modi government's commitment to economic reforms has boosted delivery of real estate projects. "One of the Modi government's most significant achievements has been to move forward on transport and

connectivity and to deliver infrastructure projects. Previously, delivery of these projects was often delayed, which made investment planning and development planning difficult."

The nation is not short of roads – its 3.5 million miles of roads are second only to the US; however, less than 2 percent of this is national highways, which carry 40 percent of road traffic.

A country in transition

India's National Infrastructure Pipeline (NIP) is a program to invest more than \$1.4 trillion into infrastructure projects by 2024-25, with the central government, state governments and the private sector to share the capital expenditure. Approximately one-third of this spending will be on roads and railways.

The National Highway Development Plan for the development of 34,000 miles was approved in the early 2000s and is substantially complete. The second leg of development, Bharatmala Pariyojana, has been launched to develop 15,000 miles of roads, with a focus on port-connectivity, economic corridors, expressways and connectivity to multi-modal logistics parks.

The Modi government also introduced the National Industrial Development Corridor Program in 2016, which aims to develop new industrial smart cities and create 11 industrial corridors across the country, with 30 projects to be developed in four phases.

India is seeking to diversify how its goods are transported, away from roads. At present, roads account for 64 percent of the tonnage of freight traffic.

"India's logistics sector continues to evolve, with an increased focus on automation and modern facilities"

ANSHUMAN MAGAZINE
CBRE

However, the National Rail Plan 2030 envisages rail freight accounting for 45 percent of freight by 2030 and the Sagarmala initiative seeks to increase the freight moved on waterways to 12 percent by 2025, from 5 percent currently. The National Rail Plan will see the redevelopment of 90 railway stations into major transit hubs and the development of seven high-speed rail corridors.

Anshuman Magazine, chairman and CEO – India, Southeast Asia, Middle East and Africa, CBRE, says: “The focus of these strategic initiatives is to ensure diversification of industrial

growth across the country by creating self-sustaining integrated industrial and economic nodes along these corridors. These nodes, once developed, would act as catalysts for industrial growth.”

He notes Indian logistics tenants are also upgrading their systems and business infrastructure. “Complementing this growth, India’s logistics sector continues to evolve with an increased focus on automation/modern logistics facilities and speedy project completions to accommodate surging demand.”

Delivery of road and rail projects is crucial for logistics investors, as warehousing needs to be near transport

hubs and, ideally, to major centers of population. CPP Investments’ Krishna says: “In terms of logistics real estate, we invest in locations that already have strong existing infrastructure, with plans to further develop the infrastructure to meet future demands.”

New infrastructure opens up new opportunities, says Desai: “New infrastructure and transport hubs open up the opportunity to talk to the government about land parcels around these hubs, which could be used for industrial and logistics space.”

Continued investment in infrastructure will benefit the industrial and logistics sector for years to come, says CBRE’s Magazine. “Investments towards improving the physical infrastructure like roads, ports, utilities and other vital elements could unlock tremendous value for the overall commercial real estate, with logistics being no different.

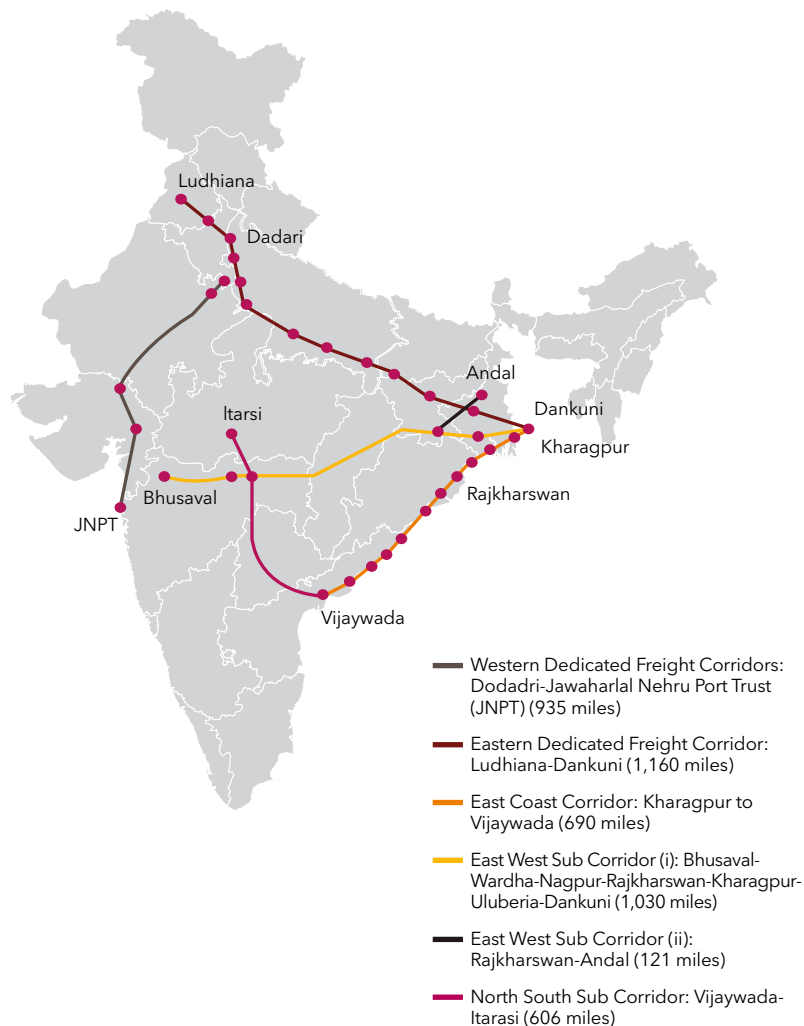
“The Indian infrastructure and logistics sector has been on a steady growth trajectory, expanding across cities from urban to suburban areas, and Tier 1 to Tier 2 cities in India. A robust infrastructure will help enhance last-mile connectivity and thereby build a resilient and reliable supply chain.”

The entry of substantial foreign capital into the sector after 2017 put pressure on land prices, which – along with the impact of the covid-19 pandemic – slowed the growth of the industrial and logistics sector.

However, Desai says: “A lot of investors moved into the India logistics space after the introduction of GST, which pushed land prices up. However, as India emerges from covid, demand driven by manufacturing and domestic consumption, supported by new infrastructure, is making the sector look more attractive.

“The fundamentals for industrial and logistics real estate in India remain very strong: demographics, growing digitalization and e-commerce penetration, and a growing manufacturing sector.” ■

Dedicated freight corridors in the works in India



Source: Invest India, Gol, 2021; CBRE Research, Q3 2021

KEYNOTE INTERVIEW

Charting a new era in Asia-Pacific real estate



Jeffrey Perlman discusses the path forward for ESR as it becomes Asia-Pacific's largest real asset manager powered by the new economy, as the acquisition of ARA Asset Management is completed

With its acquisition of ARA Asset Management, ESR becomes the largest real asset manager in Asia-Pacific and the third-largest listed real estate investment manager globally, with over \$140 billion in real estate assets under management. The transaction also brings ESR together with fellow logistics specialist LOGOS, which was majority owned by ARA, creating a combined new economy (logistics and data center) portfolio of \$59 billion and the largest development pipeline across over 10 countries in Asia-Pacific.

Jeffrey Perlman, chairman of ESR and head of Asia-Pacific Real Estate and Southeast Asia at Warburg Pincus,

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explains why expanding scale and offerings is important for logistics players given the transformational need for global capital partners to rebalance their portfolios over the next decade in favor of new economy real estate.

Q What does the acquisition of ARA Asset Management bring to ESR and its investors?

We are bringing together the best-in-class platforms of ESR, ARA and LOGOS to form Asia-Pacific's largest

real asset manager powered by the new economy and the third-largest listed real estate investment manager globally with a gross AUM of \$140 billion. On the logistics and new economy front, the coming together of ESR and LOGOS creates the largest new economy real estate platform in Asia-Pacific with \$59 billion of logistics and data center assets under management across 10 markets, representing 95 percent of the region's GDP and a development work-in-progress of more than \$10 billion.

We have a leading position – either top one or two – in every key market in Asia-Pacific, with the ability to offer

a comprehensive pan-Asia solution to our customers.

We have also, by combining the businesses of ESR and ARA, created something truly special and unique. We think we have created the only fully integrated closed-loop solutions ecosystem for real estate globally. The largest global real estate investors, including sovereign wealth funds, pension funds and insurance companies, are all looking for a way to rebalance their portfolio allocations in light of the transformational impact of technology on their existing real estate portfolios.

Put simply, they need to leverage a platform like ESR to increase their allocation to new-economy-driven sectors such as logistics and data centers – where they are still significantly underweight – by selling some of their grade A commercial assets and redeploying that capital back into new economy real estate via ESR and LOGOS.

Bringing in ARA also significantly expands ESR's network by adding 59 new capital partners, which allows the group to expand our product offerings, including adding discretionary pan-Asia vehicles for the first time. The enlarged ESR Group now has active relationships with nine of the world's top 20 capital partners, representing more than 40 percent of global real estate allocations.

Q How important is the development pipeline for a business like ESR?

Modern logistics in this region is still in the 'land grab' phase or the early innings of the sector. Something we firmly believe in is, when you're building logistics today, you are creating the critical infrastructure of the new economy. Going back 150 years ago, whoever built the railroads controlled commerce. It's why they were the wealthiest or the most successful companies of their day. In our view, whoever controls that ecosystem of modern warehouses sits in the central nervous system of e-commerce.

The most important competitive advantage for e-commerce is speed of delivery; the location of warehousing is crucial and so is securing the best positions in cities around the region. One of the biggest challenges for logistics in the key gateway cities is access and availability to land. That is a huge area of competitive advantage for us, because nobody has more boots on the ground across all of these major markets in Asia-Pacific than the enlarged ESR. Leveraging both the ESR and LOGOS businesses under one umbrella gives us the people and acquisition power to secure those prime locations all over the region.

Given the secular trends at play, combined with the long-lasting effects that will come from the pandemic, there is huge potential for Asia-Pacific logistics. A recent CBRE report highlighted that 80 percent of occupiers are planning to expand in the next three years. This is a critical juncture because our clients need to expand.

The biggest driver for space continues to be e-commerce. The second major demand driver is the fact that we're moving from a world of 'just in time' to

a 'just in case' inventory model, requiring higher levels of local inventory that need to be stored in warehouses. The third driver is a changing approach to food. Cold storage is going to grow significantly because of higher food safety standards, the acceleration of fresh grocery delivery, cloud kitchens and other key changes. These are the major factors underpinning the growth of modern warehousing and they are especially pronounced in Asia where there are high degrees of e-commerce penetration in markets such as China and South Korea.

Q ESR has focused exclusively on logistics in the Asia-Pacific region. Will that change?

Asia-Pacific and logistics, or in a broader sense new economy which also includes data centers, will remain at the core of the enlarged ESR Group. Geographically, there is potential to build the business in other regions. However, we think being Asia-Pacific's largest real asset manager powered by the new economy is incredibly valuable for two key reasons. First, a lot of the synergies that exist on the tenant or customer side are regional. If we're talking to the head of a major client, that person is typically sitting in either Hong Kong or Singapore, making regional decisions.

The second is our capital partners. Most of our capital partners also organize themselves regionally, with a head of real estate tasked with deploying capital across Asia. We want to build on those synergies. At the same time, because of our footprint and capabilities, some of our clients tell us we could help them beyond Asia; expanding outside the region is something we will continue to explore over the longer term. However, our focus remains on Asia because of the outsized potential here.

Q ARA has 11 REITs. What are you looking to do in this space?

"Investors need to leverage a platform like ESR to increase their allocation to new-economy-driven sectors such as logistics and data centers"

\$2.5bn of plans for Asia-Pacific data centers

Both ESR and LOGOS have already begun developing data centers and are now raising capital for two new separate funds, with an aggregate capital target of \$2 billion-\$2.5 billion.

The ESR and LOGOS funds will target complementary geographic markets in Asia. ESR's fund will potentially partner with operators, whereas LOGOS's will be geared towards investing purely in the underlying real estate. The combined group already has a pipeline of over 1,200 megawatts of capacity.

Perlman says: "Our core competitive advantage for data centers is what we do so well on the logistics side: We have great local country teams that have boots on the ground, can source land and can engage with local governments. We excel in design and construction. Probably the biggest weakness for traditional data center operators is that they're not real estate people, so their biggest challenge is not only identifying and acquiring the real estate, but importantly also securing the necessary power. We are used to dealing with local approvals on that front, as it is also an important element for cold storage facilities."

Perlman says the challenges for real estate businesses targeting data centers are firstly understanding the customers and their unique needs and, secondly, having a strong sustainability strategy, which is imperative for capital partners, customers and local governments who are looking for carbon-neutral solutions.

We fundamentally believe in what I call the 'financialization' of real estate. There is going to be substantial growth of the REIT market in Asia-Pacific over the next decade. If you go back 20 years, the total market capitalization of the US REIT market was \$100 billion. Today, that's \$1.2 trillion, which is about 6 percent of US GDP. If we think about Asia today, we have about \$400 billion of REIT market cap which is only about 1 percent of GDP, which means there is tremendous potential for growth.

We have been waiting on a big catalyst and we now have it in the form of new REIT legislation around the region: C-REITs in China, K-REITs in South Korea, REITs in India, and now opportunities emerging in Southeast Asia. There is also a cultural dynamic in Asia where people want to own real estate. The REIT sector presents

"We have created the only fully integrated closed-loop solutions ecosystem for real estate globally"

a much bigger opportunity for those who are already predisposed to want to own real estate.

The supply-demand dynamic is going to be very, very strong in the region. Some of the real estate advisory companies estimate that the current \$400 billion market cap can grow to more than \$1 trillion by 2030. Post-acquisition of ARA, ESR is the largest sponsor

and manager of REITs in Asia-Pacific with 14 listed REITs. This positions ESR well to capitalize on the above trends. We also strongly believe there are opportunities for more new economy REITs, whether country-specific logistics REITs or data center REITs.

Q How can a logistics developer manage its balance sheet and a diversity of products and capital sources, while keeping its fiduciary obligations?

For any fund manager, rule numbers one to three are: Be as good a fiduciary as you can be. We firmly believe that, as a group, if we put our capital partners first we will always be able to manage a diverse set of products. Increasingly, global capital partners want to give more capital to fewer managers and as a result, it raises the bar even higher in terms of the need to deliver both best-in-class governance as well as attractive returns. We feel the enlarged ESR is even better positioned today to deliver on that mission.

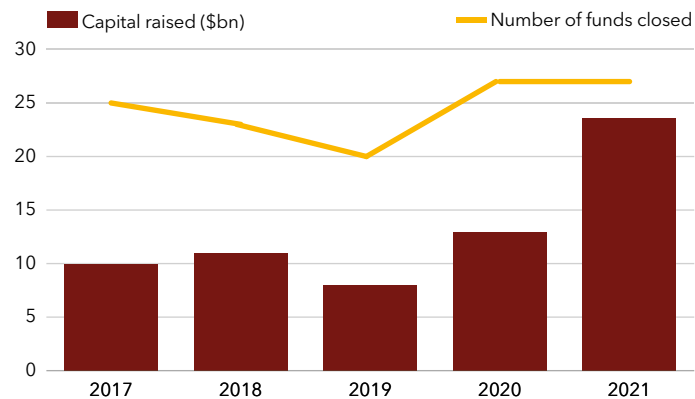
Capital partners do not want to lose their exposure to logistics and new economy assets. They understand that if they sell down their exposure to logistics, especially once assets stabilize in development funds, which is what they have historically done, it is going to be cost-prohibitive over time for them to get back that exposure. So, they want options for longer-term core exposure to the sector.

One of the other major trends we are seeing is that some of the larger pension funds have consolidated the private and public sides of their real estate portfolio under one leader. That also makes it easier, because sometimes the best takeout from a development fund will be a REIT. They are able to then swap their stake in a private vehicle for a stake in a listed vehicle, which historically would have been less likely to happen as one side of the business wouldn't want to lose assets under management to the other. ■

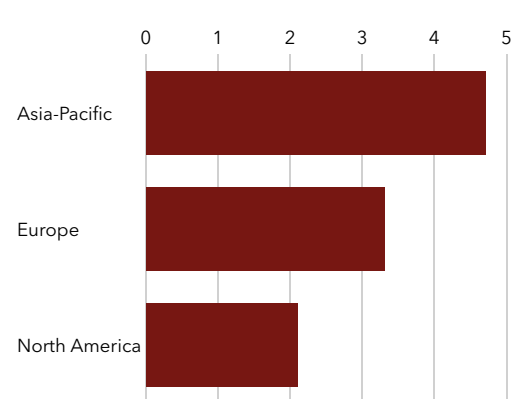
Logistics gets bigger

The average size of industrial funds raised in 2021 almost doubled 2020's figure, while APAC and Europe activity dwarfs North America's total

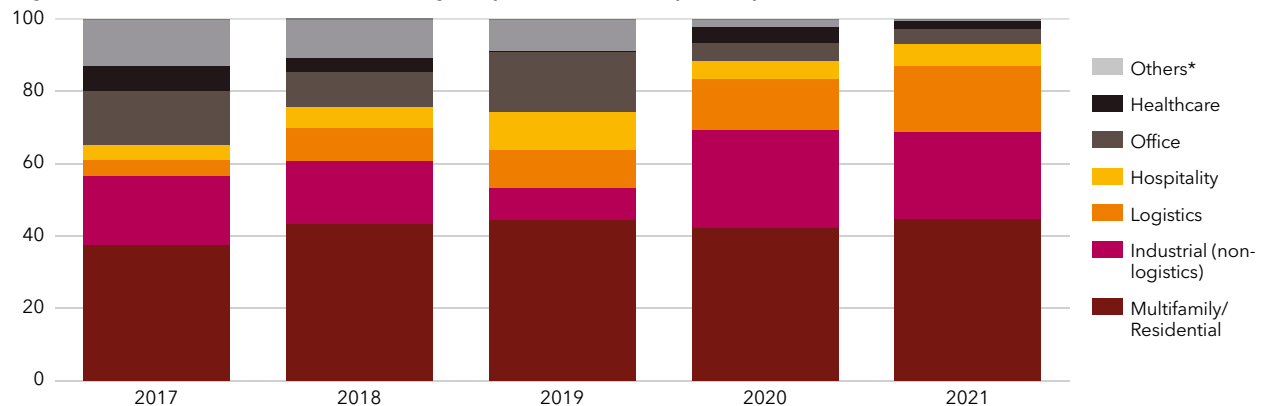
Fundraising for industrials-focused funds has more than doubled since 2019



Capital raised for logistics by geography in 2021 (\$bn)



Logistics' share of real estate funds raised in 2021 grew by almost 4% over the previous year (%)

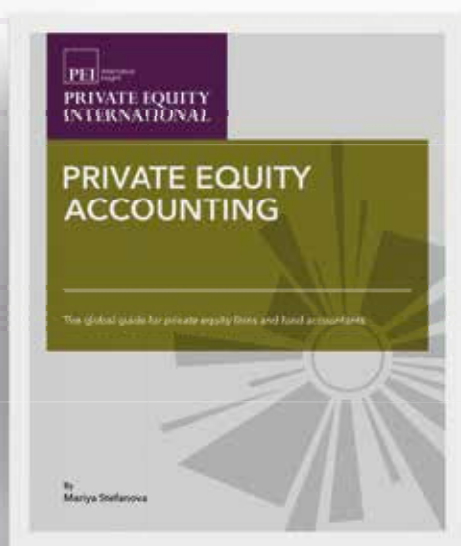


*Retail and student housing

Top 10 logistics funds raised in 2021

Fund	Manager	Current size (\$bn)	Strategy	Regional focus
Exeter Europe Logistics Value Fund IV	EQT Exeter	2.48	Value-add	Europe
Mapletree US Logistics Private Trust	Mapletree	1.40	Core-plus	North America
Redwood Japan Logistics Fund III	ESR	1.37	Value-add	Asia-Pacific
Baring China Logistics Fund	Baring Private Equity Asia	1.20	Value-add	Asia-Pacific
LaSalle China Logistics Venture Fund	LaSalle Investment Management	0.97	Opportunistic	Asia-Pacific
GreenOak European Core+ Logistics Fund	BentallGreenOak	0.82	Core-plus	Europe
CapRock Logistics Venture	CapRock Partners	0.70	Value-add	North America
Ivanhoe Cambridge Japan Logistics Joint Venture	PAG	0.40	Core	Asia-Pacific
CBRE Asia Value Partners V Japan Logistics Co-Investment	CBRE Investment Management	0.27	Co-Investment	Asia-Pacific
LOGOS/CPP Investments Indonesia Logistics Joint Venture	LOGOS	0.20	Value-add	Asia-Pacific

Source: PERE



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