April 2023

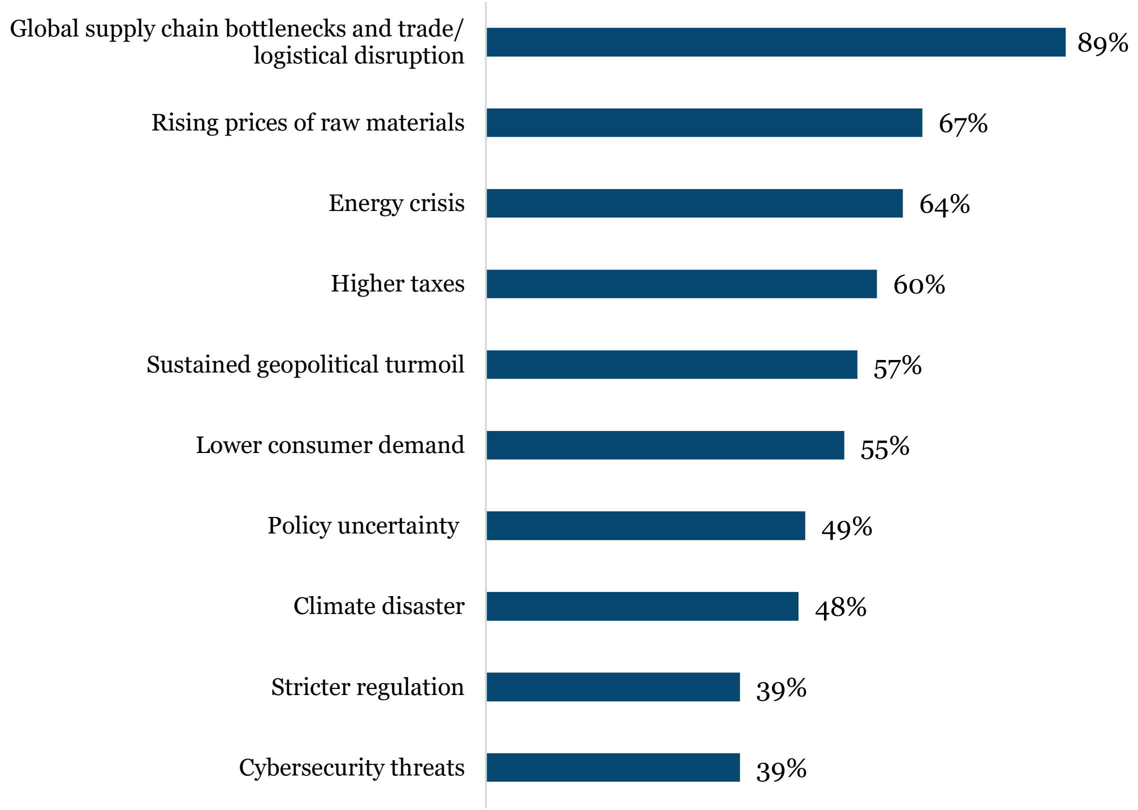
The State of Logistics Asia-Pacific Focus Report 2023

From Warehouses to Last-Mile Delivery: E-commerce Trends, Opportunities and Challenges

Navigating the post-pandemic landscape

Long-term dynamics remain compelling

Figure 1: Top risks to business growth in the next 12-18 months



The post-pandemic logistics sector faces various challenges in 2023 as it adapts to major macroeconomic upheavals. Central banks worldwide are grappling with unprecedented inflation levels and are attempting to control it through a series of rate hikes. Additionally, energy prices remain high, and the Russia-Ukraine standoff shows no signs of ending.

Although these risks are concerning for corporate leaders and may hinder business growth, the greatest worry is global supply chain disruptions. According to a December 2022 survey from Capgemini Research Institute and Global Investment Research (Figure 1), supply chain leaders fear that disruptions will persist or worsen in the next 6-12 months—a sentiment that was corroborated by new survey data from Coupa Software.

Lower consumer demand and climate disasters were also identified as significant concerns for 55% and 48% of respondents, respectively. However, these factors could be viewed as demand drivers and provide long-term benefits to the logistics sector.

Despite the expected normalisation of rent performance in 2023, the logistics sector's strong fundamentals will ensure its resilience in the face of these challenges.

Source: Capgemini Research Institute, Global Investment Research, November-December 2022, N=2,000 respondents from unique organisations

Demand Drivers turn Multifaceted

Evolving past the pandemic surge to spur further innovation in logistics

More diverse demand drivers

P5

E-commerce to stay despite more cautious spending decisions

P10

Decentralisation of supply chain – “China Plus One Strategy”

P13

Increased emphasis on ESG initiatives

Long-term relevance of e-commerce

Focus on new growth trends as the pandemic induced-boom ends

When the world ground to a halt in 2020, the logistics sector experienced a surge in activity as demand soared, particularly in e-commerce. Prolonged lockdown periods forced a surge of shoppers to turn to online shopping for the first time. According to a Google-Temasek-Bain 2021 research, Southeast Asia alone has seen an additional 60 million digital consumers since the pandemic began.

Most, if not all, logistics operators were caught off-guard by the boom and struggled to cope with their existing space inventory and insufficient manpower resources.

The competition for institutional-grade logistics assets thus commenced, driving up rent growth to unprecedented levels, which was exacerbated by the structural undersupply of quality assets. Occupiers with larger budgets were then able to expand their portfolio, giving rise to "just-in-case" inventory management, where they hold more space than they require in anticipation of more demand.

As of today, sentiments have deteriorated and real income and revenue growth have slowed, causing consumers and businesses to re-evaluate their spending decisions. The e-commerce market is already experiencing lower transaction volumes, and Ninja Van, a major e-commerce logistics player in the region, recorded either flat or negative growth in parcel volume in February 2023, worsened by the increased fuel costs.

Despite the situation, e-commerce remains a significant part of consumer shopping behaviour due to its convenience and continuous evolution. As companies assess their spatial requirements and spending, the fact remains that e-commerce is here to stay.

According to TikTok and Boston Consulting Group, the e-commerce gross market value (GMV) in APAC is estimated to reach an astonishing US$3.5 trillion by 2025, up from US$2.6 trillion in 2022 (Figure 2). The 10% CAGR over three years is a testament to the long-term impact of e-commerce.

E-commerce turns more interactive

Figure 2: Study by TikTok and Boston Consulting Group (BCG)

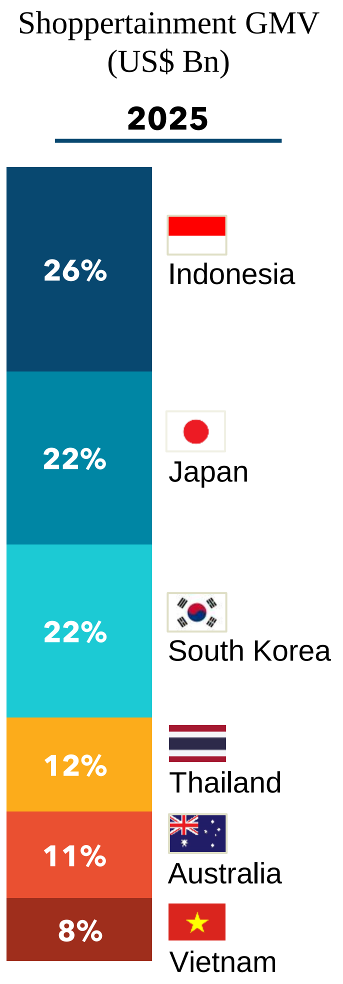
APAC Shoppertainment* is valued at USD 500 Billion today, with an outlook to cross USD 1 Trillion by 2025; key growth markets have 60%+ CAGR

APAC

	2022	2025	CAGR ('22-'25)
Total e-commerce GMV (US$ Bn)	2,600	3,500	+10%
Shoppertainment GMV (US$ Bn)	500	1,100	+26%
% share of total e-commerce	20%	30%	

Growth Markets

	2022	2025	CAGR ('22-'25)
Total e-commerce GMV (US$ Bn)	500	700	+13%
Shoppertainment GMV (US$ Bn)	24	100	+63%
% share of total e-commerce	5%	15%	



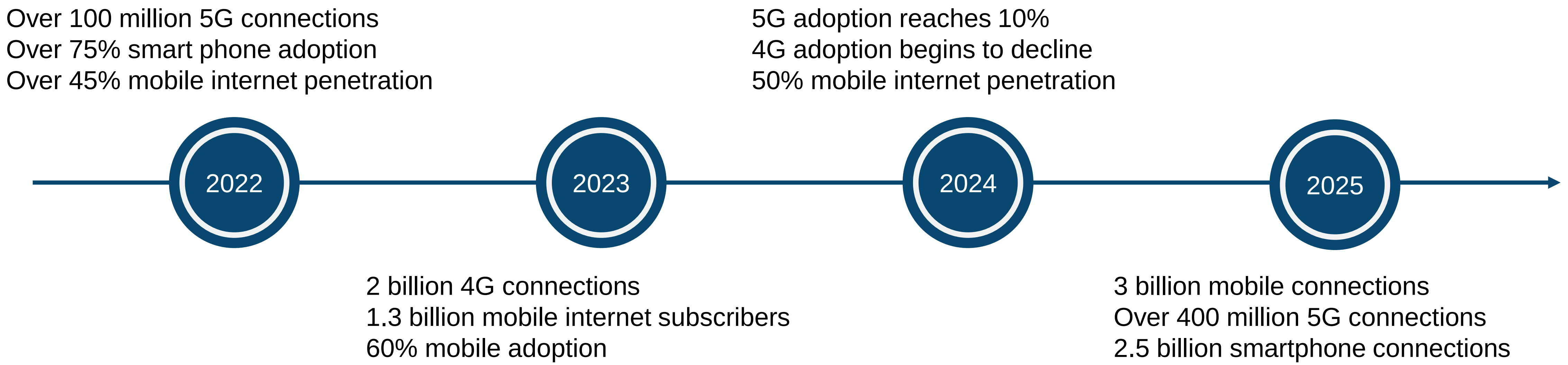
*Shoppertainment is defined as content-driven commerce that seeks to entertain & educate first while integrating content and community to create highly immersive shopping experiences.

Source: Shoppertainment: APAC's Trillion-dollar Opportunity Report (BCG quantitative survey (n=2400) in Indonesia, Thailand, Vietnam, Australia, Korea, Japan; BCG analysis; Statista; eMarketer), Knight Frank Research

Mobile adoption continues to rise

Internet penetration has yet to achieve its full potential, as the middle-class is still expanding

Figure 3: Key milestones for the mobile industry in Asia-Pacific to 2025



Source: GSMA Intelligence

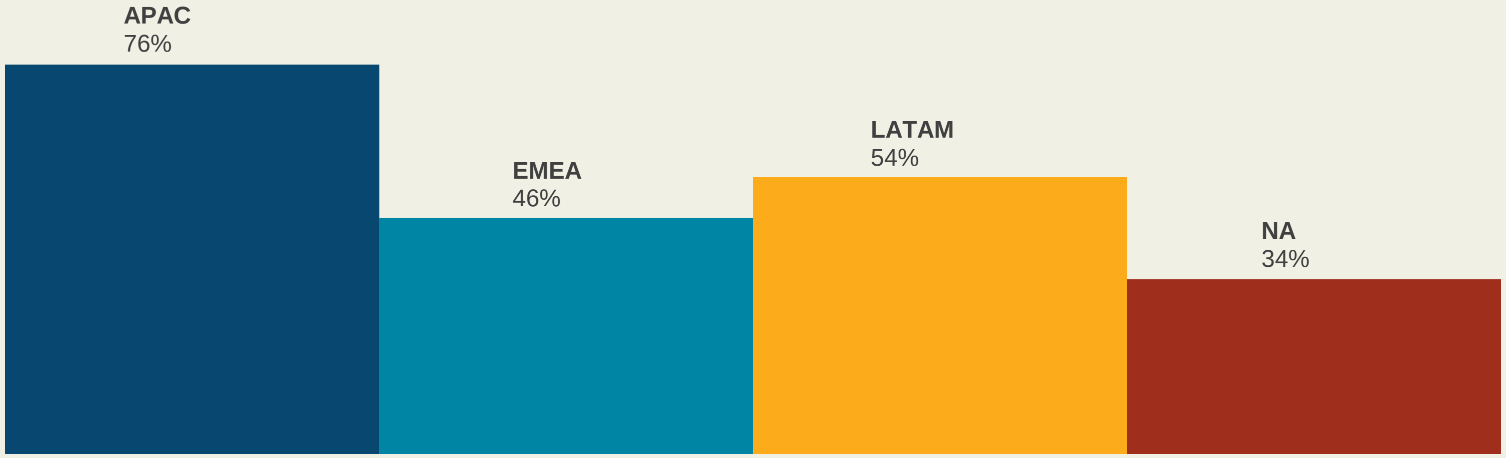
Diehard digital shopping habits

Preference for online shopping continues to be relevant despite more consumers returning to physical stores

Figure 4: Seasonal Holidays Study by Meta - a survey of nearly 18,000 people across 12 APAC markets

76%

of shoppers have watched or are open to a live shopping event online, with shoppers moving from **awareness to purchase within one session**



55%

of APAC shoppers surveyed made a cross-border purchase, relying on instant business messaging and focus on brand value

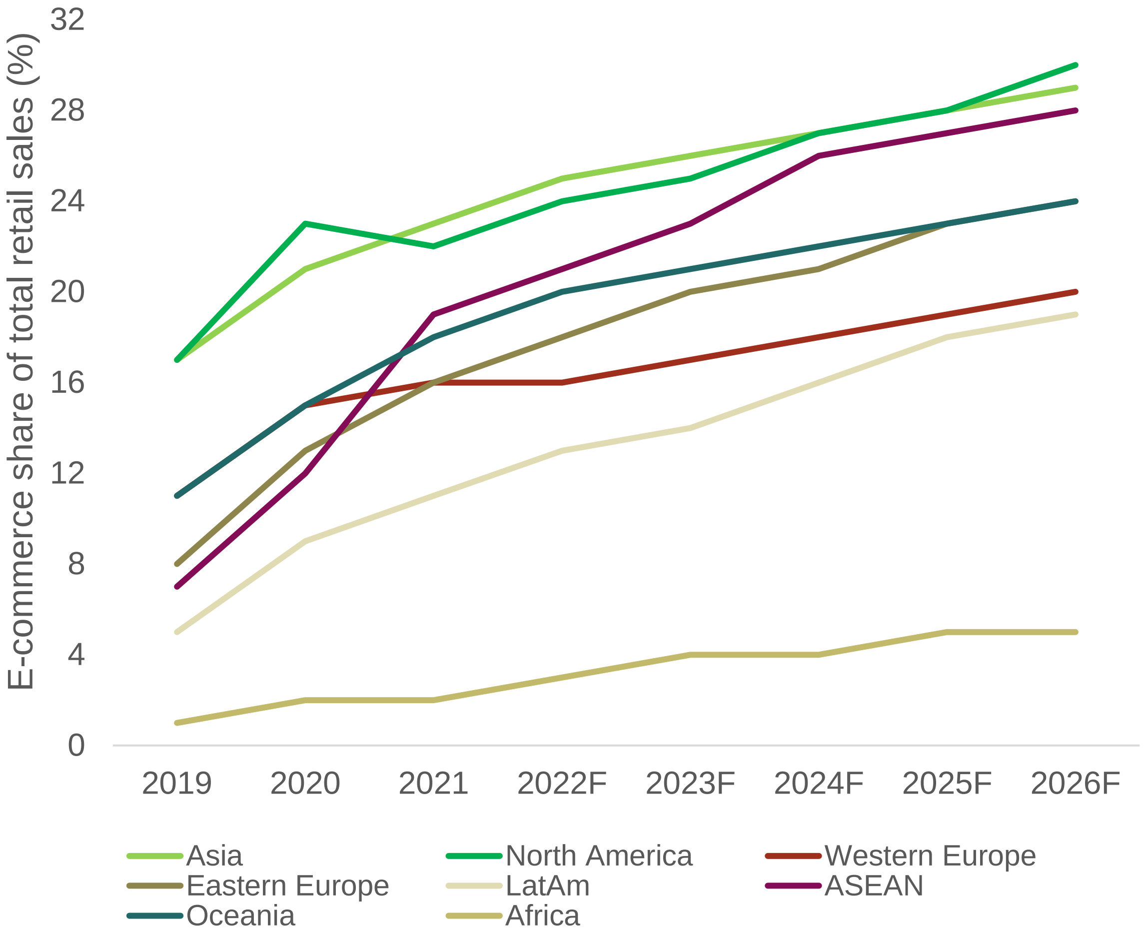
70%

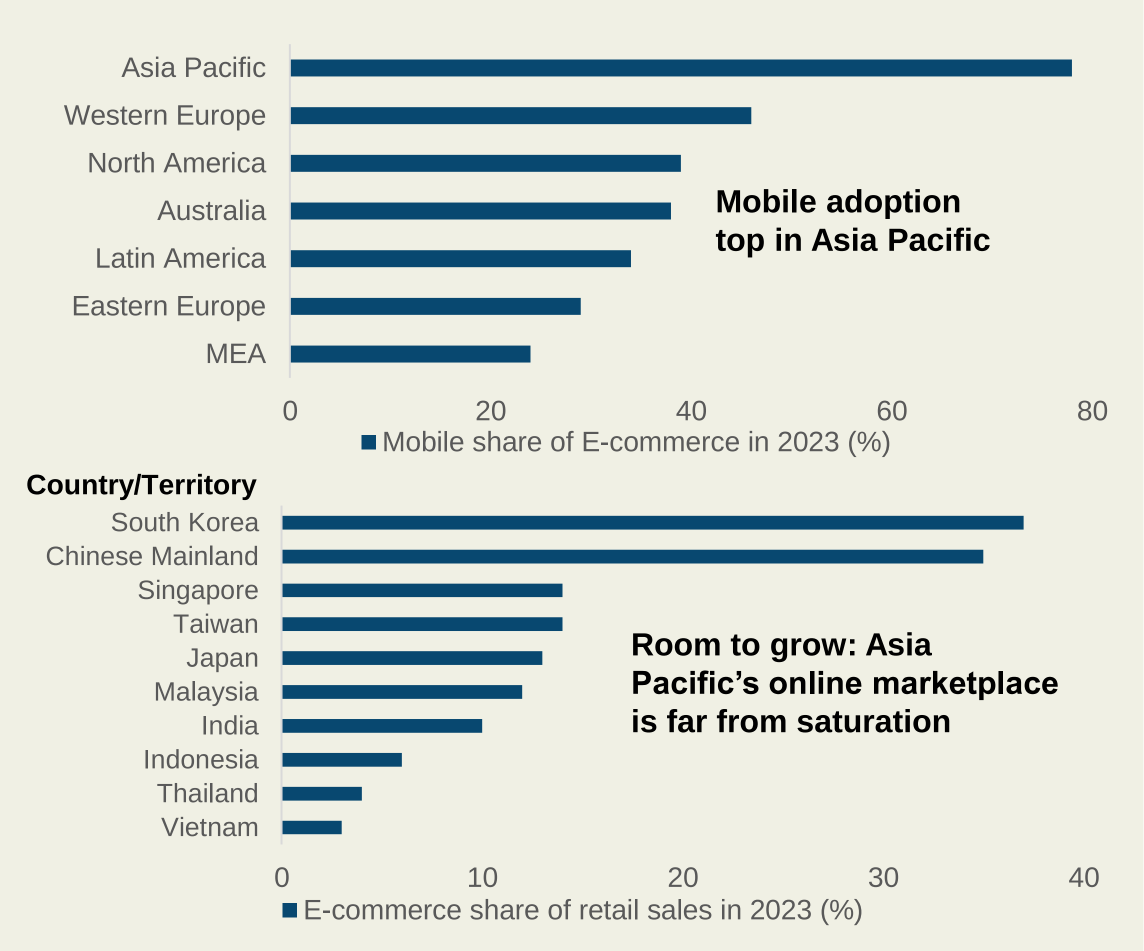
of APAC cross-border shoppers have messaged a business this past year

Top reasons for messaging a business:
✓Convenience
✓Instant responses from live shopping events

Digitalisation megatrend

Figure 5: Pandemic or no pandemic: High penetration across the Asia Pacific





Source: EIU

Building next-gen supply chains

Proliferation beyond the Chinese Mainland

Draconian Covid-19 measures in the Chinese Mainland have shattered corporate optimism and confidence. The government's strict adherence to zero-Covid policies has disrupted supply chains worldwide, causing inconvenience to both local and international businesses.

Months of frustration have prompted companies to recognise the need to decouple from the Chinese Mainland and focus on nearshoring/ reshoring to bring their manufacturing hubs closer to their end markets. While the "China Plus One" strategy has been in place for a decade, it was not until the pandemic that it gained widespread attention.

Although the Chinese Mainland economy reopened in January 2023, the risk of consolidating production activities in one economy remains. In the short-term, the rebound in demand could once again tighten the supply chain, especially if the easing is a result of weaker demand rather than improved efficiencies and supply. Additionally, the cost of production in the Chinese Mainland is no longer as affordable as it used to be. A study by the Reshoring Institute in 2022 showed that the average wage in the Chinese Mainland has significantly increased since 2012, while Vietnam and India offer some of the lowest average wages.

To rebalance their supply chains and increase resilience, manufacturing companies are relocating to other markets while retaining a stake in the manufacturing giant. According to the latest American Chamber of Commerce in Shanghai's annual business report, about one-third of the 307 companies surveyed had already redirected their investment planned for China elsewhere.

Ranking high in the choice destinations are some Southeast Asian economies and India, where they offer a myriad of benefits such as:

- ✓ Lower costs
- ✓ Growing manufacturing base
- ✓ Ease of trade
- ✓ Rising middle-class population
- ✓ Proximity to Chinese Mainland

Southeast Asia has been a top destination for foreign direct investment among emerging regions, with inflows already reaching the pre-pandemic record level of US$174 billion, according to the UNCTAD.

How have Southeast Asia and India benefitted?

Vietnam

- In 2022, the manufacturing and processing sector accounted for 61% of the total registered FDI
- In February 2023, the country’s exports rose to $29.6 bn, up 10.1% YoY, while Shenzhen (top manufacturing hub of Chinese Mainland) saw its export increase by a marginal 0.2% YoY to US$34.4 bn

Thailand

- Improved its ease of doing business - FDI applications in Thailand rose 36% in 2022, after the significant 59% hike in 2021
- 2022 export value clinched a record high of US$287 bn (5.5% growth yoy)
- Foreign investment in 2022 soared by 56% to 129 bn baht in value, up from 82.5 bn baht in 2021

Malaysia

- Foreign investors attracted to its developed telecommunications networks
- Record inflows of FDI of US$198 bn in 2022, with Singapore being the largest investor
- Manufacturing sector accounted for 43.5% of the total investment value, the largest recipient

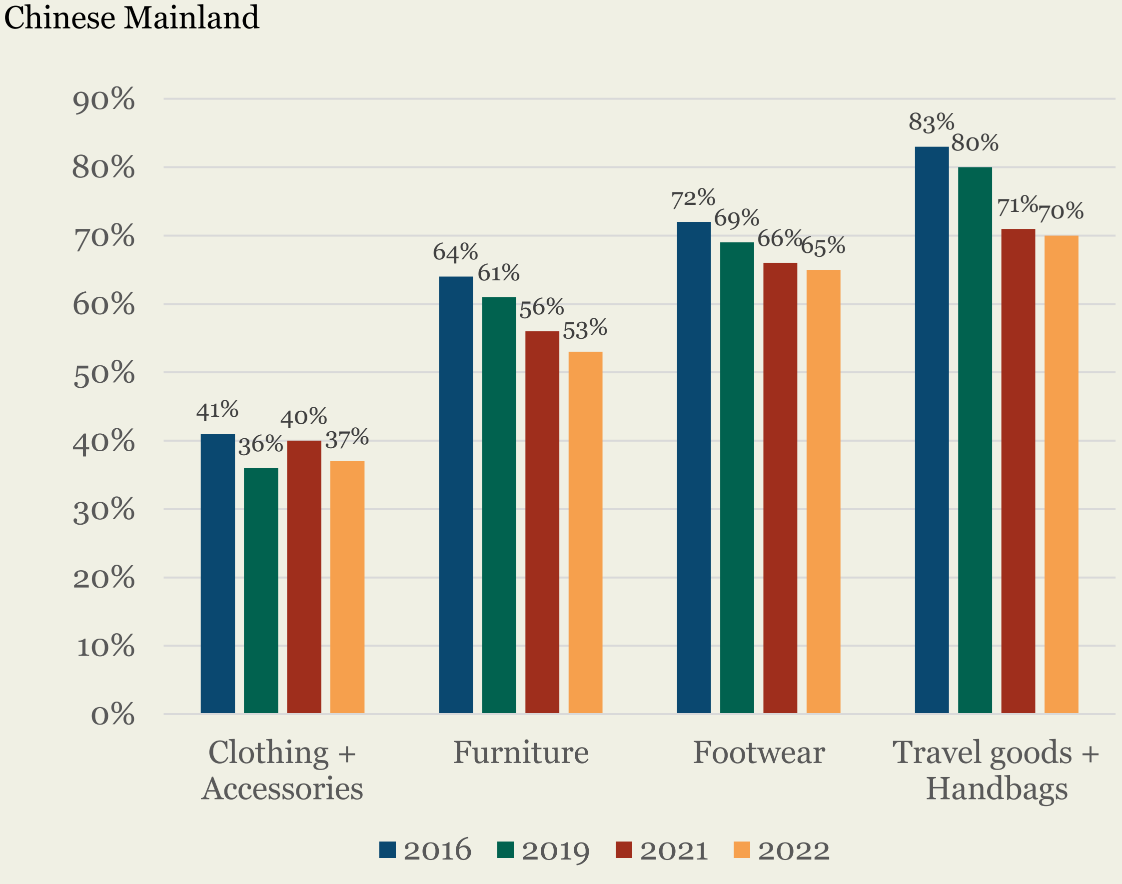
India

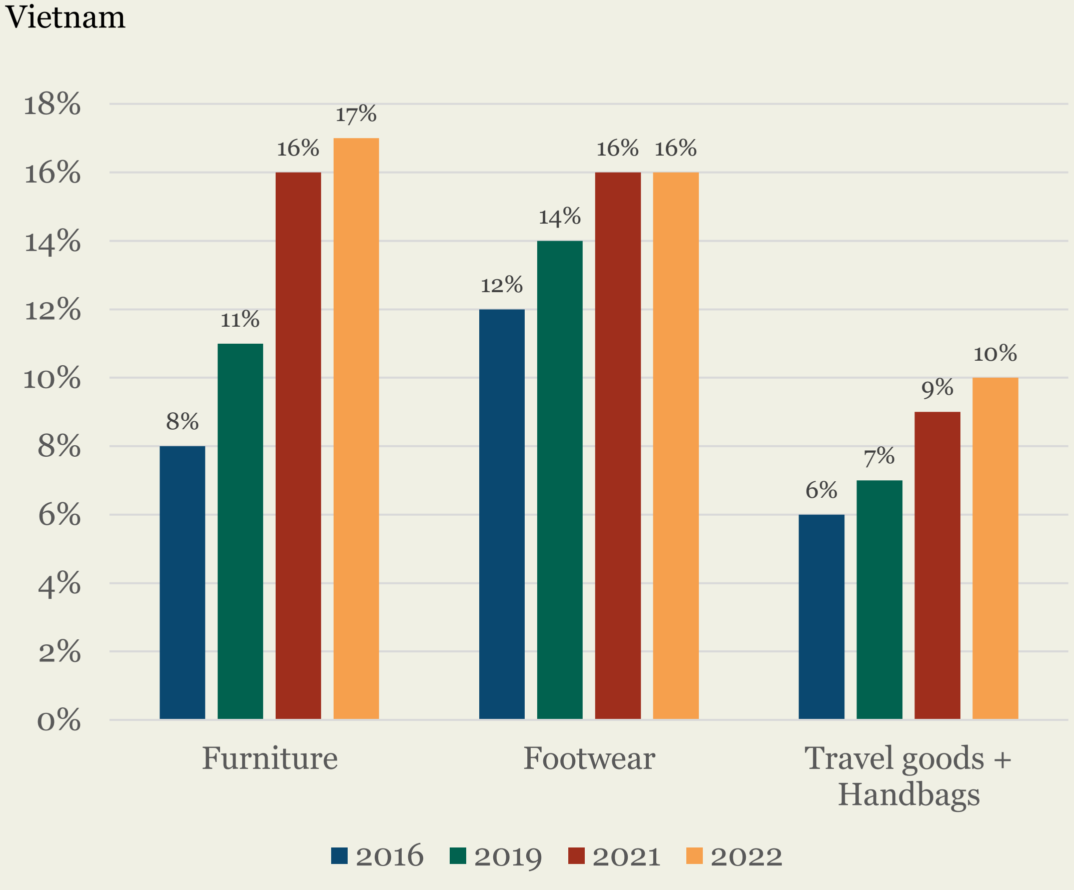
- Record-high FDI inflows of US$84.84 billion in FY2021-22
- Pharmaceutical FDI inflows quadrupled over five years, reaching US$ 699 million in September 2022, propelled by investor-friendly policies
- 100,000 direct jobs and more indirect jobs created from Apple in the past 19 months

Source: Knight Frank Research

Vietnam emerging as the largest beneficiary

Figure 6: Chinese Mainland’s share of global exports of consumer goods has fallen, while that of Vietnam has risen since 2016





Source: MDS Transmodal

Putting ESG into the limelight

The logistics sector plays a significant role in achieving ESG targets

Environmental, social and governance (ESG) has gained significant attention in recent years, especially in the wake of the pandemic, as people become increasingly aware of environmental and social issues. There has been considerable progress in encouraging organisations to be more responsible by implementing stricter regulations for monitoring and reporting ESG issues.

While ESG has been emphasised in the real estate market, it has often been overlooked in the logistics sector, which is overshadowed by strong market fundamentals. However, this approach may be short-sighted. The pandemic was a particularly lucrative period for logistics properties, but an analysis by the Institute of Real Estate and Urban Studies (IREUS) in Singapore found that green-certified logistics properties performed better and had smaller drops in valuations compared to non-green properties during the pandemic. Green logistics and warehouse properties enjoyed an average value boost of 12.7%, significantly higher than the 4.9% boost for those without green certification. Thus, ignoring the advantages of implementing sustainability initiatives today runs the risk of losing out both now and in the future.

The logistics sector is being incentivised to implement ESG practices due to the myriad of benefits, including staying competitive and aligning with industry standards. According to our Knight Frank (Y)OUR SPACE 2021 survey, 39% of APAC respondents believe that implementing ESG practices will enhance their corporate reputations, which is also expected by investors and tenants.

In addition, developers and owners can access sustainability financing, which can be directed into sustainable projects. For example, GLP's first sustainability-linked loan of US$658 million contributes to environmental objectives and promotes green buildings.

ESG standards are expected to become increasingly stringent in the future, as occupier requirements drive a flight-to-quality trend. Outdated facilities will need to retrofit and upgrade to meet expectations, or risk losing market share to competitors. Furthermore, owners risk losing rental value, returns, and exit yields, as well as incurring higher operating costs from building inefficiency.

APAC's first WELL Gold Certification

Case study of ESR South Korea logistic asset

- ESR has received APAC's first WELL Gold Certification with the Bucheon Logistics Park in South Korea for its outstanding achievements in creating a work environment that **promotes health and wellness**.
- In addition to WELL, the Bucheon facility, and the Goyang Logistics Park, have both attained the Leadership in Energy and Environmental Design (LEED) Gold Certification for their **environmentally friendly initiatives**.

ESR Bucheon Logistics Park

ESR Goyang Logistics Park

2023 Asia-Pacific Market Performance

Normalising does not mean crumbling

Asia-Pacific Overview 2022

Knight Frank

As the pandemic subsides, demand for logistics space from the e-commerce industry has decreased due to global structural headwinds, affecting the APAC logistics market.

Given the current high interest rates and inflation, we anticipate a more cost-conscious business environment. Rental market as of now remains somewhat healthy, albeit rental growth is expected to be at a slower pace than the previous year. The rental growth has slowed from 3.0% to 2.5% annually and 1.9% to 0.6% semi-annually in the APAC region.

Institutional-grade asset supply in APAC is still lagging behind demand, leading to increased costs for tenants due to rising land prices in prime city locations. To alleviate demand and rental pressures, many governments are establishing logistic precincts in neighbouring cities or provinces. However, it will take a few more years to match the scale and quality of prime areas, thus the pressure on rents is expected to persist.

We have high hopes pinned on the re-opening of the Chinese Mainland and the global ocean freight market returning to pre-pandemic levels, which should result in less disruption to the supply chain in general. There are also structural factors that will continue to benefit the sector in the long run. For instance, the growing demand for e-commerce and the increasing popularity of just-in-time manufacturing processes are expected to drive up demand for logistics services in the future.

16 of 17

cities recorded stable or increasing rents in H2 2022

Sydney

Highest semi-annual rental growth

2.5%

YoY growth for Asia-Pacific Rental Index in Q4 2022

Tempered Optimism

expected for 2023

Implications for occupiers

1. Evaluate space requirements ahead of impending lease expiries

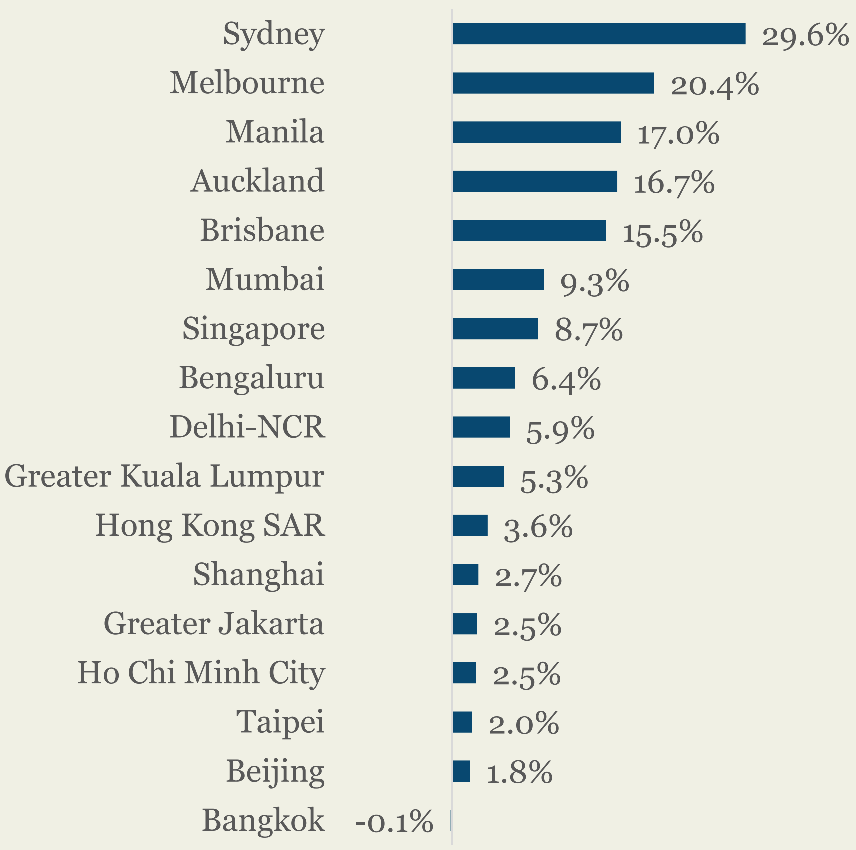
2. Plan in advance to secure quality space with favourable leasing terms

3. Explore build-to-suit options for large expansionary requirements

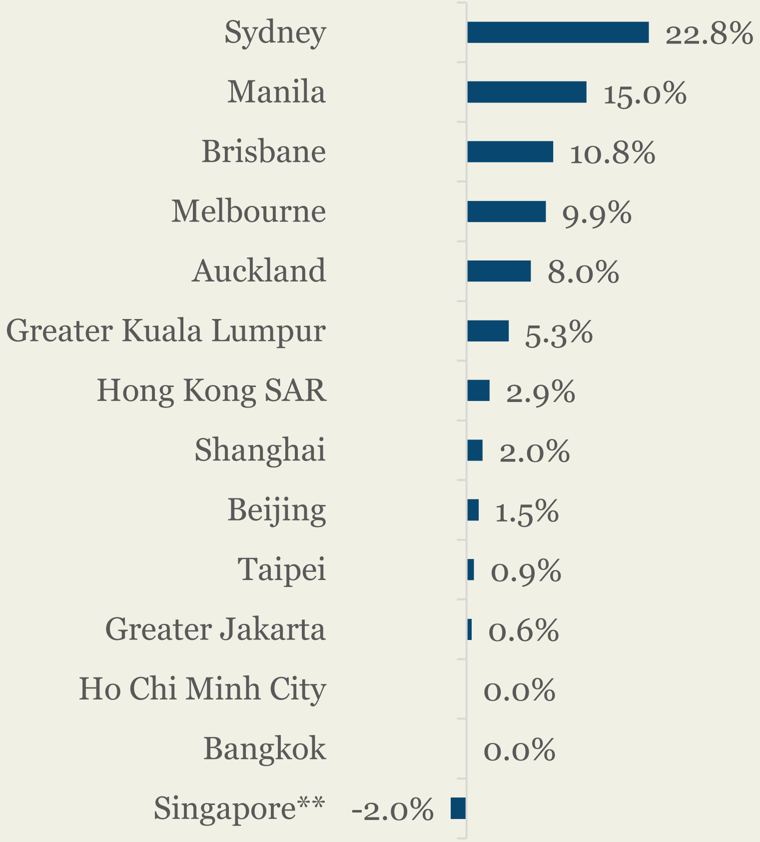
APAC Rental Performance

Figure 7: Global headwinds were gradually felt by the sector in the second half of 2022

Rental Growth Year-on-Year



Rental Growth Half-Yearly



*India tracks by Financial Year (April-March period) and is thus excluded from this chart
** Based on prevailing leasing transactions during H2 2022

Source: Knight Frank Research

1. Reviewing 'just-in-case' approach to consolidate inventory

2. Normalisation of demand for logistics space

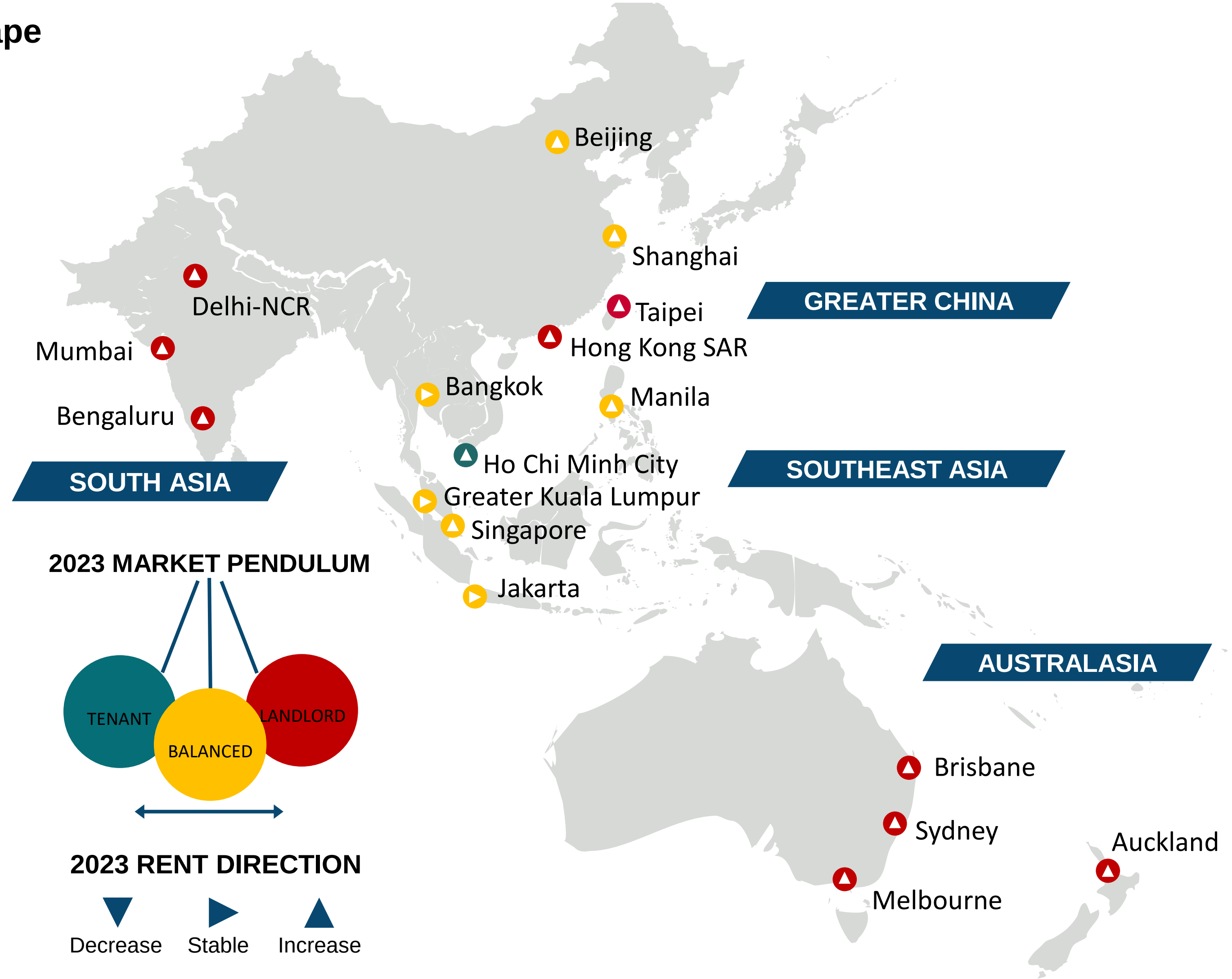
3. Moderate incoming supply expected in 2023

4. Demand rising for cold chain facilities

2023 Outlook

More aligned to fundamentals in a post-COVID landscape

- Vacancy to rise slightly with incoming supply and weakening expansionary demand
- **More cost-conscious** business environment
- Logistics market to remain **balanced** in 2023
- Rental growth set to **moderate** compared to the past two years
- Occupiers will
  - Commit to **build-to-suit solutions**
  - Gravitate towards **institutional-grade assets**
  - **Reassess their portfolio** to minimise CAPEX



Source: Knight Frank Research

Stuck in the pipeline

Supply is still playing catch-up to demand

Demand continues to outstrip supply

Knight Frank

Exacerbated by obsolete facilities and rising land prices

The surge in demand from e-commerce operators during the pandemic threw the entire logistics sector off edge as asset owners were ill-equipped with the necessary space to accommodate to it, particularly institutional grade properties. As fundamentals for the logistics sector in APAC have yet to be as well-established as the West, a sizeable number of facilities, especially those in Japan and Hong Kong SAR, are out-of-date, narrowing the pool of desirable facilities.

The delay in construction has only intensified the supply-demand imbalance, leading to fierce competition for prime logistics space. Moreover, the limited availability of land in prime city locations has driven up land values, which ultimately affects the cost borne by tenants. All these factors have contributed to the stellar rental growth that we continue to observe today, albeit tempered by ongoing economic uncertainties.

To alleviate demand and rental pressures, several authorities are establishing logistics hubs in neighbouring cities and provinces. However, these precincts are still in their infancy, and it will take a few more years for their scale and quality to match those in prime areas.

The investor VAFIE MAGAZINE

HCMC to build first logistics center in 2023

By Phan Long

Fri, December 9, 2022 | 10:43 am GTM+7

Ho Chi Minh City, Vietnam's southern economic hub, will construct its first logistics center among the planned seven next year, the city's department of industry and trade director Bui Ta Hoang Vu said Thursday.

He added that the process for a planned logistics center in HCMC's Saigon Hi-Tech Park was at the eighth stage of the
about these steps, or the center's

IPE REAL ASSETS

Hongkong Land, Astra, Logos to develop warehouses in Indonesia

BY FLORENCE CHONG | 9 FEBRUARY 2022

Two of Asia's largest listed companies – Hongkong Land and Indonesian conglomerate PT Astra International – have teamed with Logos SE Asia to develop logistics warehouses in Indonesia.

The joint venture will focus initially on Greater Jakarta to tap into Indonesia's growing demand for logistics facilities to feed exponential growth in e-commerce.

Djony Bunarto Tjondro, president director of Astra, said the joint venture would pave the way in expanding the availability of modern warehouse facilities to support the logistics sector in Indonesia.

Demand continues to outstrip supply

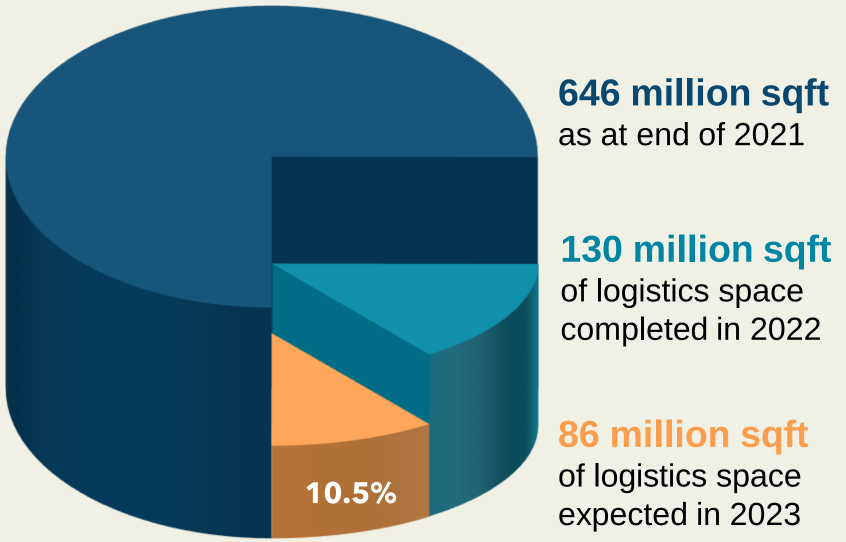
Sustained growth in ecommerce platforms

Although we foresee demand to normalise, supply is still nowhere near adequate. Prologis, the largest industrial real estate company in the world, estimated that online retailers require 1.2 million sqft of distribution space per billion dollar of online sales on average. In comparison, traditional brick-and-mortar retailers only require a third of the distribution space. If the total e-commerce GMV is going to reach the expected US$3.5 trillion in 2025 (Figure 2), we would require 4.2 billion sqft of space in APAC. With just slightly one fifth of the required stock available in 2023 (Figure 6), APAC is severely unprepared for the continuous e-commerce thrive.

To stay ahead of the competition, occupiers with deeper pockets approach developers directly to commission a build-to-suit facility, or increasingly have a large proportion of the precinct being pre-committed. New supply available for lease is hence minimal.

All in all, since supply is unable to catch up to demand in the short run, the pressure in rent will prevail. Rent for logistics space will remain high, but breakneck growth will slow.

Figure 8: Regional stock to rise by 10.5% in 2023
Existing stock vs New Stock



Source: Knight Frank Research

Solution: Industrial intensification

The power of going vertical

The requirements of today's supply chain are increasingly at odds with conventional warehouse design, which is typically large, horizontal, and flat. The demand for same-/next-day delivery has grown, and with a rise in consumer spending fuelled by the pandemic, logistics operators have been prompted to locate their facilities closer to end consumers. However, land in such locations commands heftier prices, resulting in higher rents that may not be cost-effective.

To intensify land productivity and keep rents affordable, developers have begun to build vertically instead of horizontally. These multistorey warehouses can greatly optimise productivity by being fully automated, resulting in lower operating costs as fewer employees are needed.

While multi-level facilities are traditionally found in land-scarce cities like Singapore and Hong Kong, demand is gaining traction, especially in Australia, as location becomes an influential aspect.

Vertical logistics facilities are becoming increasingly vital for the industry's future given space constraints and high demand. Significant opportunities remain in this segment to alleviate demand pressures and enable operators to stay competitive, particularly in the growth markets mentioned in figure 2.

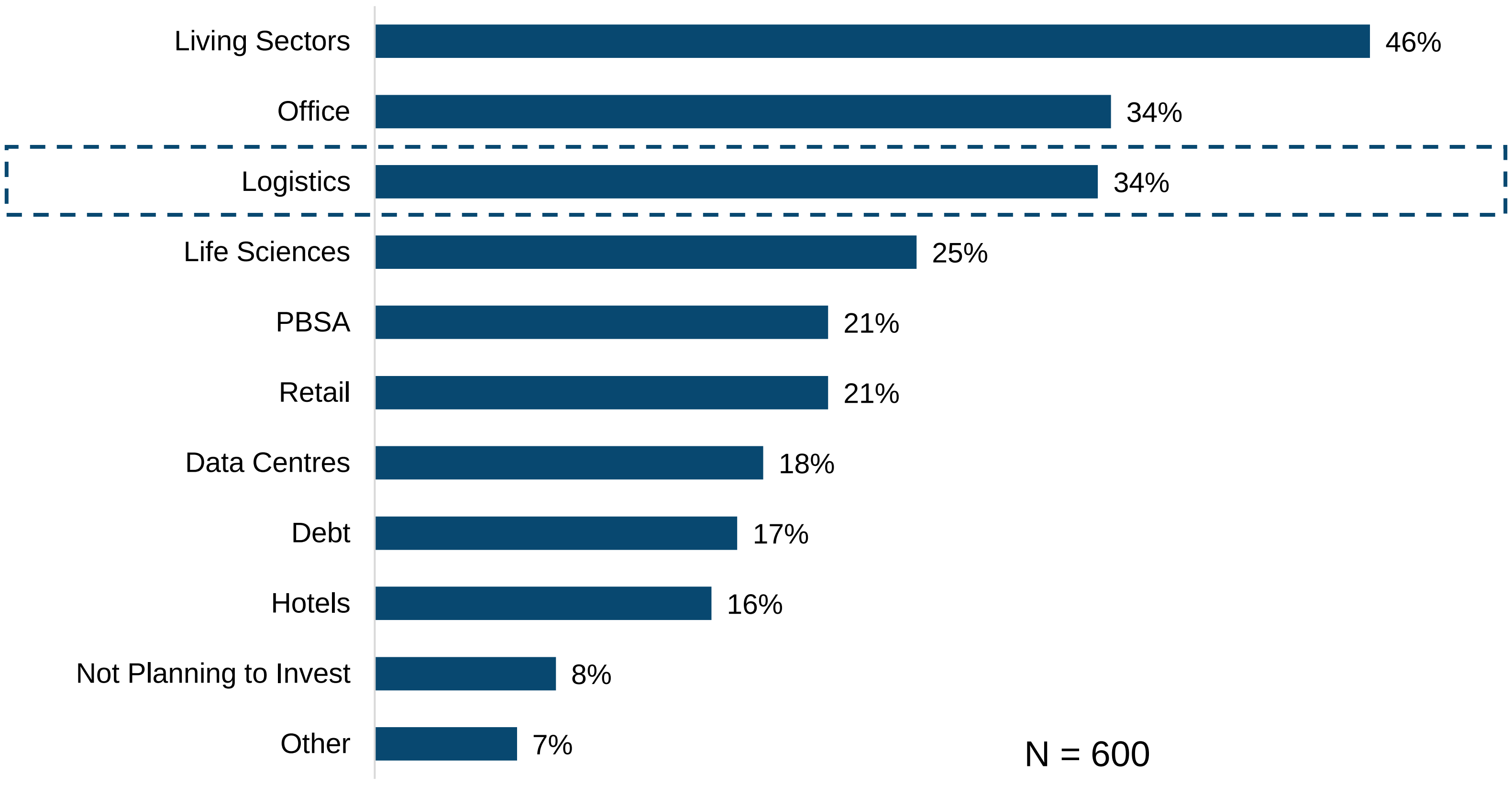
Goodman Sakai, Osaka, Japan

LOGOS Interchange Logistics Hub, Cibitung, Indonesia

What it means to investors

Logistics Assets among Key Targets for 2023

Which top 3 sectors are you targeting over the next 18 months?



Source: Knight Frank Research, Active Capital: Real Estate Strategies for Volatile Times webinar (Oct 2022)

Logistics Assets among Key Targets for 2023

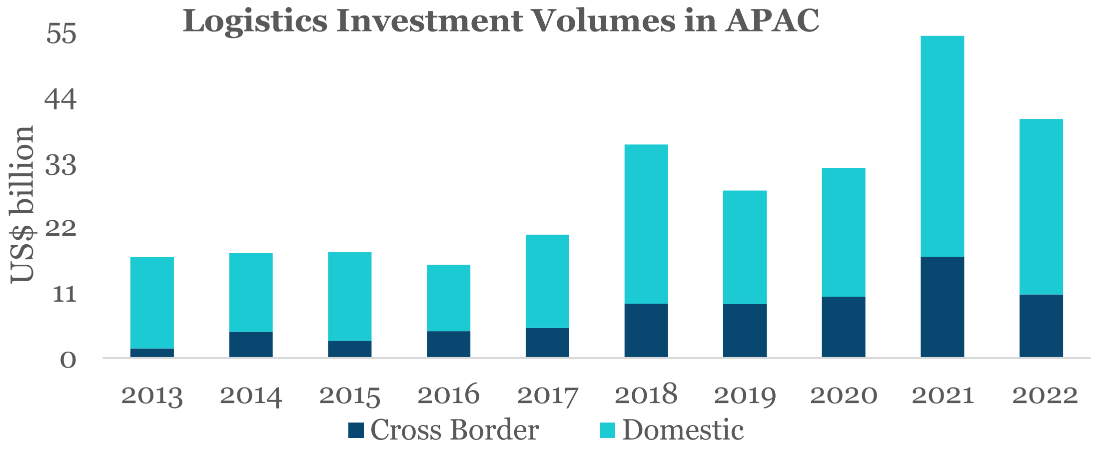
Top investment sectors being considered by APAC HNWIs by Country/Territory

Rank	Australia	Chinese Mainland	Hong Kong SAR	India	Japan	Malaysia	Singapore	South Korea	Taiwan
1	Logistics & Industrial	Residential PRS	Residential PRS	Offices	Residential PRS	Retail	Hotels & leisure	Offices	Healthcare
2	Residential PRS	Healthcare	Offices	Logistics & Industrial	Offices	Development land	Healthcare	Development land	Retirement
3	Offices	Offices	Retail	Development Land	Retail	Healthcare	Offices	Residential PRS	Hotels & leisure
4	Healthcare	Data Centres	Data Centres	Healthcare	Logistics & Industrial	Hotels & Leisure	Retirement	Retirement	Residential PRS
5	Data Centres	Student Housing/ Life Sciences	Student Housing/ Life Sciences	Retail/Student Housing	Student Housing/Hotel & leisure	Residential PRS/Office	Data Centres	Logistics & Industrial/ Life sciences	Lifesciences

PRS: Private Rented Sector

Source: Knight Frank HNW Pulse Survey

Implications for investors



Changing tack in the new landscape

With the pandemic on the wane and people regaining their mobility, investment momentum in logistics have slowed in tandem with the receding stay-at-home trend. The rapid rise in the cost of funds catching up to the yield compression that occurred during the pandemic means the sector is increasingly viewed as overpriced; heightened activity in 2021 has also hived off a substantial number of assets that is available for sale, as the market reverts to long-term hold investors. However, the region's socio-economic diversity and geographical expanse mean there remain opportunities across the many different types of assets across the logistics value chain. As assets with a 2019-20 vintage approach their five-year refinancing and exit horizons, we expect more motivated sellers to emerge in the next two years. Any repricing will present good value, while contrarian strategies could pay off with a first mover advantage.

Emerging Markets

Undersupplied and underpenetrated, emerging markets' potential remains largely unrealised despite growing investments of late. While the ability to scale does take longer in these markets, there are enough factors to drive momentum.

From just 3% in 2013, investments into the Chinese Mainland's logistics real estate have grown to comprise over 20% of overall transaction volumes in the last three years. In 2022, over 80% was spent in the lower-tiered cities. While these locations lack the bright lights of a tier-one metropolis, lower living costs and lifestyle aspirations are powering spending in these cities – something that Beijing is keen on as it prioritises domestic consumption to drive growth. This means a fundamental requirement for modern logistics properties. According to Morgan Stanley, consumption in these smaller cities could triple between 2017-2030 and account for over three-quarters of the rise in urbanisation. That would equate to a lot of requirements.

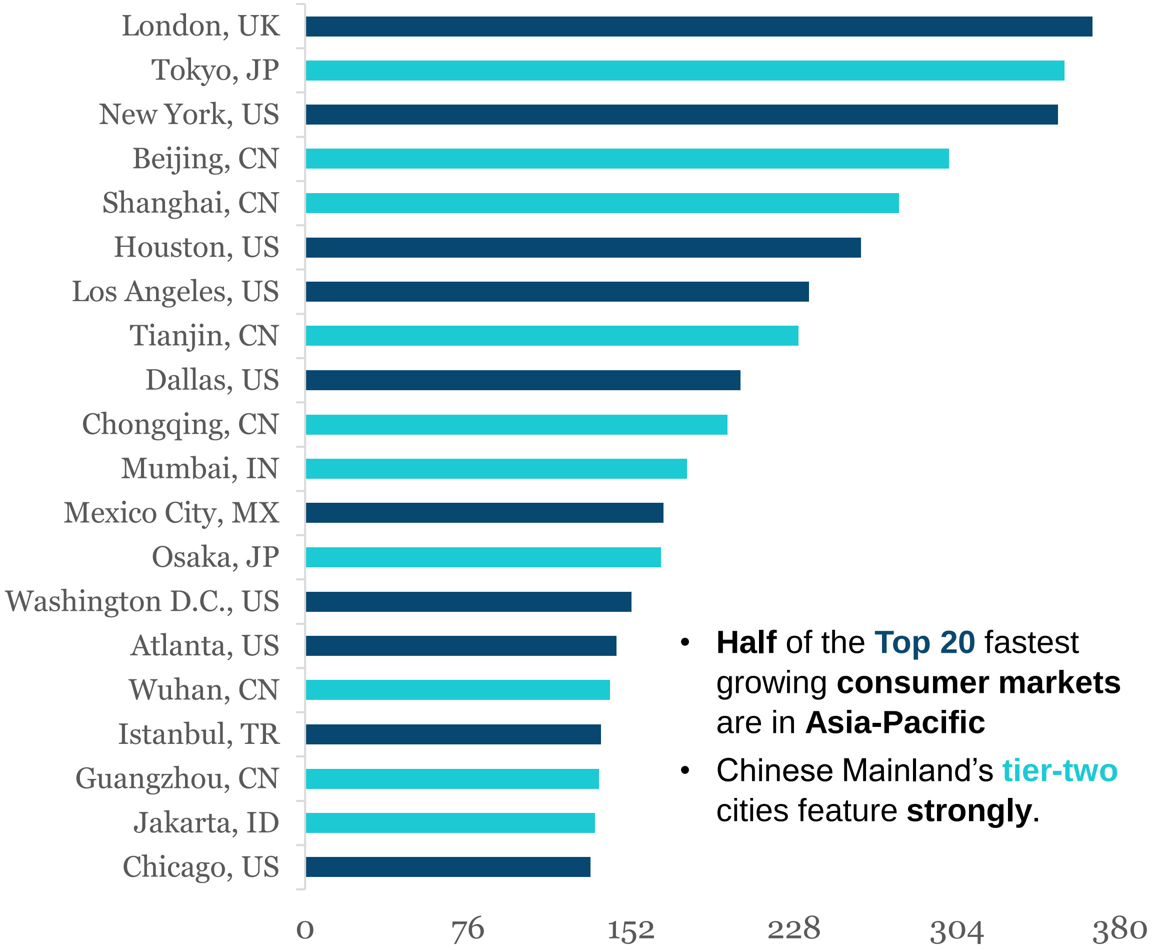
With evolving supply networks, emerging Southeast Asia is also set to become an important investment market for logistics real estate. The region remains critical to supply chain diversification, and in the short-to-medium term, will be driven by China Plus One strategies. In the longer term, its e-commerce potential is massive given its considerable and growing consumer class.

Value-add/Repurposing Opportunities

With the lack of greenfield sites for logistics development, adaptive repurposing to turn existing properties into logistics assets remain an important option to bridge the shortfall in supply. It is also an opportunity to

Implications for investors

Growth in Consumption (2015-30) – Top 20 Cities



- **Half** of the **Top 20** fastest growing **consumer markets** are in **Asia-Pacific**
- Chinese Mainland's **tier-two** cities feature **strongly**.

Source: McKinsey Global Institute

upgrade older properties with smart technology, automation and robotics, which has become essential to attract occupiers and remain relevant. With a tighter financing environment, more opportunities to acquire underperforming assets at attractive valuations are likely to emerge.

Urban Logistics

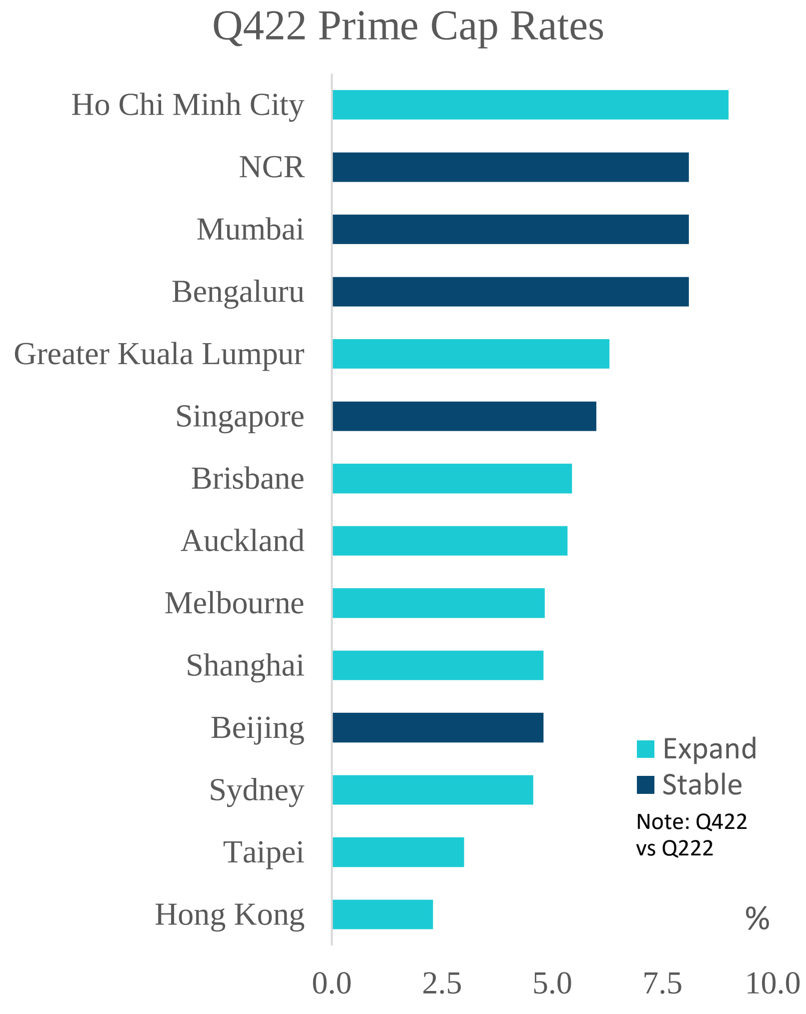
Urban agglomerations are the focal points of modern economies which underpin the growth of consumption. And it is not just from sheer numbers, as the bulk of the momentum will come from increasing incomes. With cities in Asia-Pacific boasting the highest urbanisation rates and middle-class populations, facilities serving dense populations are highly coveted. In-city courier hubs, urban warehouses and those in satellite cities are among the most popular. With same day delivery a key strategy differential in the crowded online marketplace, occupiers will remain keen to boost last mile capabilities. Add to that the difficulty in finding sites for such developments in urban settings, and we have a sustained shortage issue that gives owner-investors and landlords tremendous market leverage.

Cold Chain

The world woke up to the critical part cold chain logistics played when, at the height of the pandemic, vaccines developed required storage below freezing point. While pharmaceuticals will drive a substantial part of healthcare cold logistics, increasing demand for fresh food in tandem with the growth of the middle class and higher consumption megatrends will also drive the need for end-to-end cold chain solutions.

Logistics Investment Snapshot

Knight Frank



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