

# LOGISTICS AND REAL ESTATE 2016

STRONG DEMAND. HIGH EXPECTATIONS.



A syndicated survey of

Berlin Hyp

**BREMER**

 bulwiengesa

 Goodman<sup>+</sup>

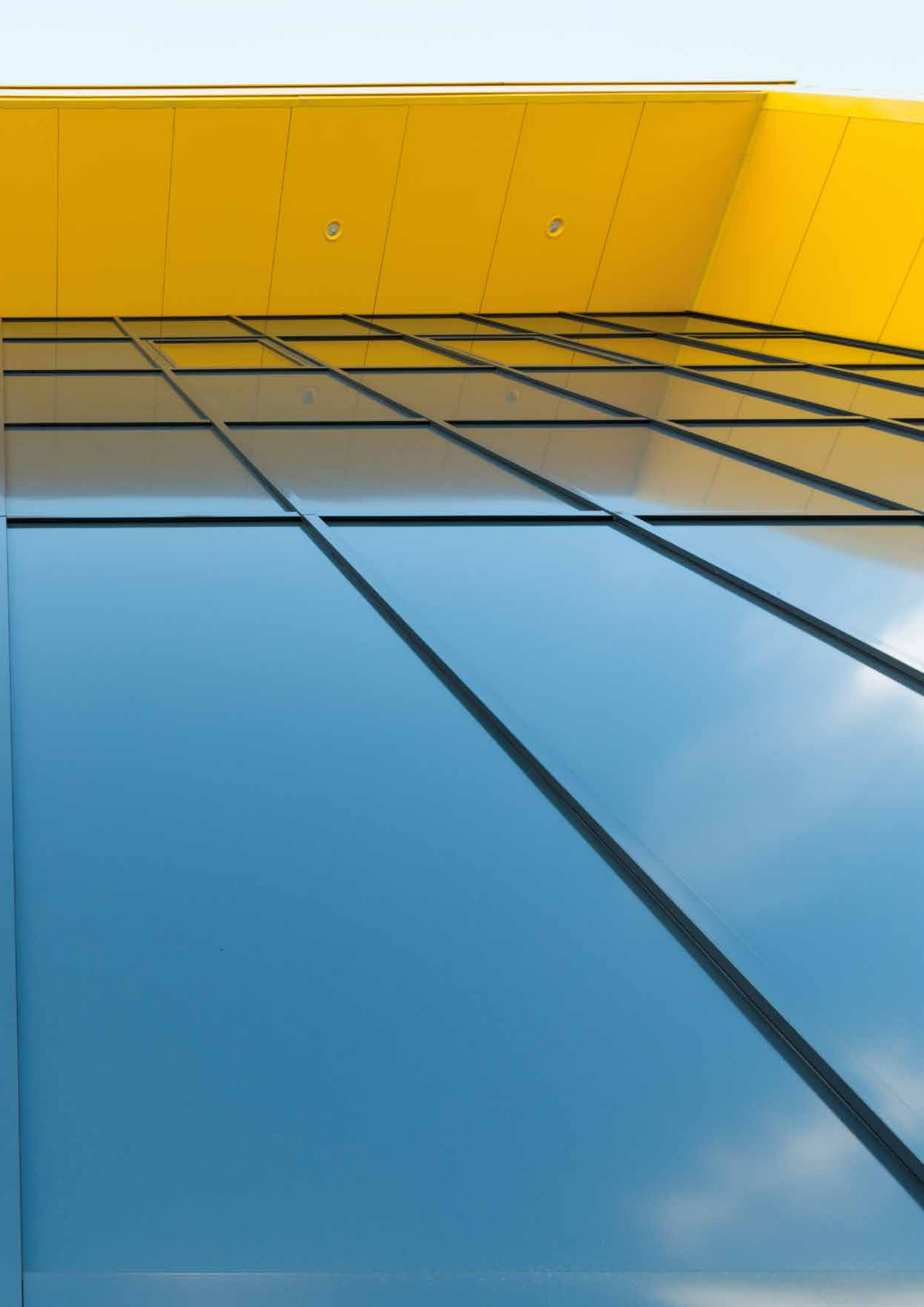
 savills



# *LOGISTICS AND REAL ESTATE GERMANY 2016*

STRONG DEMAND. HIGH EXPECTATIONS.





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# *STRONG DEMAND, HIGH EXPECTATIONS:* LOGISTICS REAL ESTATE IN TIMES OF CHANGE

The logistics business counts among the key components of the larger economy. Not only does it link production and consumption, but it has lately started providing additional services related to production, and is in many areas already integrated in manufacturing sub-processes. Requirements have increased at both the vendor and the consumer end. The logistics industry lives up to these challenges, whether they involve pre-assembly or same-hour delivery.

The highly complex and time-sensitive workflows in logistics will often go unnoticed. One reason for this is that logistics processes tend to be hidden from view: They transpire in large, remote logistics centres close to motorway interchanges or else in trading estates or industrial zones on the outskirts of major cities. It is remindful of the old adage “out of sight, out of mind” when international market operators muse why Germany, one of the biggest international export nations and global logistics market leader, maintains such a low profile in regard to its logistics assets.

Yet the value chain would not function at all without logistics real estate. Rather than being an end in itself, logistics properties are built in response to specific needs, e. g. on the part of a vendor or wholesaler. The demand is appraised and met through the interaction of property developers, principals and estate agents. The operation of proprietary logistics assets is increasingly giving way to a rental model where the occupier no longer owns the premises outright, but an end investor buys and lets the asset. The funding required for the construction or the investment is usually provided by lenders.

The survey's existing group of partners, which covers all sections of this implementation chain – lender, property developer, principal and investor – and which discussed the latest trends and issues in the world of German logistics real estate last year, will do the same in 2016. The previous survey centred on mega trends that influence production and consumption, whereas this time the survey will focus on demand drivers: Which market players and industrial sectors generate the current demand for logistics space? What do the changed expectations in logistics real estate look like and, above all, in which direction are they trending? These and other questions are addressed in the survey now before you. In addition, it will provide updates on the key insights of last year's survey, and continue the time series. The survey will be supplemented by polls among major market operators and interviews with proven experts and relevant companies.

# 10 SURVEY PARTNERS

The partners contributing to this survey series “Logistics and Real Estate,” which are known heavyweights in their fields, share the goal of pooling relevant data on single aspects into a coherent picture that will permit a long-term outlook. With this second edition of the survey, the partners involved in this joint competence centre for logistics and logistics real estate live up to their intention to supply the German real estate market and the logistics industry with the kind of information that is es-

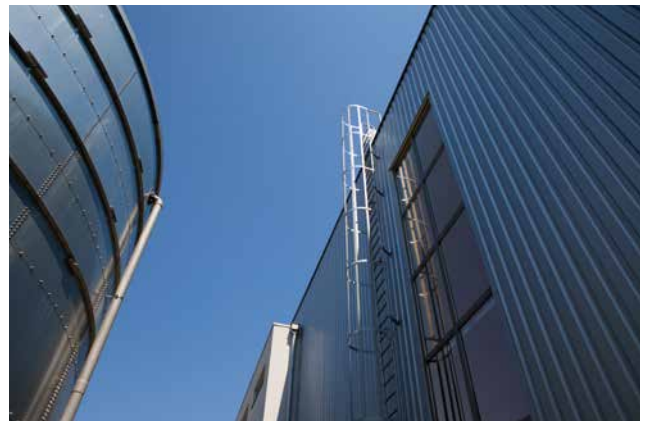
sential for making strategic decisions. They used their in-depth expertise to study the contexts and perspectives that logistics and real estate share, and to ensure that companies, interest groups and policymakers engage in fact-based dialogue, and make informed decisions.

We hope you find plenty of takeaways in the survey, and encourage you to share your thoughts with us!

## Berlin Hyp

The Berlin Hyp AG is a mortgage bank specialising in large scale real estate financing for professional investors and housing companies. For these, Berlin Hyp develops bespoke financing solutions in the asset classes residential, office, logistics and retail. As a company associated with Germany's savings banks, Berlin Hyp has access to a comprehensive spectrum of products and services. Its clear-cut focus, nearly 150 years of experience in the field, and its affiliation with the Sparkassen finance group make Berlin Hyp one of Germany's leading real estate and mortgage credit banks.

[BERLINHYP.DE](http://BERLINHYP.DE)



SEIFERT LOGISTICS CENTRE  
IN MALSCH  
(Source: Goodman)



GLASS FRONT OF THE MÖMAX  
LOGISTICS CENTRE BERLIN  
(Source: BREMER)

## BREMER

For almost 70 years, the BREMER AG has raised buildings within every kind of performance envelope from shell & core to turnkey solutions. BREMER is a mid-market company with principal place of business in Paderborn and six branch offices in the German cities of Stuttgart, Ingolstadt, Leipzig, Hamburg and Bochum, as well as Krakow in Poland. In addition to logistics buildings, its spectrum of deliverables includes office schemes, home furnishing stores, refrigerated warehouses, light industrial buildings, stadiums and hypermarkets. BREMER has completed around 6 million square metres in logistics facilities for more than 100 renowned logistics companies since 2006.

[BREMERBAU.DE](http://BREMERBAU.DE)



EXAMPLE OF A MULTI STORY LOGISTICS BUILDING IN HONGKONG

(Source: Goodman)

## Goodman

The Goodman Group is an integrated real estate group. The company owns, develops and manages logistics and commercial facilities in Continental Europe, the United Kingdom, the Asia-Pacific region, North America and Brazil. It invests in industrial zones, warehouses and distribution facilities, and has more than 23 billion euros in assets under management. For Goodman, Germany is the largest logistics real estate market in Europe. Since it entered the German market in 2006, Goodman has developed more than three million square metres of logistics space. Goodman's real estate experts operate out of offices in Düsseldorf and Hamburg.

[GOODMAN.COM](http://GOODMAN.COM)

## savills

Based and listed in London, Savills Immobilien Beratungs-GmbH is one of the leading real estate service providers with activities worldwide. In Germany, Savills employs a staff of around 200 professionals at seven offices in the country's leading real estate locations – Berlin, Cologne, Düsseldorf, Frankfurt, Hamburg, Munich and Stuttgart. The company's Industrial team headed by Bertrand Ehm and Ingo Spangenberg is the market leader in the areas of letting, sales and investment consultancy for occupiers, developers, owners and buyers of industrial and logistics real estate. Clients include mid-market manufacturing companies as well as globally operating logistics service providers.

[SAVILLS.DE](http://SAVILLS.DE)



FIRE ESCAPE OF THE GREENFIELD LOGISTICS CENTRE ACHERN

(Source: BREMER)

## bulwiengesa

bulwiengesa AG is one of the major independent analytics firms for the real estate industry in Continental Europe. For more than 30 years, bulwiengesa has supported its partners and clients in real estate industry issues as well as location and market analyses, providing detailed data services, strategic consultancy and bespoke expert opinions. The company's

RIWIS online information system delivers richly informative microdata, time series, forecasts and transaction data. The data of bulwiengesa are used by Deutsche Bundesbank for the European Central Bank (ECB), the Bank for International Settlements (BIS) and the OECD, among many other clients.

[BULWIENGESA.DE](http://BULWIENGESA.DE)

# *INNOVATIONS IN THE 2016* LOGISTICS AND REAL ESTATE SURVEY

This latest issue of “Logistics and Real Estate” maintains its key analytical features while adding new highlights in terms of contents and methodology. Key topics such as development, investment, funding and regional scoring have been carried forward but under a common theme: which drivers influence the demand for logistics floor space, and how do the shifts in requirements impact logistics assets? The survey does not limit itself to outlining purely quantitative developments, but includes many contributions by industry experts – from property developers to investors, and all the way to the occupiers of logistics real estate – who share their views regarding the expectations logistics asset will have to meet in the future. The statements are supplemented by expert panels who provided their assessments.

## *POLLING KEY MARKET PLAYERS*

There is nothing like a first-hand assessment from the field. So we asked leading developers and investors to rate the outlook for logistics real state and the associated market environment. Included in the poll were the 50 biggest property developers and the 50 leading investors in the logistics real estate market, around 100 occupiers and owner-occupiers of logistics properties, and more than 200 experts from lending banks.

## *EXPERT INTERVIEWS*

In a series of interviews, we asked renowned research and development experts for their take on the future of logistics and logistics real estate.

## THE FOLLOWING EXPERTS CONTRIBUTED TESTIMONIALS TO THE SURVEY

EXPERT: **DR. WALTHER PLOOS VAN AMSTEL**  
COVERING THE AREAS: **DEMAND DRIVERS, SUPPLY CHAIN MANAGEMENT, CITY LOGISTICS**

Dr. Walther Ploos van Amstel teaches city logistics and urban technology at the Amsterdam University of Applied Sciences. His focus is on sustainable city logistics, urban consolidation centres, as well as on horizontal and vertical collaboration. Current urban technology research programmes at the Amsterdam University of Applied Sciences focus on e-mobility, city logistics and urban-planning logistics, as well as on urban food logistics.

Dr. Walther Ploos van Amstel obtained his doctorate in the field of economics from the Vrije Universiteit in Amsterdam in 2002. Between 2002 and 2009, he taught logistics as professor at the Dutch Defense Academy. From 2009 to 2015, he served as associate professor at the Vrije Universiteit, and worked for TNO Mobility and Slimstock Professionals.

EXPERT: **ALEXANDER MÖLL**  
COVERING THE AREAS: **INVESTMENTS**

Alexander Moell is Senior Managing Director and Co-Managing Director of Hines' operations in Germany. His activities include the areas of Finance, Operations & Tenant Relations. He is responsible for all real estate activities in Germany including development and asset management. Alexander Moell was a member of Hines' Capital Markets Group, which is responsible for structuring commingled funds and raising capital in German-speaking countries for Hines' global initiatives.

Moell graduated from a university in Berlin and received his Master of International Business Administration from the Thunderbird School of Global Management.

EXPERT: **ALEXANDER MAI**  
COVERING THE AREAS: **BUILDING CONSTRUCTION, SPACE REQUIREMENTS**

Alexander Mai serves as project partner at Drees & Sommer and has worked in the field of structural engineering project management since 2006. Client projects are realised subject to the specified budgets, deadlines and quality standards. In recent years Alexander Mai has mainly managed real estate projects in the area of e-commerce. The warehouse currently under development for a globally active client involves capital costs in the nine-digit range.

Alexander Mai obtained his degree in civil engineering from the Dresden University of Technology. Alexander Mai also holds a Master of Science in renewable energy.

EXPERT: **PROFESSOR DR. NICO B. ROTTKE**  
COVERING THE AREAS: **REAL ESTATE FINANCING**

Professor Dr. Nico B. Rottke is a Partner at Ernst & Young Real Estate GmbH in charge of the area of real estate financing and capital market services with the focus on fundraising and M&A consultancy. His pro-bono commitments include work as Fellow of the Royal Institution of Chartered Surveyors (RICS) as well as work for the Urban Land Institute Deutschland (ULI) and for the Counselors of Real Estate (CRE).

# 14 EXECUTIVE SUMMARY

Whether you take the construction activities or the investments volume – the demand for logistics real estate remains persistently high. What are the expectations among market operators? Which market players and industrial sectors generate the current demand for logistics space? To answer these questions, the second issue of the survey series “Logistics and Real Estate” not only queried the databases of bulwieng-

esa, but also interviewed more than 550 insiders of Germany's logistics real estate market along with proven experts in all of the fields covered by the survey's chapters. Covering a variety of angles, the respondents provided answers to the question of how the changed requirements influence the ongoing development of logistics assets.

### 30% OF THE TAKE-UP IS GENERATED BY JUST 20 MARKET PLAYERS

More than 10.6 million sqm of logistics space was taken up in the “freight/transportation” logistics sector during the survey period. “Automotive,” the sector with the second-largest take-up (4.2 million sqm), is considerably smaller but still noticeably larger than the “food and beverages” logistics sector with its take-up of around 3 million sqm. Another sector that now accounts for a significant share of the take-up is “e-commerce,” as it generated a demand of more than 2.9 million sqm.

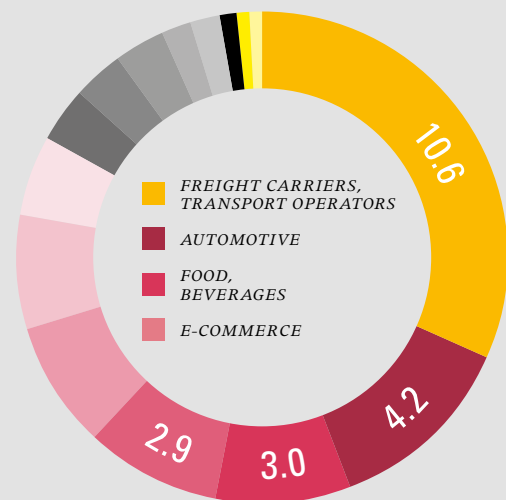
Together, the market operators with the biggest floor-space demand account for over 30% of the total take-up. Lease solutions have become the option of choice, particularly among e-commerce occupiers. Retail companies like to use their own logistics facilities.

### NEW COMPLETIONS TO INCREASE BY 40% YEAR ON YEAR IN 2016

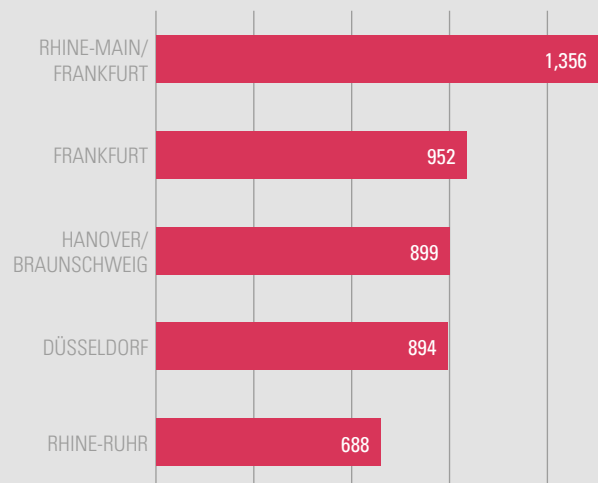
Roughly 4.7 million sqm of new-build logistics space will be completed in 2016, including projects still in the pipeline. This is 40% more than the year-end total of 2015, and exceeds the five-year average of the survey period (3.3 million sqm p.a.) by around 43%. The annual growth rate for the period is more than 8%. Especially e-commerce and digitisation are driving demand for logistics real estate.

Property developers represented the most active type of developer during the period, most notably international ones. They alone raised nearly 7 million sqm or around 43% of the total. The bulk of the newly completed space (81%) is located in Germany's major established logistics regions.

### TAKE-UP BY LOGISTICS SECTORS, 2011–Q2 2016, IN MILLION SQM



### NEW-BUILD COMPLETIONS, 2011–2015, IN '000 SQM





**ANOTHER BANNER YEAR ON THE INVESTMENT MARKET IS NOW A REALISTIC PROSPECT**

The investment turnover for pure warehouse/logistics properties climbed to 3.3 billion euros in 2015, setting a new record. It exceeded the investment market's five-year average by almost 47%. The prospect of matching the level at the very least has become quite realistic.

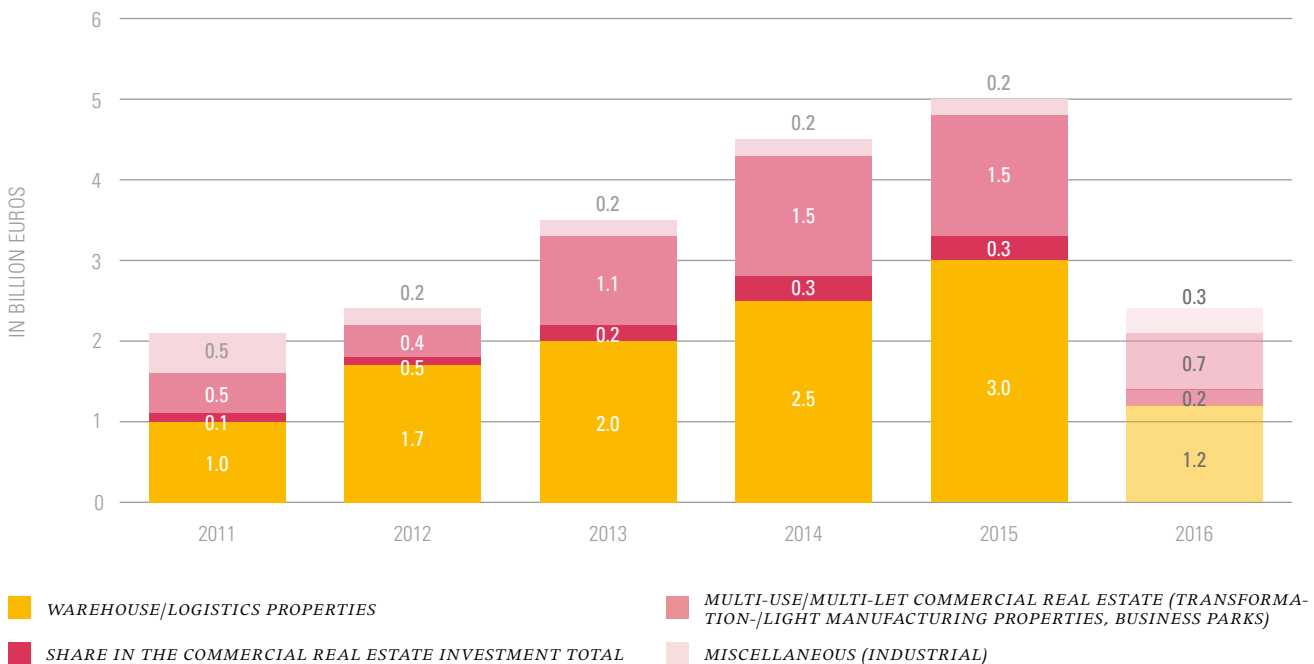
The total sum transacted on the investment market during the entire survey period equalled c. 11.2 billion euros. The 10 biggest investors accounted for a combined total of nearly 5.4 billion euros or 47% of the investment turnover.

They focused on deals in a price range of 20 to 40 million euros, with smaller investment volumes being increasingly accepted.

TURNOVER ON THE 2015 INVESTMENT MARKET EXCEEDED THE FIVE-YEAR AVERAGE BY

**46.8 %**

**INVESTMENT VOLUME, 2011–2016\***



**LOGISTICS REAL ESTATE FINANCING BECOMES AN INTEGRAL COMPONENT IN THE LENDERS' BUSINESS STRATEGY**

For many lenders, the financing of logistics properties has become an integral component of the business strategy lately, and obtaining a loan is now much easier as a result.

**PROF. DR. NICO ROTTKE, EY:**

*"Former 'evergreens' like office and retail properties have simply become too expensive for many investors because of the low-interest cycle. So they have started looking around for alternatives, and logistics real estate has definitely become one of the options. Lenders have responded to the increased investor demand, and show increasing willingness to embrace this asset class."*

\* The evaluation covers all available take-up data up to the key date of 31/07/2016.

## GOING FORWARD, THE METRO REGIONS STAND TO GAIN MOST

In the scoring of Germany's logistics regions, Hamburg has once again made the top of the list. All things considered, the logistics regions listed in the upper third showed a com-

RANK 1: **HAMBURG**

RANK 2: **MUNICH**

RANK 3: **BERLIN**

RANK 4: **DÜSSELDORF**

RANK 5: **RHINE-MAIN/FRANKFURT**

### NEW LOGISTICS PROPERTY TYPES EVOLVING

Although logistics real estate has only recently become more standardised, it continues to develop under the pressure of increased requirements. For the time being, the process remains a gradual evolution, but the systemic connection between production, distribution and consumption is subject to a fundamental structural shift that will have ramifications for logistics real estate as well.

The final chapter discusses the possible future of logistics real estate on the basis of seven hypotheses. Its conclusion: The rising demand on all levels coincides with more advanced needs, as future logistics assets will have to meet much higher requirements. Flexibility is playing an increasingly important role. Tomorrow's logistics warehouse will have to be standardised and suitable for alternative use types, but will also have to be flexible and lend itself to modifications on short notice. The accelerating pace of digitisation and automation is raising the requirements in terms of technical building services, internet connectivity and mezzanine spaces. Quantitative and qualitative scalability will have to ensure a high variability of use. This includes the capacity of a given building to accommodate multiple tenants and to permit bespoke layout options that meet the needs of a given occupier.

Several new property types will evolve, or else the demand for them will become more pressing:

- Specialised e-fulfilment centres specifically optimised for e-commerce, with extra space for data centres, photo studios and office units
- Hybrid properties that combine the most diverse processes and tasks from the areas of production, distribution and even retailing, and that pick up on the growing industry trend to

paratively stable performance. Most of the individual regions more or less retained their positions, but there are several hidden champions.

HIDDEN CHAMPIONS:

RANK 13: **AUGSBURG (↑9)**

RANK 21: **A4 MOTORWAY THURINGIA (↑6)**

RANK 16: **NUREMBERG (↑4)**

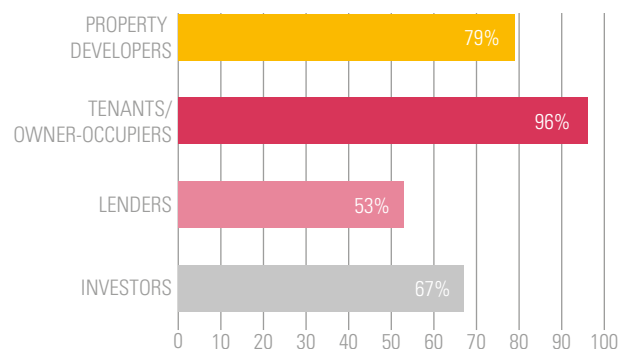
outsource these processes. The increasing demand for mezzanine space represents a first step in this direction

- Generic logistics properties that provide a maximum in flexibility and that can be repeatedly adapted to changing user requirements
- Shared warehouses ("logistics real estate as a service") where extra logistics space can be rented like in a business centre

City logistics will also adapt to the fundamental structural change, and serve as catalyst for the emergence of new building types. Based on a multi-tier logistics concepts, several radically new structures are being developed in order to solve the problem of last-mile delivery:

- Large, decentralised hubs in the greater metro regions will remain necessary.
- Consolidation centres or white-label hubs will establish themselves in the next tier and will be used by several CEP service providers as multi-tenant properties.
- The inner-most tier will consist of micro-hubs that are essential for the implementation of last-mile delivery.

### HOW WILL THE SIGNIFICANCE OF HIGH-SPEED INTERNET ACCESS AND MULTIPLE REDUNDANCY BE RATED IN THE FUTURE?



# WHAT IS DRIVING DEMAND FOR LOGISTICS FLOOR SPACE?

Strategic decisions require complex information: “What are the emerging trends? What should we prepare to face?” These are questions that need to be addressed when picking a logistics property site. Especially societal, demographic, political and economic mega trends<sup>1</sup> are exerting enormous pressure. A case in point would be the rising number of e-commerce purchases. This will continue to grow substantially in volume, and thereby increase the demand for logistics space. But what is the scale, nature and geography of demand likely to be?

This section will take a closer look at the main drivers of demand for logistics facilities. It will also seek to determine demand volume and to identify demand hot spots.

## *ANALYSIS OF DEMAND DRIVERS BASED ON OVER 15,000 LEASE TRANSACTION RECORDS*

To answer these questions, we analysed the bulwiengesa database with its over 15,000 lease transaction records for the time between 2011 and Q2 2016. We looked both at the take-up generated by new-build developments launched by owner-occupiers and the take-up from lettings. The analysis was limited exclusively to logistics facilities. Take-up representing multi-use and multi-let commercial real estate (“Unternehmensimmobilien”<sup>2</sup>) was ignored with the exception of warehouse and logistics properties, as were office and social areas.

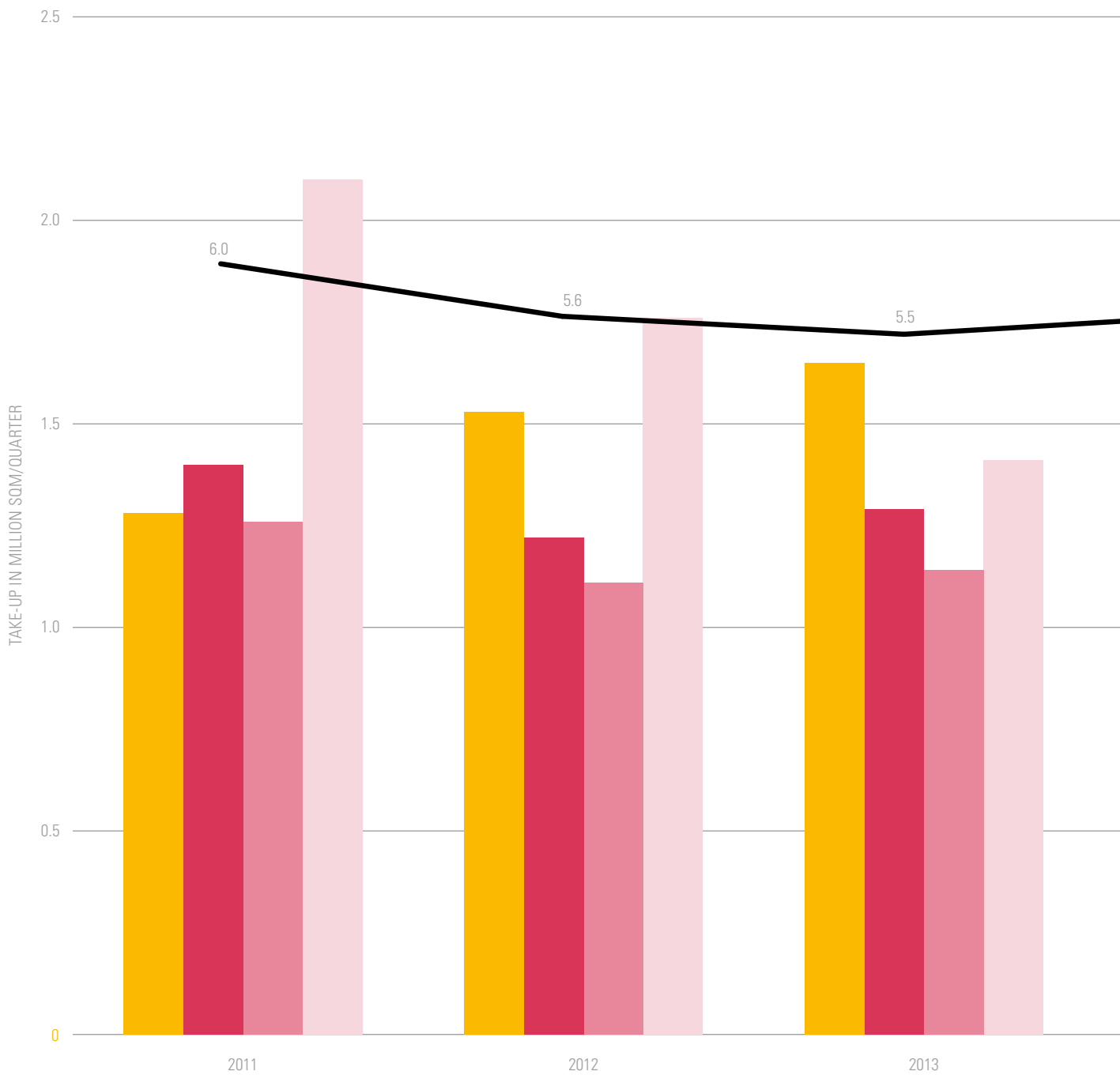
<sup>1</sup> See “Logistics and Real Estate 2015. Many Angles. One Survey.,” available for download at <http://www.bulwiengesa.de/de/publikationen/studien/logistik-und-immobilien-2015>

<sup>2</sup> In addition to warehouse/logistics properties, this asset class also includes light manufacturing properties, business parks and converted properties. For a definition of the German asset class “Unternehmensimmobilien,” see the market reports available at [unternehmensimmobilien.net](http://unternehmensimmobilien.net)

**THE ANNUAL LOGISTICS SPACE TAKE-UP IN GERMANY TOTALS C. 6 MILLION SQM.**

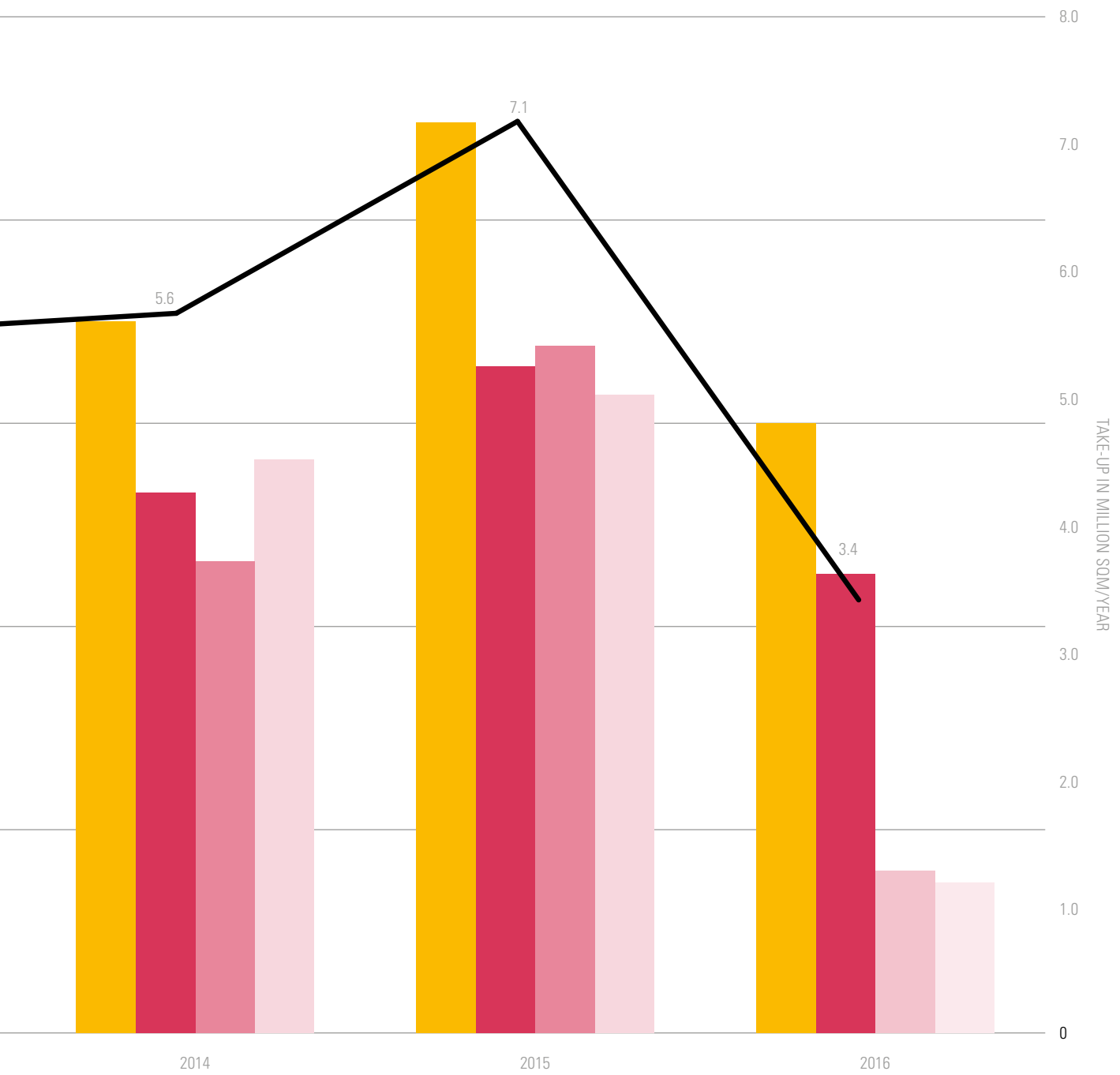
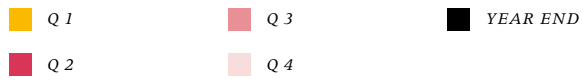
Overall, nearly 30 million sqm of logistics space was absorbed by the market over the past five years, meaning about 6 million sqm annually. In 2015, the market saw a particularly brisk performance with more than 7.1 million sqm. But demand in the ongoing year is once again huge, with a take-up total of

3.4 million euros reported to the end of Q2 2016. That being said, it should be added that the demand projected for the third and fourth quarters limits itself to the anticipated start of construction for owner-occupier projects. No lettings are on record for this period. If the average pure net absorption of previous years without the owner-occupier share is carried forward into the third and fourth quarter of 2016, a year-end take-up of more than 6.3 million sqm may reasonably be projected.



\* The evaluation covers all available take-up data up to the key date of 31/07/2016.

Fig. 1 TAKE-UP BY QUARTER AND YEAR, 2011–2016\*



## 20 WHICH LOGISTICS SECTORS GENERATE THE STRONGEST DEMAND?

The demand for logistics facilities is high. Moreover, there are no discernible risk factors that could check demand in the medium or long term. Although external shock factors such as the Brexit could admittedly cause minor dips, the mega trends discussed in the previous survey will parry possible setbacks.

To find out which industries are the definitive drivers of the demand for logistics floor space, we broke down the relevant take-up total by the type of logistics goods or the way the logistics goods are handled. The take-up is thus presented as a drilldown by logistics sectors.<sup>3</sup>

### *ECONOMIC STRUCTURE, EXPORT PERFORMANCE, CONSUMERS AND STRATEGIC LOCATION FUELLING DEMAND*

The analysis by logistics sectors clearly documents the fortes of the German macro-economy, and thus of the German logistics industry. After all, the two are very closely intertwined. For one thing, the rather high share of the manufacturing industry – compared to other countries – in combination with a high export rate creates a strong demand for logistics facilities in this industrial sector: It extends from the need to supply the manufacturing sites with raw and semi-finished products to the manufacturers' subsequent market delivery of the finished goods.

On the other hand, Germany itself has a large consumer constituency characterised by a high purchasing power. Since the country is located in the European heartland, it supplies many other parts of Europe in addition to its native population. Unsurprisingly, this is yet another factor driving up the demand for logistics facilities.

### *MAIN DRIVERS ARE FREIGHT/TRANSPORTATION, AUTOMOTIVE, FOOD/BEVERAGES AND E-COMMERCE*

An analysis of the different logistics sectors reveals the absolute dominance of the freight and transportation sector. It consists essentially of contract logistics operators and freight carriers that are not associable with a certain type of goods or any special handling requirements for the stored goods (e. g. as in textile logistics).

More than 10.6 million sqm in take-up were registered in the freight/transportation sector. The sector with the second largest take-up, which is automotive, accounts for a far smaller volume. Ranking third is food and beverages with 3 million sqm, which is still a substantial take-up volume.

It is not always possible in e-commerce to distinguish clearly between “pure players,” meaning companies whose retail business is exclusively transacted online as in the cases of Amazon or Zalando, and so-called “omni-channel retailers.” It is rarely possible to separate the logistics space that a fashion multiple, for example, has set aside for its stationary retail trade and the space allocated for its online business. If nothing else though, the analysis shows that e-commerce has lately claimed a sizeable chunk of the take-up as it generated a demand of more than 2.9 million sqm during the period under review. The industrial sector (not including automotive) accounts for a comparatively small share of 2.8 million sqm, followed by the CEP service providers with 1.8 million sqm. The shares claimed by the other sectors are noticeably smaller.

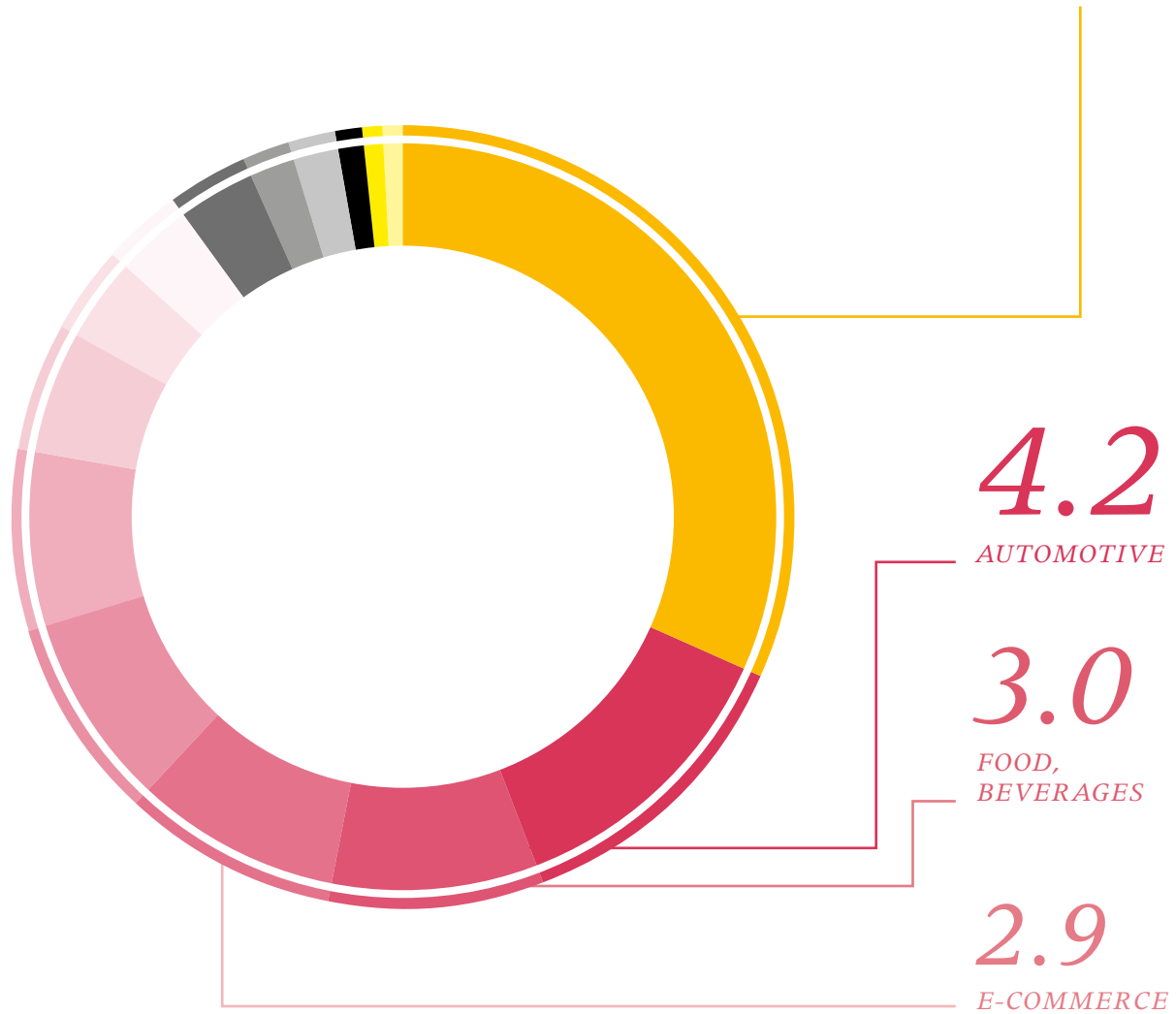
<sup>3</sup>bulwiengesa also conducted an analysis that followed the classification of economic activities. However, the classification lacks in distinctness of image when differentiating between the logistics sectors. The problem is rooted in its alignment with the German statistics system, which is incapable of isolating the e-commerce sector, for instance. This is why bulwiengesa conducts an extra analysis of the take-up by logistics sectors, differentiating the types of logistics activity that dominate the business at a given facility (for a complete overview of the logistics sectors taken into account, see the annex at [www.logistikundimmobilien.de](http://www.logistikundimmobilien.de)).



Fig. 2 TAKE-UP BY LOGISTICS SECTORS, IN MILLION SQM, 2011–2016\*

# 10.6

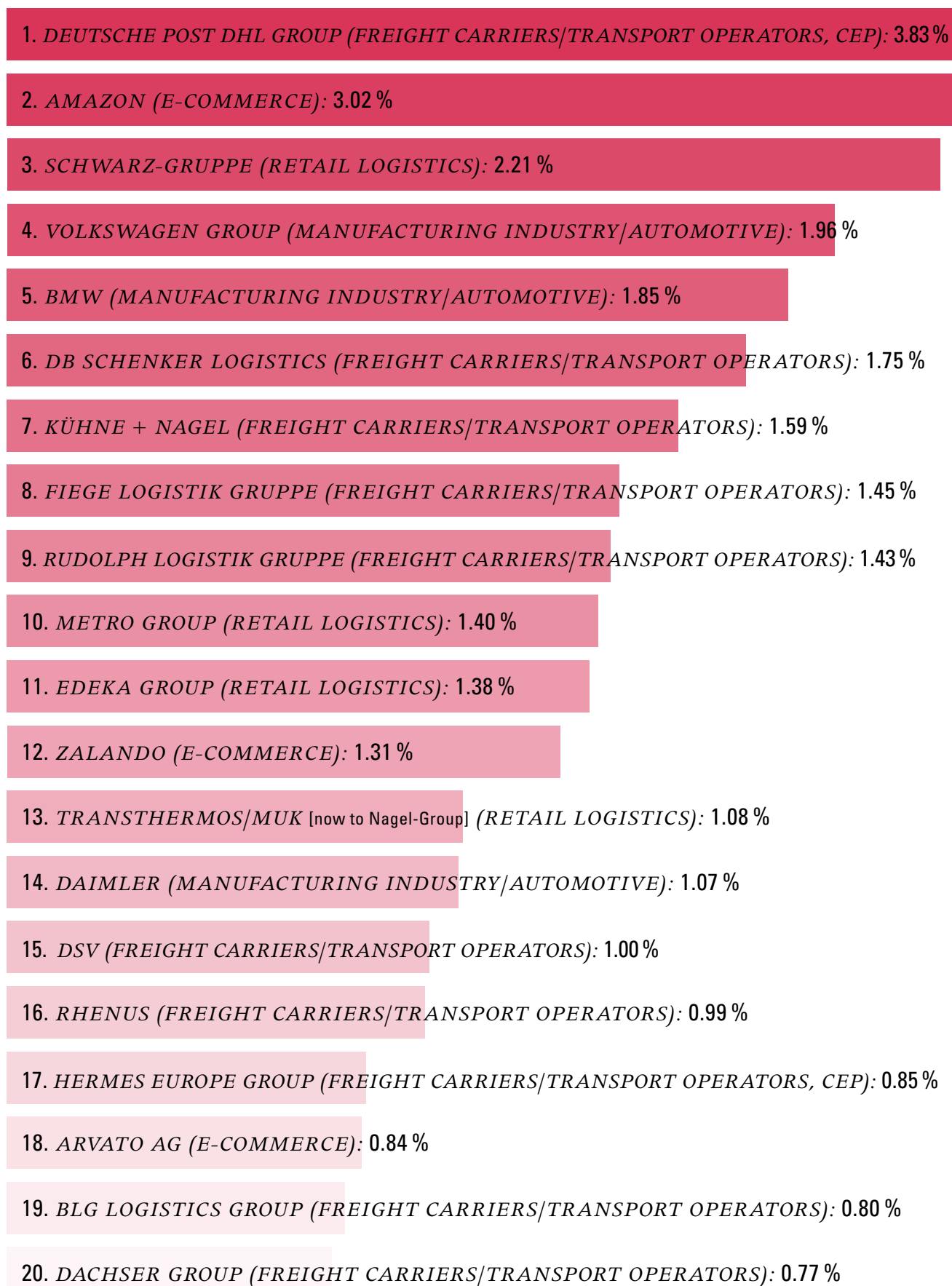
## FREIGHT CARRIERS, TRANSPORT OPERATORS



- FREIGHT CARRIERS, TRANSPORT OPERATORS: 10.6
- AUTOMOTIVE: 4.2
- FOOD, BEVERAGES: 3.0
- E-COMMERCE: 2.9
- INDUSTRIAL: 2.8
- RETAIL AND WHOLESALE TRADE: 2.5
- CEP (COURIER, EXPRESS, PARCEL LOGISTICS): 1.8
- FASHION, TEXTILE LOGISTICS: 1.2
- MISCELLANEOUS: 1.1
- HOUSEHOLD GOODS: 1.1
- MED. PRODUCTS, PHARMA LOGISTICS: 0.7
- CONSUMER GOODS: 0.6
- CONSTRUCTION AND CONSTRUCTION SUPPLIERS: 0.4
- IT, COMPUTING, DATA TECHNOLOGY: 0.3
- CHEMICAL INDUSTRY AND SUPPLIERS: 0.2

\*The evaluation covers all available take-up data up to the key date of 31/07/2016.

Fig. 3 GERMANY'S TOP-20 USER GROUPS, 2011–2016\*



## WHAT IS BEHIND THE DEMAND?

Which companies have the greatest floor space requirements? In order to answer this question, we evaluated all of records once more by attributing them to different operator groups. To this end, all units of a given group of companies were subsumed under the group's name. For example, all brands of the Volkswagen conglomerate are identified as VW Group.

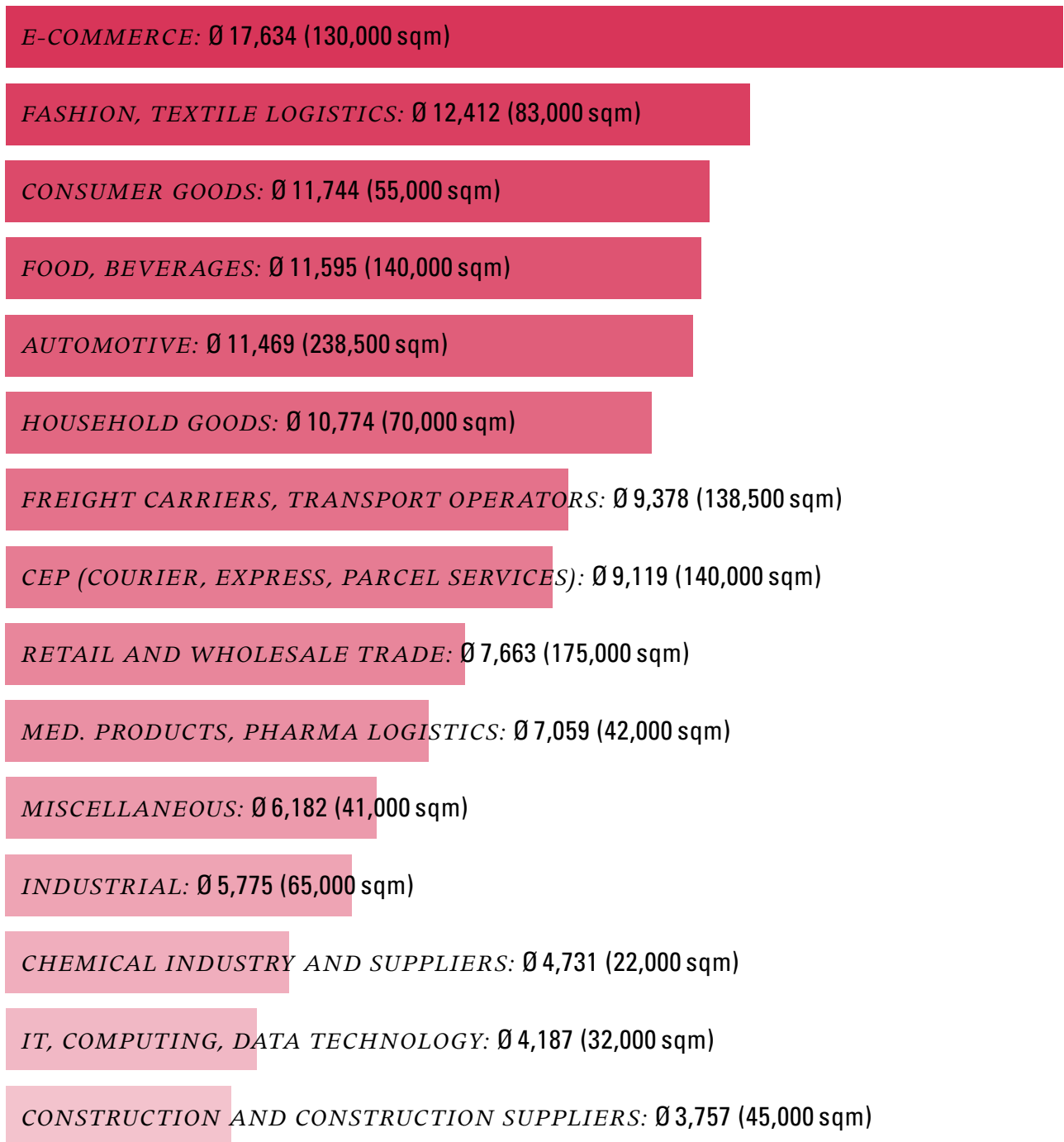
There is no full coverage of the market action, and not every lease signed or development started is disclosed. But it is reasonable to assume that the ongoing market research covers the bulk of the market action, and thus provides a sufficient basis for identifying clear trends regarding corporate drivers of the demand for space. The overview below lists the 20 companies with the greatest demand across all logistics sectors during the period under review.

The Top-20 list of companies matches the outcome of the logistics sectors analysis. It includes companies of all logistics formats (contract logistics operators, freight carriers, and CEP service providers), e-commerce and automotive logistics in the manufacturing industry. Another prominent demand driver is retail logistics.

### *THE TOP 20 DEMANDERS ACCOUNT FOR OVER 30% OF THE ENTIRE TAKE-UP*

The evaluation is based on the take-up generated by about 2,050 different companies or corporate groups. Of these, the Top 20 alone accounted for at least 30% of the entire take-up during the period under review. This illustrates, on the one hand, that there are large conglomerates with a huge logistics demand, and, on the other hand, that the rest of the field is highly fragmented and small-scale.

The analysis also revealed that the unit sizes differ from one logistics sector to the next. The logistics facilities in the industrial sector (not including automotive) and the CEP sector, for instance, are comparatively small in scale. Rarely ever do transactions in these sectors involve floorplates of 50,000 sqm or more. Quite the opposite is the case in the e-commerce sector: More than one fifth of the facilities range between 50,000 sqm and 75,000 sqm. Moreover, this sector claims the highest share (18%) in premises exceeding 100,000 sqm.



Striking to note is that the dimensions requested differ considerably. In the automotive sector, for example, lettings of up to 200,000 sqm or even larger are not uncommon. But the average is in the mid-range of around 11,500 sqm, because this size band is favoured by a large number of small and medium-sized enterprises with moderate floor space requirements. The size distribution for the seven fastest-selling logistics sectors but for also the other sectors looks like this:

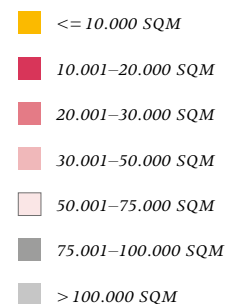
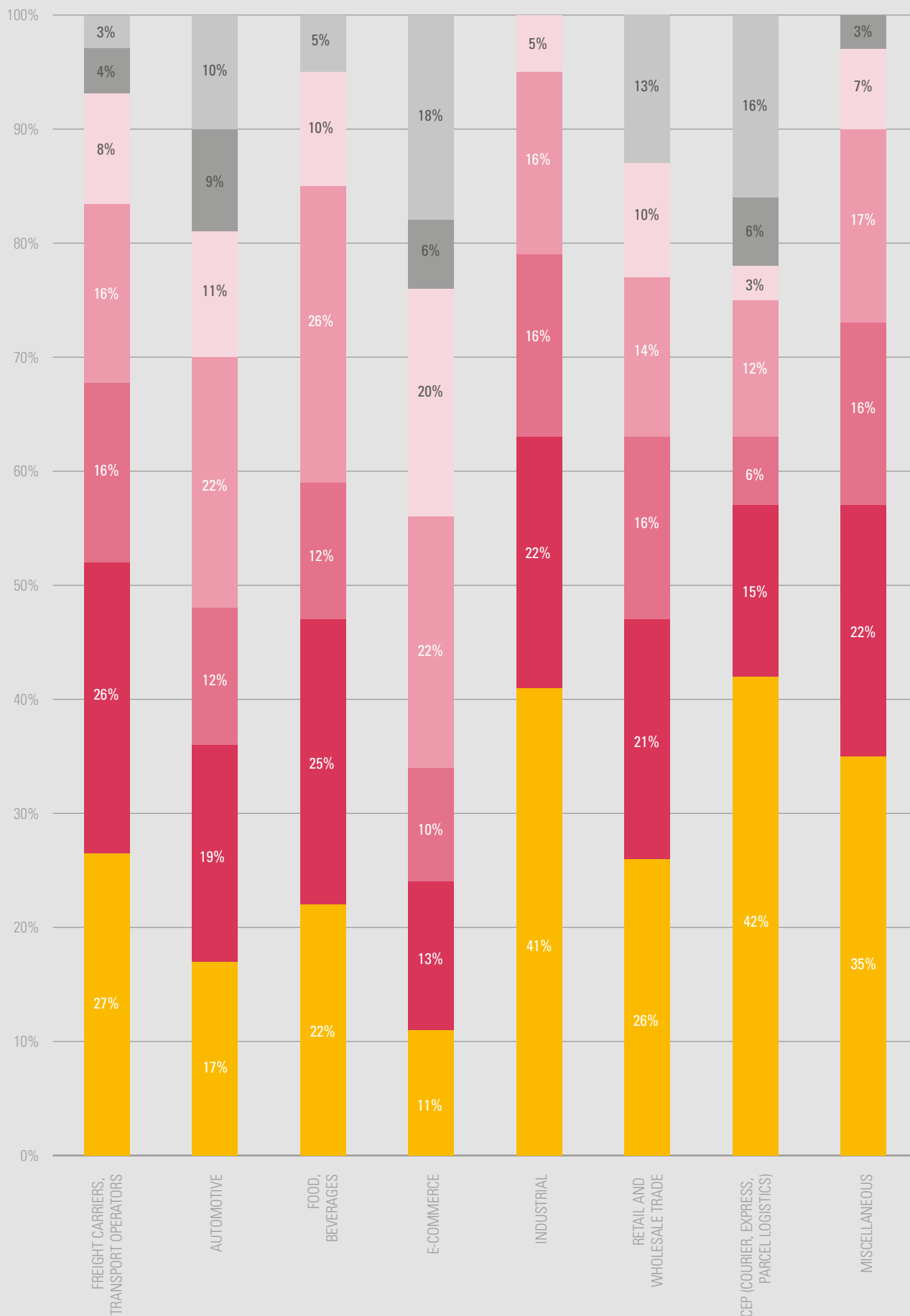


Fig. 5 SIZE BANDS OF THE TAKE-UP IN VARIOUS LOGISTICS SECTORS, 2011–2016\*



\*The evaluation covers all available take-up data up to the key date of 31/07/2016.

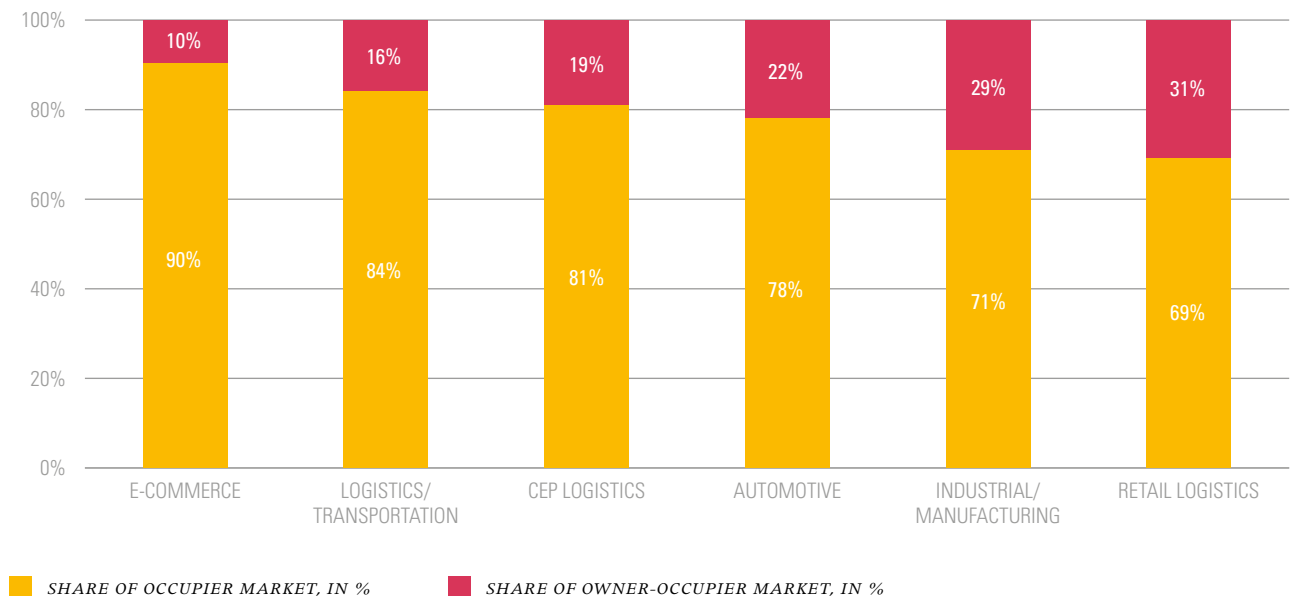
## 26 RENTING OR BUYING? TAKE-UP BY TYPE OF OCCUPANCY

It is interesting to distinguish between take-up transactions in terms of occupancy, i. e. whether premises were rented or acquired to be owner-occupied. During the period under review, between 70% and 90% of the logistics premises were rented by the occupiers – meaning that take-up was dominated by lettings.

Retail logistics operators appreciate owner-occupancy more than others, and industrial players feel nearly as strongly about it. Conversely, e-commerce clients or logistics operators care much less often about ownership and find a rental solution more appealing instead.

### *RETAIL LOGISTICS OPERATORS PREFER OWNERSHIP, E-COMMERCE OPERATORS LIKE TO RENT*

**Fig. 6** *SHARE OF OWNER-OCCUPANCY AND OCCUPIER MARKET BY LOGISTICS SECTORS, IN %, 2011–2016\**



## THE REGIONAL STRUCTURE OF THE DEMAND FOR SPACE

Demand for logistics facilities also varies among Germany's regions. In absolute terms, the demand for space is highest in Hamburg and Frankfurt or the greater Rhine-Main region. The five-year average here is an annual demand of 0.49 to 0.5 million sqm. The other regions lag behind at some distance, but trail each other more closely. The midfield demand is about 0.8 million sqm or 180,000 to 200,000 sqm p. a.

The question which logistics sectors are particularly conspicuous in which regions is highly interesting for detailed analyses – for a breakdown of the figures see the fold-out spreadsheet.

Just as interesting is the regional distribution of demand for certain logistics sectors, the examples used here being the two drivers automotive and e-commerce, respectively. To present a clearer picture we depicted only take-up of more than 10,000 sqm in the map.

### *CLOSE TO PRODUCTION PLANT: THE AUTOMOTIVE LOGISTICS SECTOR*

Demand in the automotive sector is essentially generated wherever motor vehicles are assembled. Hot spots in Germany

\*The evaluation covers all available take-up data up to the key date of 31/07/2016.



predictably include the areas around Stuttgart, Ingolstadt, Lower Bavaria, Wolfsburg, among others, with the take-up dominated by very large premises of 50,000 sqm and up. Spare parts warehouses take exception to this tendency, because they are sometimes located in the centre of Germany, well away from a given manufacturing site. A prominent example for this would be warehouses of this type in the greater Kassel area. In addition, there is a number of suppliers that are located in Southern Germany and considered hidden champions. But here as elsewhere, you will find exceptions, such as Automotive Plastic Components Berlin (APCB) in Berlin.

**GRAVITATING TOWARD METRO REGIONS:  
THE E-COMMERCE LOGISTICS SECTOR**

Logistics sites in e-commerce will often, though not always, seek the proximity of the consumer base. Many of the names are relatively unfamiliar. It is a far more voluminous field, focused on just a few locations. Sector giants like Amazon and Zalando dominate the field, and these are essentially clustered around the metro regions or inside of them. These players will rarely settle outside the established logistics regions, one of the exceptions being Home24 in Walsrode, halfway between Hamburg and Hanover/Braunschweig. The Halle/Leipzig logistics region is home to a number of sites, but none of them are particularly large.

**Fig. 7 TAKE-UP BY LOGISTICS REGION, IN '000 SQM**

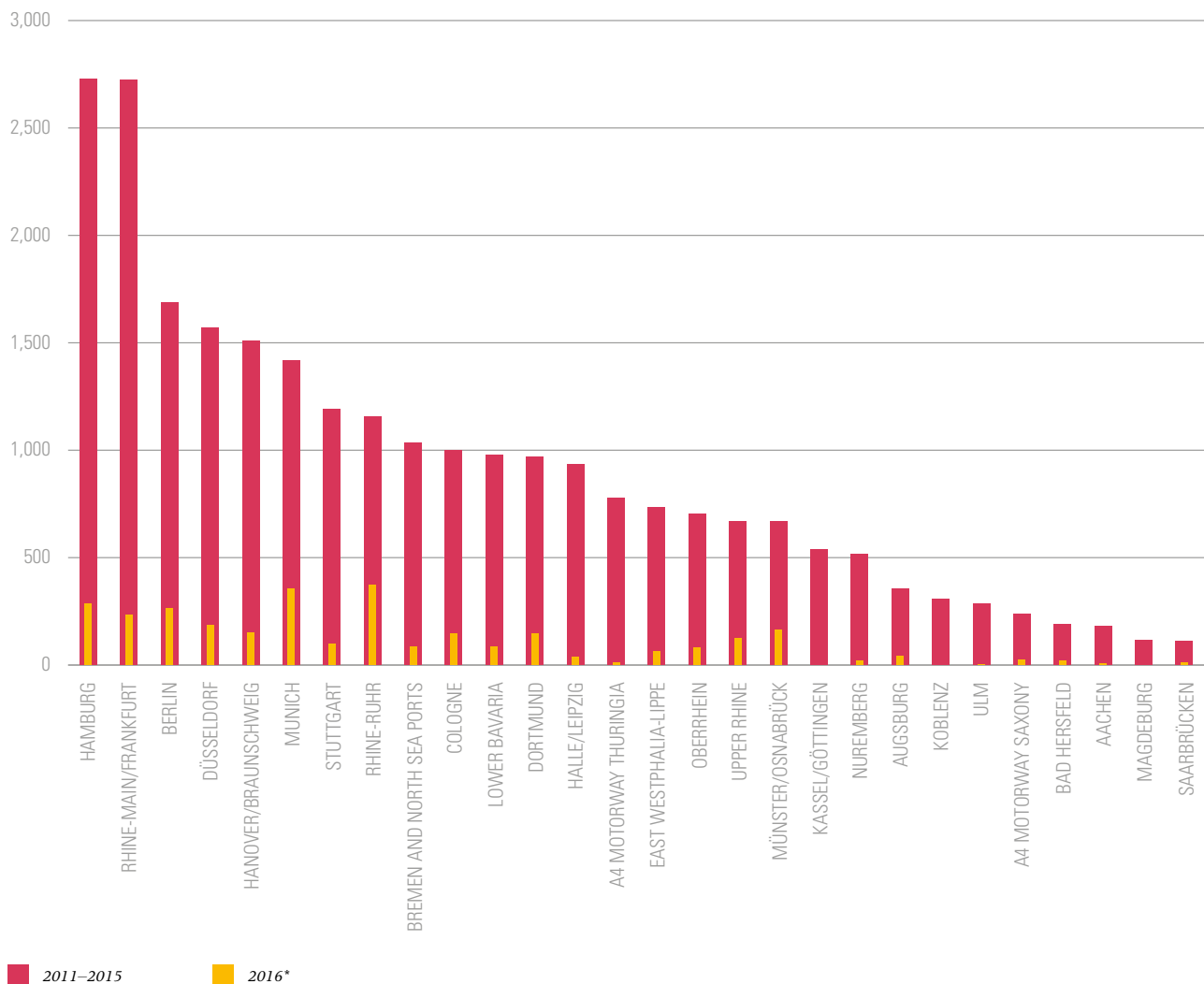
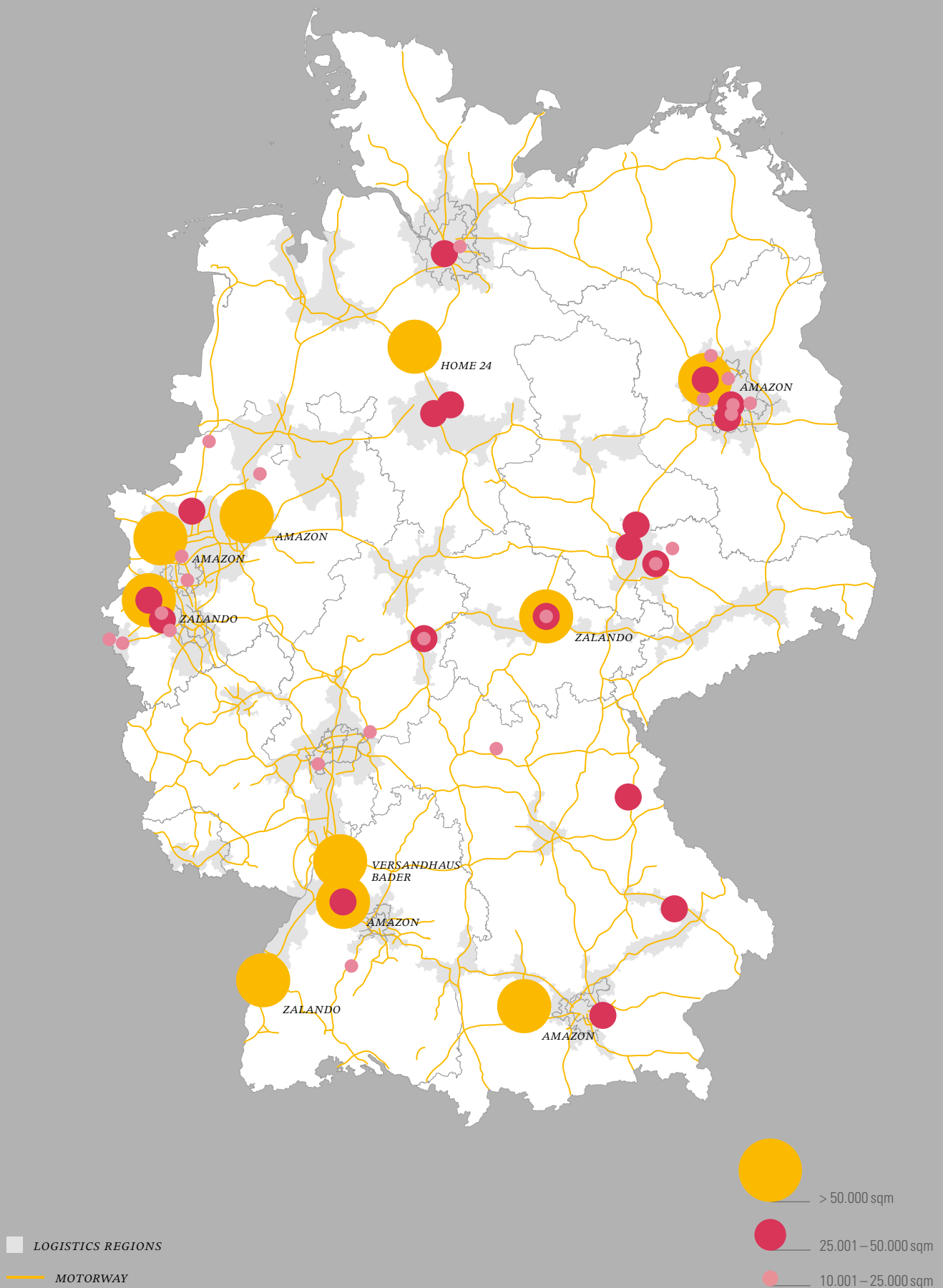




Fig. 9 TAKE-UP OF MORE THAN 10,000 SQM IN THE E-COMMERCE LOGISTICS SECTOR, 2011–2016\*



\* The evaluation covers all available take-up data up to the key date of 31/07/2016.

## 30 WHAT IS THE DEMAND OUTLOOK?

Consumption, production and distribution are under enormous pressure to change, as discussed in details in last year's survey. These three main drivers of recent years have to a varying degree triggered a surging demand in logistics facilities. And what will the future bring?

**DR. WALTHER PLOOS VAN AMSTEL, PROFESSOR FOR SUPPLY CHAIN MANAGEMENT AND CITY LOGISTICS:**

*"It is safe to assume that the demand for logistics facilities will keep going up, and that e-commerce will remain one of the most important drivers. Indeed, the growth we have seen in recent years will increase several times over – on the one hand generated in the B2C sector, and on the other hand driven by the B2B sector where e-commerce is still in its tentative early stage.*

***About the B2C sector:** End consumers continue to gravitate increasingly toward online shopping. Yet the growth rates we have seen will level out, because people continue to prefer to shop for clothes locally as it gives them a chance to try things on, and also because shopping together with friends is something of a social event. It is not possible for both segments to grow at the same rate. The situation in the food and fresh food retail trade looks very much different. Here we are seeing an accelerating international trend toward online purchases. It will eventually catch on in Germany, too, although it may take a little longer as is characteristic for Germany. In the medium term, e-commerce could realistically claim a share of around 20% of the entire retail trade. In fact, some experts predict 30% or more by 2025/2030.*

***About the B2B sector:** Internet use in wholesale trading and in the trade between companies is in a nascent stage. It is here that I think we are heading for an enormous growth surge that could end up having five times the volume of the B2C sector. So logistics solutions will have to be found to accommodate it."*

There are drivers beyond the e-commerce sector that will keep pushing up the demand for logistics facilities, as Walther Ploos van Amstel elaborates using an example.

*"There are a lot of aspects in our day-to-day lives that will be subject to profound change as a result of digitization and technological advance. A case in point would be the whole area of home care. Here, logistics solutions are implemented on demand, meaning in a highly bespoke and need-based manner. Let's assume, for example, a patient gets a different quantity of drugs in varying dosages each day. Instead of filling his or her own phials and possibly getting things wrong, the physician may forward the prescription to a wholesale pharmacy which delivers it in the form of personalised custom blister packs to the patient. It is a safe and convenient solution. Whenever changes need to be made, the physician could tend to them immediately via remote diagnostics, and forward the changes to the pharmacy. This will save all players involved time and travel, which in turn will help cut costs while enhancing the security of supply."*

*“It is safe to assume that the demand for logistics facilities will keep going up, and that e-commerce will remain one of the most important drivers.”*

DR. WALTHER PLOOS VAN AMSTEL







HONGKONG DYNAMIC  
CARGO CENTRE  
(Source: Goodman)



# *THE DEVELOPMENT* *MARKET* FOR LOGISTICS REAL ESTATE

This chapter evaluates the latest logistics real estate developments. In addition to analysing the status quo, it will also take a brief look at the road ahead. Who are the leading developer groups in Germany? Are there any demonstrable trends? Are the identifiable patterns in regard to operators and regions in Germany?

To find out, the bulwiengesa real estate database was analysed, which lists all building activities identified (through research). We also maintained a dedicated in-depth exchange with the leading 50 market operators active in warehouse construction in Germany. We looked only at pure storage and logistics warehouses. Conversely, we ignored light industrial and other commercial real estate such as business parks or similar, which are covered by the market report on multi-use and multi-let commercial real estate by INITIATIVE UNTERNEHMENSIMMOBILIEN, and which are not part of the logistics market.

Our analysis ultimately drew on a data pool of 1,032 assets built between 2011 and 2015, plus 444 pipeline assets (projects either under construction or in an advanced planning stage). Cut-off date for the evaluation was 31/07/2016.

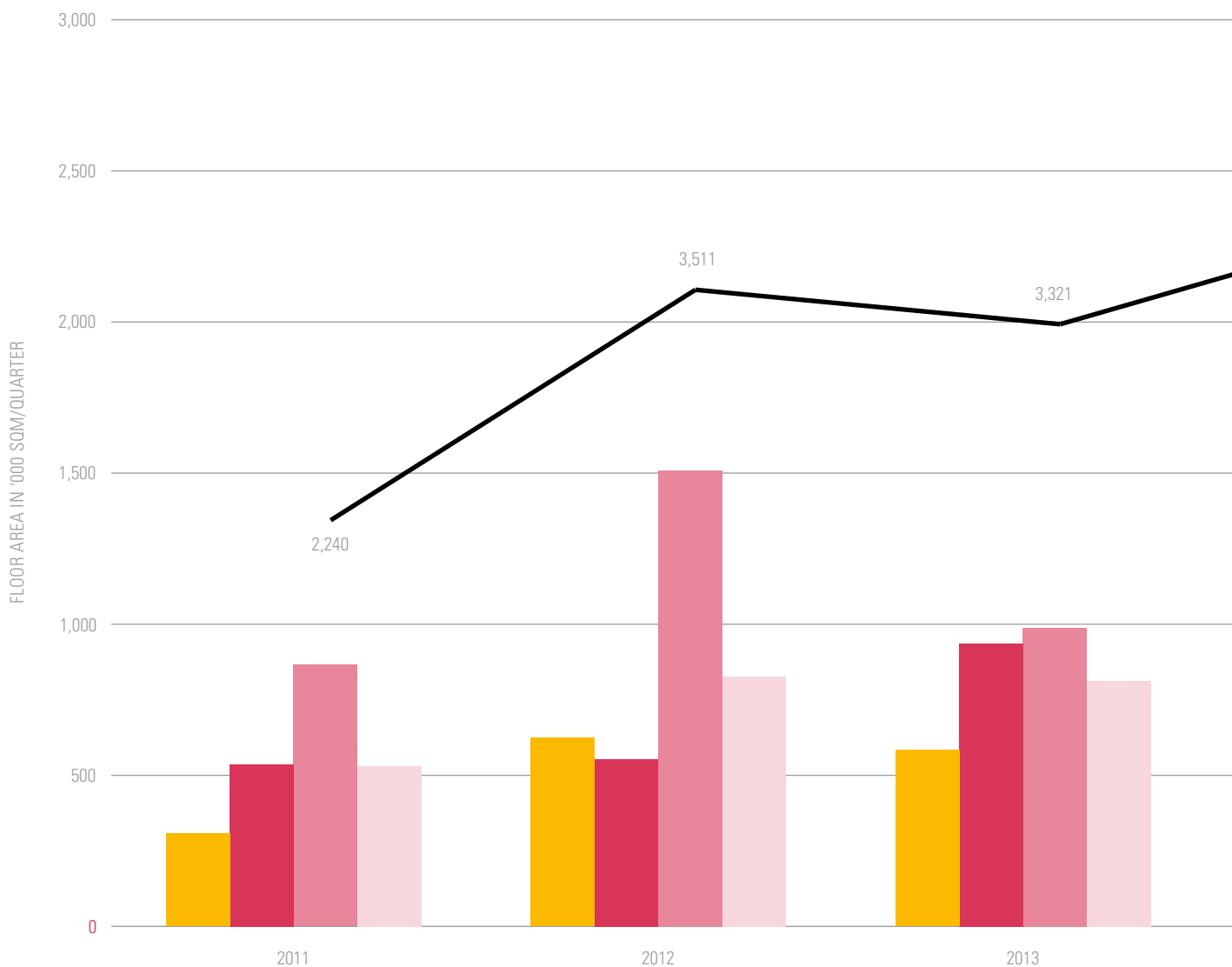
In an innovative variation of the quantitative analysis of the developer market, we asked relevant market operators to share their vision of tomorrow's logistics property. Together with the observations made by experts we interviewed, their answers provide an overview of logistics real estate aspects that will gain in significance.

## 34 THE DEVELOPMENT VOLUME OF LOGISTICS REAL ESTATE IN GERMANY, 2011–2016

*BETWEEN 2011 AND 2016, AROUND 18 MILLION SQM OF LOGISTICS SPACE WERE COMPLETED. ANOTHER 2.9 MILLION SQM ARE IN THE PIPELINE.*

Global trade has continued to grow over the past years. The growth has combined with diverse parallel mega trends to generate an increasing demand for new floor space in the logistics real estate sector. It has been matched by a surge in completions, from just over 2.2 million sqm in 2011 to more than 3.3 million sqm in 2015. With pipeline assets included, the completions total will rise to 4.7 million sqm by the end of 2016 – which would be a year-on-year increase by 40%. It would bring the floor area completed between 2011 and 2016 up to a total of around 21.0 million sqm, pipeline included.

**Fig. 10** LOGISTICS FACILITY COMPLETIONS IN GERMANY, BY QUARTER AND YEAR, 2011–2016\*



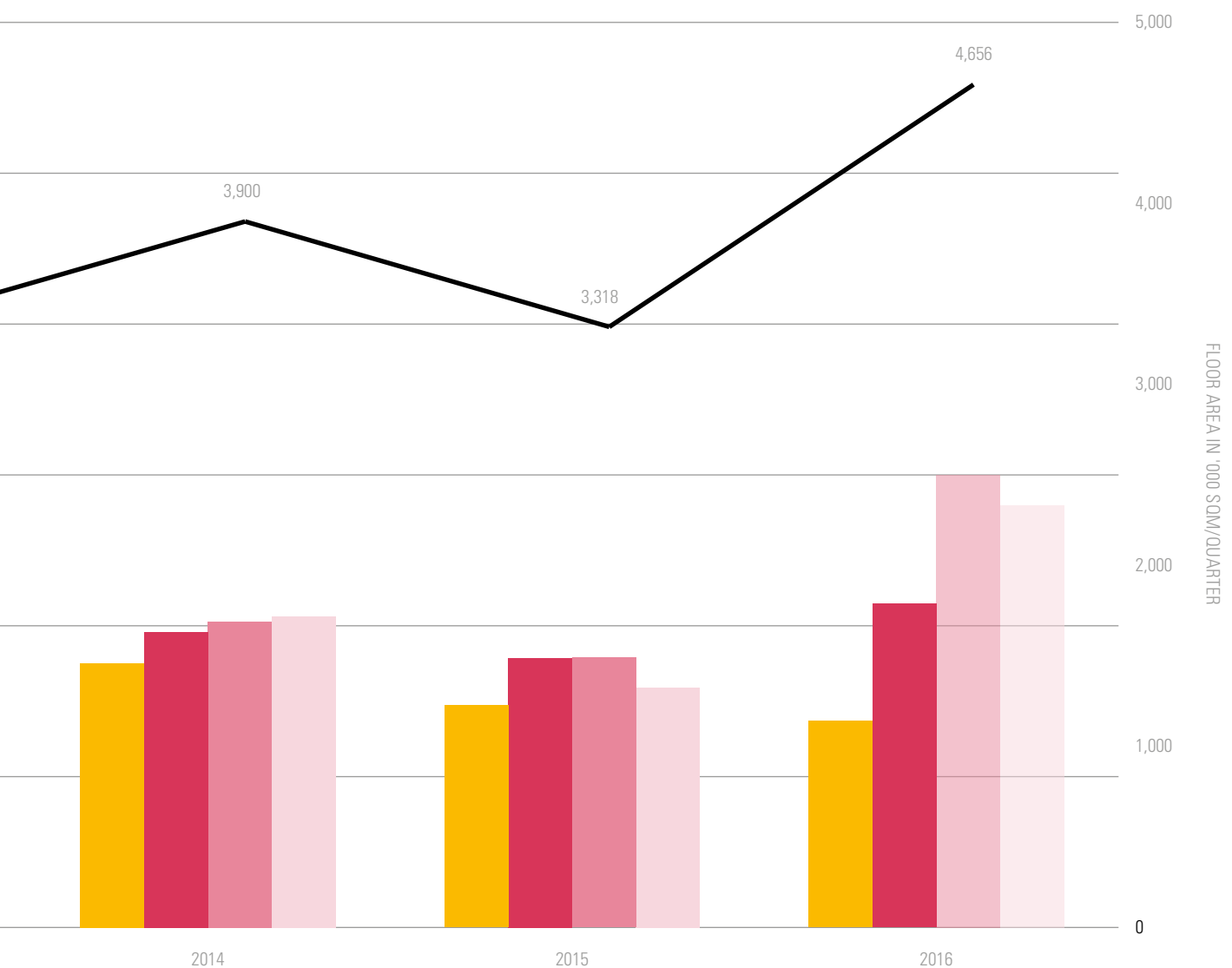
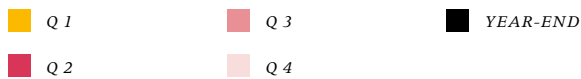
<sup>4</sup>For a definition of new-build logistics facility, see the glossary at [www.logistikundimmobilien.de](http://www.logistikundimmobilien.de)  
 \*Verified figures up to Q2/2016, estimates based on pipeline data for Q3 and Q4/2016

**ANNUAL GROWTH RATE OF ABOUT 8.2 %**

A year-end completions total of 4.7 million sqm would put the year 2016 well above the five-year average of barely 3.3 million sqm.

The causes underlying this rapid surge include keen demand as a result of changed consumption patterns, among other reasons. In recent years, e-commerce has become a constant driver. Demand was strongest for warehouse areas (of around

50k sqm) for storing and order-picking, as well as for distribution along the entire supply chain by so-called e-fulfilment centres. Cases in point include assets like the one raised by Arvato in Hanover (about 60,000 sqm) or the ones Amazon develops, which often have more than 100,000 sqm. The shift has also impacted the CEP business, which is another sector that has had to adjust to the changes.



## 36 WHO ACTUALLY DEVELOPS LOGISTICS PROPERTIES IN GERMANY? – AN OVERVIEW OF DEVELOPER TYPES

Until recently, the developer scene involved in the construction of German logistics real estate used to be quite opaque. The purpose of this survey series is to give this market a more transparent structure. The development activity in this market is defined by a large number of players: In addition to several major project developers active inside and outside Germany, there are numerous market participants limited to certain regions or to owner-occupied assets.

The number of (partially) speculative developments is much lower than in the office segment. Moreover, many companies still plan and develop their own properties. Especially during low-interest cycles, this option is often considered more attractive. The survey includes these developments because they account for a substantial share of the sector's total construction volume in Germany. Just like last year, we will look at the five leading developer types.

### *PROPERTY DEVELOPERS ARE THE MOST ACTIVE TYPE OF DEVELOPER*

Out of the total floorplate completed in the logistics sector between 2011 and 2015, property developer accounted for 43% or nearly 7 million sqm. Next in line with a share of 22% or a completed floor area of 3.6 million sqm were retail logistics operators.

Trailing them closely on the developer market were logistics operators with a 17% share or a completions total of well over 2.8 million sqm. Especially contract logistics are characterised by time-bound contracts, which normally makes rental solutions more efficient than the owner-occupancy of logistics real estate. This explains why logistics operators are responsible for a relatively small share of the logistics construction volume only.

Behind this sector comes the highly heterogeneous group of owner-occupiers/industrial with a share of 15% of the construction volume. Especially Small and medium-sized enterprises (SMEs) and industrial enterprises often owner-occupy their premises, which explains their comparatively low construction volume. Some of the larger companies tend to outsource their logistics processes, and this would be another reason for a low share in the development of new schemes. An exception are the automobile groups because they also prefer to develop their own real estate stock.

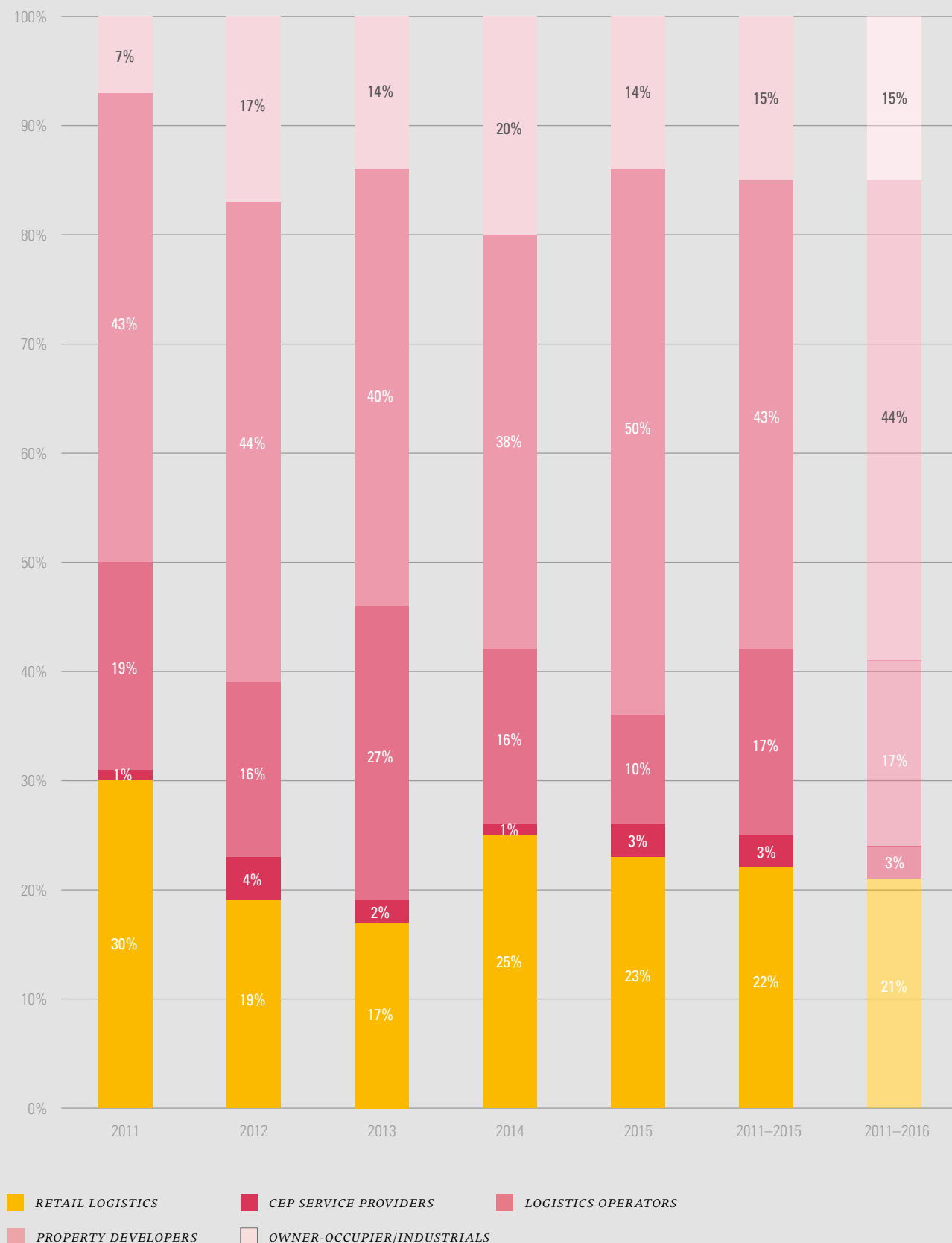
The lowest share in the development of new logistics facilities during the period under review have CEP service providers. The 390,000 sqm in logistics floor space developed by this logistics sectors represent a mere 2% of the total volume. The primary reason for this is the small average footprint of new schemes in this line of business, which tends to be about 10,000 sqm per facility. Transshipment warehouses are developed mostly for major players such as Deutsche Post DHL Group, Hermes, DPD or GLS. Another reason why CEP service providers claim such a small share in logistics property developments is that they often prefer to rent. Although CEP service providers play but secondary role as builders, changing processes in the area of last mile logistics and the steadily growing competitive pressure generated by branded-delivery service (with Amazon and Zalando performing their own CEP services) force CEP service provider to jockey for position on the market and to rise to the competitive and technological challenges.

Comparing years and developer types reveals a certain tendency to fluctuate among the various types of developers. For instance, the share of property developers rose from 43% in 2011 to 50% in 2015, but actually dipped to 38% in 2014. During this period of time, retail logistics operators and industrial players completed large-scale project under their own steam while also implementing the adaptation strategies for their logistics networks. Notably the retail logistics sector took this approach to cope with the upward momentum of e-commerce. Germany's industry, by contrast, was strongly influenced by the automotive sector, which had to expand its logistics capacities to accommodate the introduction of a slew of new car models.

The share of logistics operators dropped to its lowest level in five years in 2015 (10%). A rising number of logistics operators has ceased to rely exclusively on proprietary developments, and takes advantage of the lease option instead.

All things considered, the comparative analysis returned a dynamic timeline for each of the developer types. It suggests that the construction activities of the owner-occupiers/industrial players, logistics operators and retail companies are motivated by business strategies and global market conditions more than by anything else. Property developers, by contrast, are guided more by macro-economic trends. They will continue to play a prominent role as builders of logistics real estate in the future.

**Fig. 11 LOGISTICS FACILITY COMPLETIONS IN GERMANY, BY DEVELOPER TYPE, 2011–2016\***



\* Verified figures up to Q2/2016, estimates based on pipeline data for Q3 and Q4/2016

1. GOODMAN GROUP (PROPERTY DEVELOPER): 1,720,000 sqm
2. SCHWARZ-GRUPPE (RETAIL LOGISTICS OPERATOR): 612,000 sqm
3. EDEKA-GRUPPE (RETAIL LOGISTICS OPERATOR): 443,500 sqm
4. ALPHA INDUSTRIAL (PROPERTY DEVELOPER): 288,000 sqm
5. VOLKSWAGEN GROUP (OWNER-OCCUPIER/INDUSTRIAL): 239,500 sqm
6. SEGRO (PROPERTY DEVELOPER): 232,000 sqm
7. IDI GAZELEY (PROPERTY DEVELOPER): 228,500 sqm
8. HARDER & PARTNER (PROPERTY DEVELOPER): 224,000 sqm
9. DEUTSCHE POST DHL GROUP (LOGISTICS OPERATOR/CEP SERVICE PROVIDER): 222,500 sqm
10. GARBE GROUP (PROPERTY DEVELOPER): 202,000 sqm
11. HABACKER HOLDING (PROPERTY DEVELOPER): 202,000 sqm
12. GREENFIELD DEVELOPMENT (PROPERTY DEVELOPER): 201,000 sqm
13. PANATTONI EUROPE (PROPERTY DEVELOPER): 199,000 sqm
14. IXOCON (PROPERTY DEVELOPER): 196,500 sqm
15. REWE (RETAIL LOGISTICS OPERATOR) : 191,500 sqm
16. FIEGE GROUP (LOGISTICS OPERATOR/PROPERTY DEVELOPER): 191,000 sqm
17. PROLOGIS (PROPERTY DEVELOPER): 184,000 sqm
18. KNV KOCH, NEFF & VOLCKMAR (LOGISTICS OPERATOR): 175,000 sqm
19. DAIMLER (LOGISTICS OPERATOR): 174,000 sqm
20. VGP GROUP (PROPERTY DEVELOPER): 166,000 sqm

Fig. 12 *TOP 20 DEVELOPERS OF LOGISTICS FACILITIES IN GERMANY, 2011–2015*

## ACTIVITIES OF EACH DEVELOPER ON THE GERMAN MARKET

An analysis of the developer types revealed how the various conglomerates position themselves in the developer market. But which market players are part of the driving force behind each developer type? What is their development performance?

### *TOP PERFORMER GOODMAN RAISING MORE THAN 1.7 MILLION SQM OF LOGISTICS SPACE*

Between 2011 and 2015, the Australian Goodman Group raise more than 1.7 million sqm in new logistics facilities. The bulk of these completions represents Amazon logistics centres, e. g. the ones in Pforzheim and Koblenz alone accounting for over 200,000 sqm, and one for Zalando in Erfurt having nearly 80,000 sqm.

### *LIVELY BUT FLUCTUATING BUILDING ACTIVITY IN THE FOOD RETAIL TRADE*

Lagging far behind Goodman Group on the list are the retail companies belonging to Schwarz Group (Kaufland, Lidl) and EDEKA Group. The development volume of Schwarz Group between 2011 and 2015 equalled around 612,000 sqm, compared to 443,500 sqm in new floor space developed by EDEKA Group. REWE Group, which ranked among the Top-5 developers in the previous survey, developed a comparatively small volume of new floor space. It consequently slipped down to 15. place in this year's ranking – whereas Schwarz Group stood out with a volume of more than 179,000 sqm of new logistics construction in 2014 and maintained its position behind property developer Goodman. Responsible for this development is the completion of a logistics centre at Magna Park in the Hessian town of Langgöns with a floor area

of nearly 100,000 sqm. Moreover, Schwarz Group is raising another large-scale logistics centre of about 41,000 sqm for Lidl in the town of Bassenheim. EDEKA Group moved up into third place in the 2014 developer ranking by completing an exceptionally large volume of around 139,500 sqm of logistics space. This development is attributable above all to three properties: a cold-storage warehouse of around 70,000 sqm at Megapark Valluhn-Gallin in the integrated conurbation of Hamburg, a logistics centre of 48,000 sqm in Striegistal, and a logistics centre of around 56,500 sqm in Wiefelstede.

The lively, if fluctuating, building activity of the food retail trade is essentially explained by two reasons. The focus on perishables necessitates specialised properties with deep freeze, cold-storage and fresh-food warehouses that are characterised by a high degree of customisation. The other reason is the reorientation of the distribution and supply networks and the restructuring of branch networks, which from time to time will cause surges in building activity to accommodate the corresponding need for adjustments.

### *OTHER PROPERTY DEVELOPERS DOMINATING THE MARKET*

Aside from the retail logistics operators and from star performer Goodman Group, the market is dominated by other property developers. In fourth place, after the aforementioned retail logistics operator groups, is the cross-European property developer Alpha Industrial with a new-build construction volume of more than 288,000 sqm. Examples for such modern logistics facilities include the Keramag logistics and processing centre of more than 43,000 sqm built in Ratingen in 2014 or the Redcoon logistics centre of around 54,000 sqm completed in Erfurt in 2012.

Interesting to note in this context is that Volkswagen Group, which belongs in the owner-occupier/industrial sector, ranks fifth. The high ranking is explained primarily by the development of the logistics optimisation centre near Hanover with a floor area of around 56,000 sqm and the logistics centres in Wolfsburg, Emden and Baunatal with floor plates between 23,000 and 40,000 sqm.

The only member of the sector logistics companies/CEP service providers represented on the Top 10 list is Deutsche Post DHL Group with a construction volume of more than 222,500 sqm. Among the schemes the group completed in 2015 are a sorter at Leipzig Airport with a floor area of 44,000 sqm and a distribution centre of 60,000 sqm in the trading estate Allermöhe in Hamburg which helped to bring the total volume up to 148,500 sqm.

Only three other logistics operators made it into the Top 20: KNV, Fiege Group and Honold Group. Fiege Group is special insofar as its logistics business is supplemented by an in-house property development arm that completed 96,500 sqm of floor area in 2014. One of the assets completed is the second construction stage of a multi-user logistics centre of around 97,500 sqm in Dieburg near Frankfurt am Main. Book distributor KNV scored place 18 in 2014 with the development of a single logistics facility of 175,000 sqm in Erfurt.

## PROPERTY DEVELOPER ACTIVITIES IN GERMANY

Despite annual fluctuations, property developers are gaining in significance. With a development total of around 7 million sqm, they boasted a market share of more than 43% of all completions between 2011 and 2015. Their share is likely to keep going up, because logistics operators focus increasingly on their core business, and show a growing inclination to rent.

### *TOP 5 PROPERTY DEVELOPERS CLAIM A SHARE OF NEARLY 38% OF THE CONSTRUCTION VOLUME*

The Australian company Goodman, which specialises in logistics real estate, clearly leads the field of property developers, as no other company develops nearly as much new logistics facilities in Germany. This is largely unsurprising insofar as

Goodman showed an above-average level of activity in previous years, too. Between 2011 and 2015, Goodman accounted for almost 24% (around 1.72 million sqm) of all logistics space completed, and thereby claimed a lead of roughly 20 percentage points over the runner-up, Alpha Industrial. The latter reported a completions volume of 288,000 sqm, while SEGRO in third place completed 232,000 sqm. Trailing slightly behind in fourth place among the Top 5 property developers is IDI Gazeley. The company, which has American roots, completed a total logistics floor area of around 228,500 sqm in 2015, with its development at Magna Park in Kassel accounting for around 25,000 sqm alone. The mid-market company Harder & Partner ranked fifth among the property developers, putting 224,000 sqm of new floor space on the market.



Fig. 13 *SHARE OF THE TOP 5 PROPERTY DEVELOPERS IN THE TOTAL CONSTRUCTION VOLUME, 2011–2015*

24%  
GOODMAN GROUP

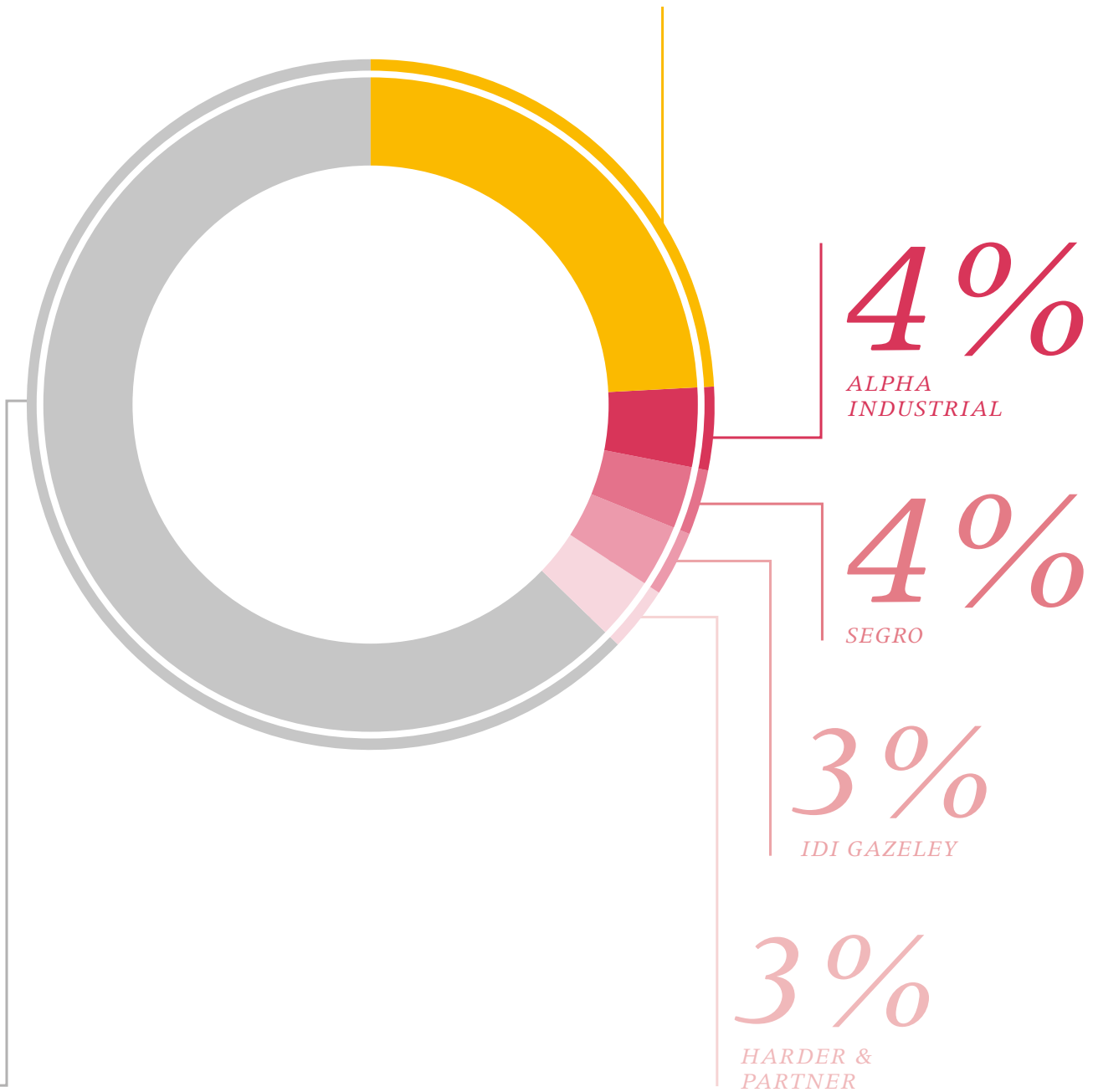
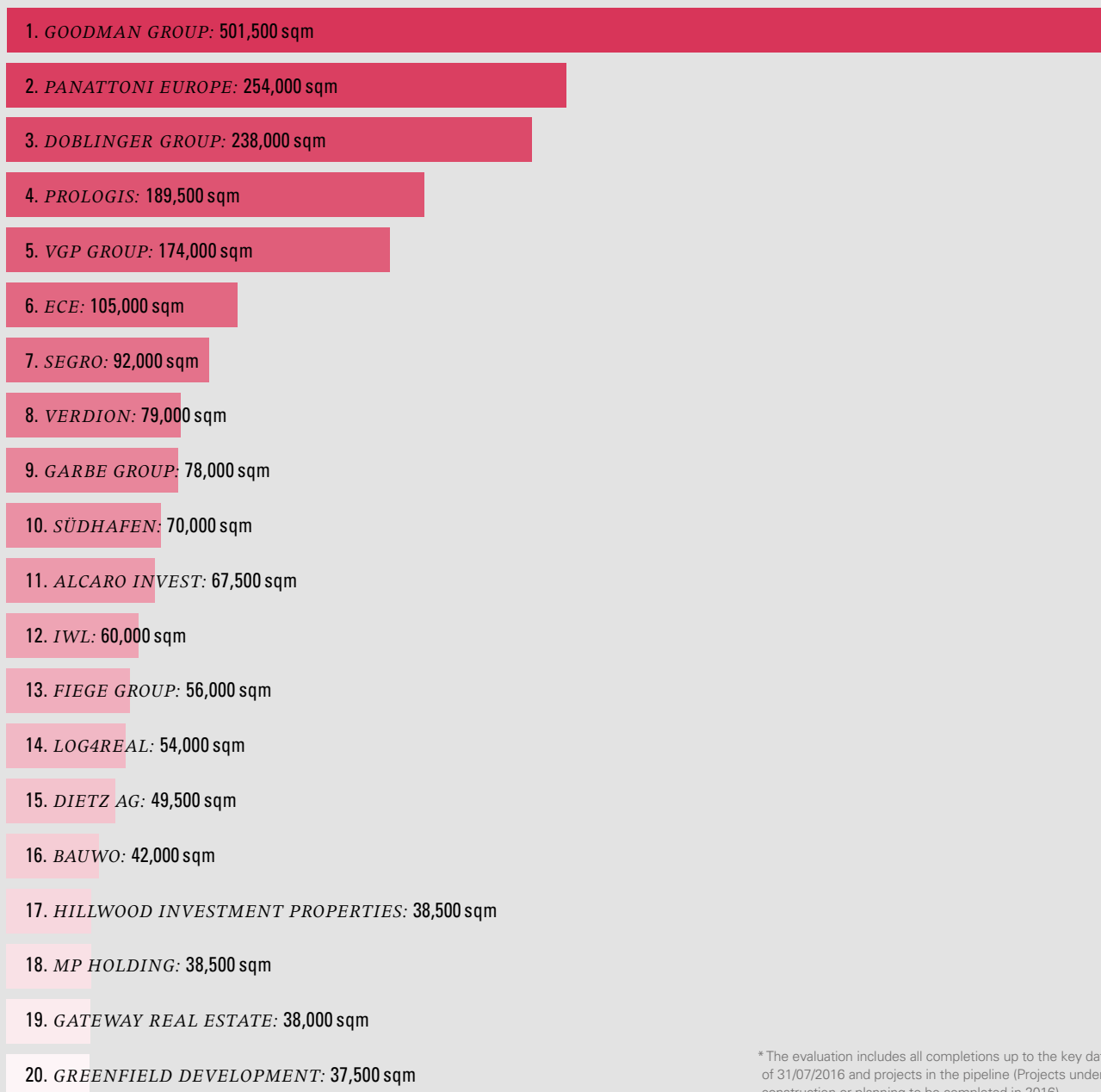


Fig. 14 TOP 20 DEVELOPERS OF LOGISTICS FACILITIES IN GERMANY, 2016\*



\*The evaluation includes all completions up to the key date of 31/07/2016 and projects in the pipeline (Projects under construction or planning to be completed in 2016).

### INTERNATIONAL PROPERTY DEVELOPERS DOMINATE THE GERMAN MARKET

The German market for logistics real estate remains highly important for foreign property developers. Nearly half of the ones listed here hail from the English-speaking world. One of the reasons for this is that they bring a higher degree of professionalization from their home markets in the US, the UK or Australia – more so than many developers from the comparatively opaque European markets. These international companies recognised the significance of Germany as logis-

tics location correctly and early on, and acted accordingly by taking an expansive approach.

Among these international players are companies like Goodman, SEGRO, VGP, Panattoni or Prologis, which made it into the Top 10 of the logistics property developers in Germany during the subject period 2011 through 2015. By the end of this five-year period, these five alone had developed 2.53 million sqm of new logistics space and gained a share of about 38% of the property developer market. Assuming they retain their market share, their completions could add up to another

1.1 million sqm, including project pipeline. The projection reflects a growth rate of about 43%, in proportion to the trend among the Top 5 property developers between 2011 and 2015.

Most international market players entered the German market during the past five to fifteen years. But in the years 2011 through 2015, they cornered a market share of over 38% of the logistics completions by property developers, delivering a volume of more than 2.7 million sqm. At this point in the ongoing year, it is already obvious, judging by the development pipeline, that the trend is set to continue.

Inversely, there are no globally active German providers yet. So far, the business of domestic players, such as Garbe Industrial Real Estate GmbH, on international markets has been limited to one-off cases – and these usually in Continental Europe. All of the German property developers belong in the mid-market category. Unlike the international developers, German firms like Ixocon, Harder & Partner, Habacker Holding, among others, take advantage of their well-developer local networks and their regional roots – with some of them having cultivated relationships to specific local players for decades.

## CONSTRUCTION HOT SPOTS – BUILDING ACTIVITY BY LOGISTICS REGIONS

### *81% OF THE COMPLETED FLOOR PLATE IS LOCATED IN ESTABLISHED LOGISTICS REGIONS*

The bulk of new completions developed in Germany between 2011 and 2015 is located in the country's major established logistics regions. Peripheral locations characterised by poor infrastructure and remoteness from consumer and labour markets account for just over 19% of the new-build completions. Assets in peripheral locations are often used by owner-occupiers/industrial players or retail logistics operators because the site is integrated into the regional economic network for specific purposes or for historical reasons.

**Fig. 15** *COMPLETED LOGISTICS FACILITIES BY LOCATION, 2011–2015*

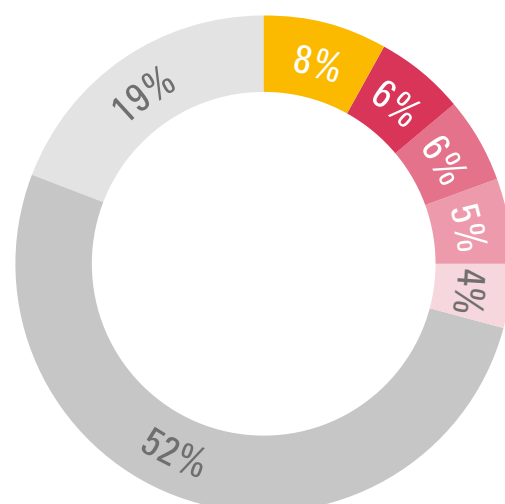
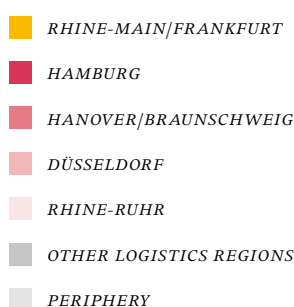
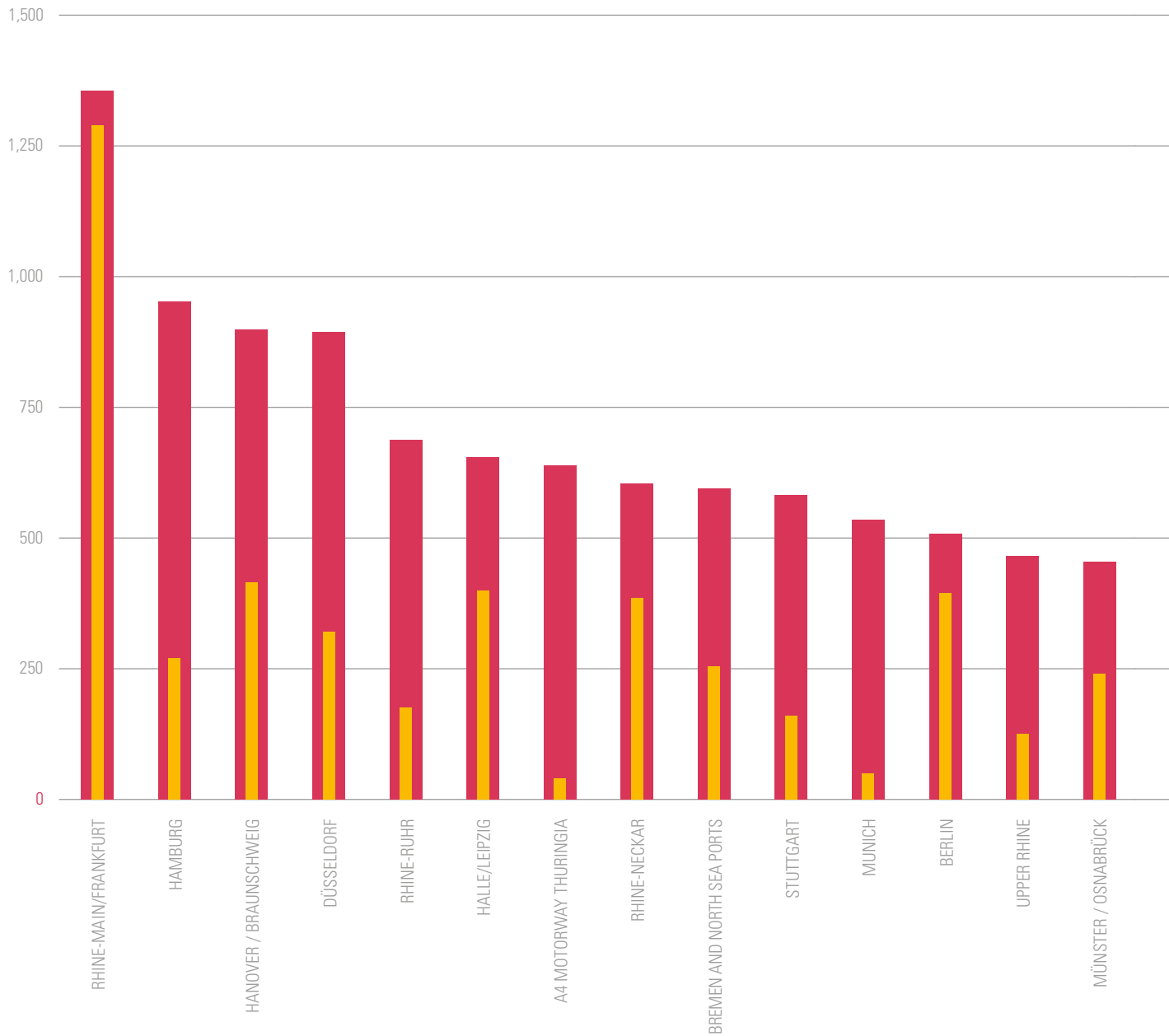
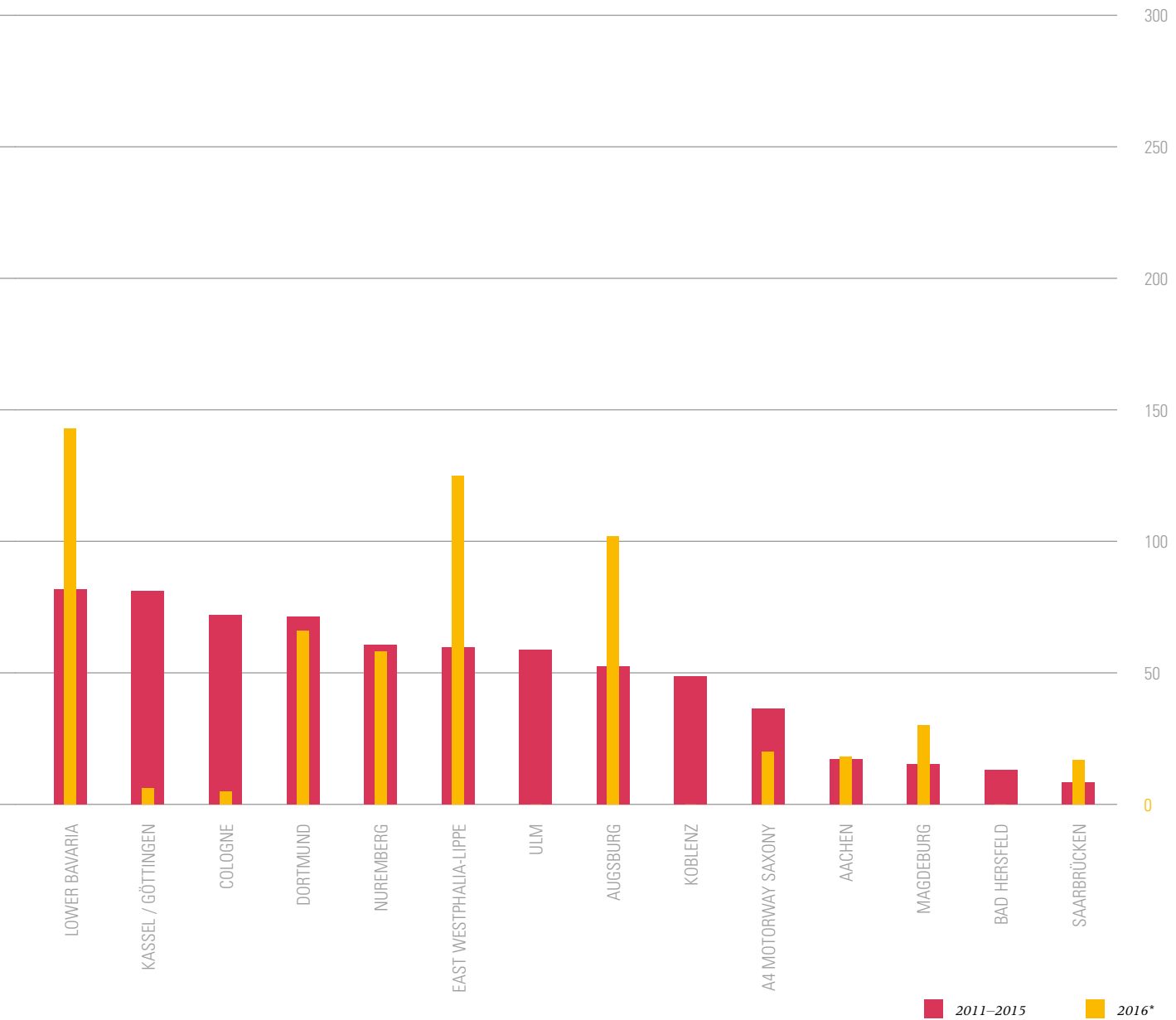


Fig. 16 COMPLETIONS BY LOGISTICS REGION, IN '000 SQM



Almost every second of the new floor space is completed in one of the five largest of the 28 logistics regions in Germany. The highest volume of new-built construction was diagnosed in the Rhine-Main/Frankfurt logistics region. With a completed logistics space of nearly 1.4 million sqm between 2011 and 2015, the region claims a market share of more than 8%. It obviously benefits from its central location not just in Germany but in mainland Europe, and from the proximity of Germany's largest freight airport in Frankfurt, which handles a major share of the turnover.

The logistics region with Germany's second-highest construction volume is Hamburg, with about 0,9 million sqm of logistics floor space completed. Hamburg benefits from a heterogeneous mix of logistical formats, including the port area, diverse freight centres and trading estates, as well as other inter-regional infrastructure-related connections. During said period, it accounted for 6% of all logistics real estate completions.



\* The evaluation includes all completions up to the key date of 31/07/2016.

For the same survey period, the Hanover/Braunschweig logistics region reported 900,000 sqm worth of completions. The region has become one of the preferred transshipment centres in the country because it combines proximity to the deep-sea ports in northern Germany with a central location and excellent transport infrastructure. Trailing it closely in fourth place is the Düsseldorf logistics region with a volume of 894,000 sqm of new-build logistics space. This region benefits mainly from its proximity to other established regions such as Cologne, Rhine-Ruhr and Dortmund as well as to the neighbouring Benelux countries and France.

Looking beyond the survey period, the year 2016 appears to have some surprises in store: Augsburg, Lower Bavaria and East Westphalia-Lippe, considered hidden champions among the logistics regions made notable gains in terms of new-build completions. Also worth noting are the land reserves that the Rhine-Main/Frankfurt logistics region keeps on hand and is using to expand its lead through further completions in 2016.

## 46 ASSET SIZES AND ASSET CLASSES

As discussed earlier, various factors are causing logistics processes to change and will consequently bring changes for logistics properties as well. Among the aspects affected are the dimensions of logistics facilities. Some of the globally active pure online retailers like Amazon have in recent years raised large logistics centres of more than 100,000 sqm of

logistics space in the vicinity of German conurbations. At the same time, major car manufacturers like BMW or Daimler pursue a strategy of large logistics sites that are located either in the vicinity of production plants (production logistics) or in central Germany with convenient cut-off times (spare parts logistics). How is the trend evolving on the national level?

Fig. 17 *LOGISTICS REAL ESTATE BY ASSET SIZE, 2011–2015*

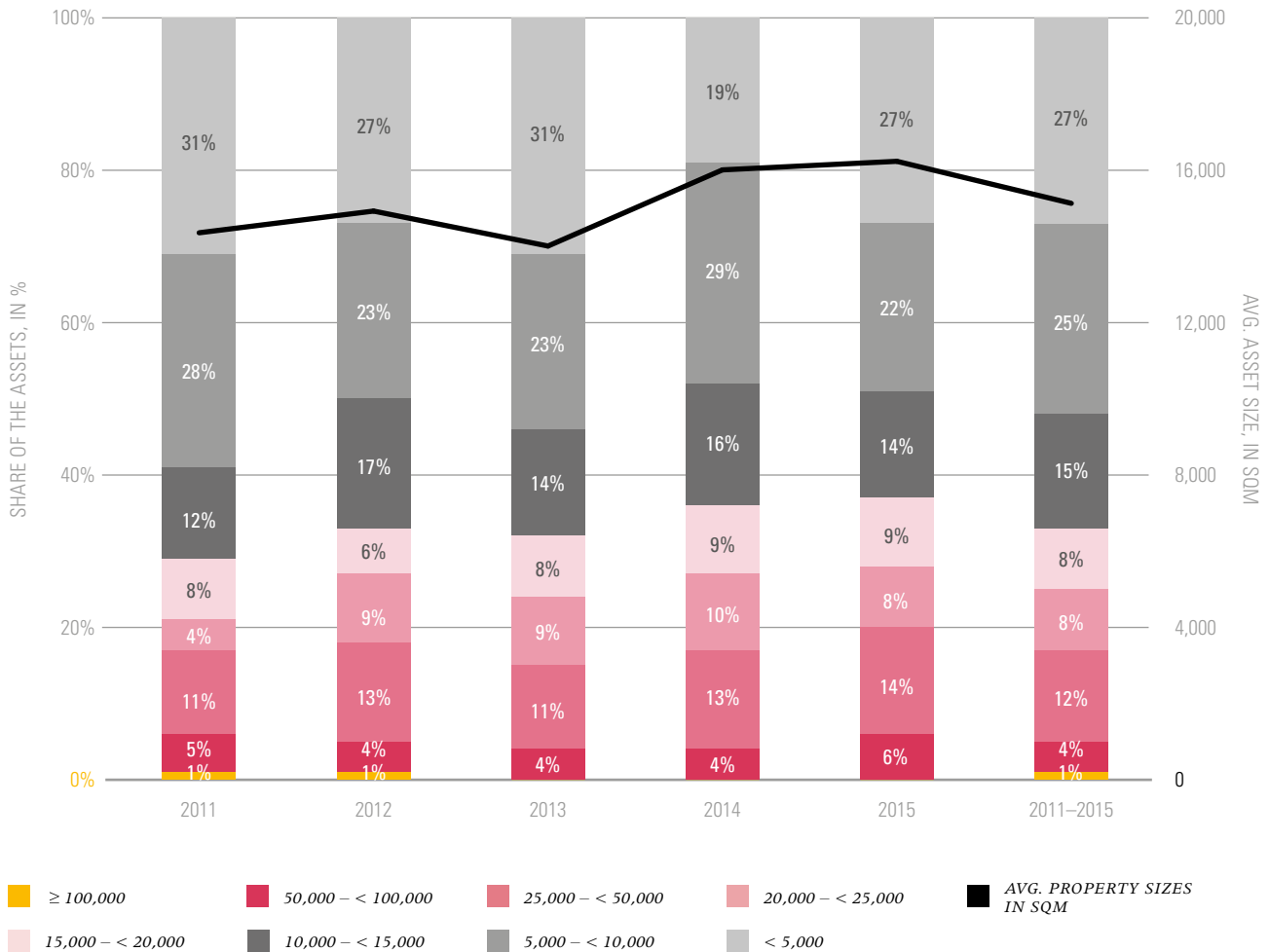
PROPERTY SIZE IN SQM	NUMBER OF PROPERTIES	SHARE IN %	DEVELOPED AREA IN SQM	SHARE IN %
< 5,000	287	27 %	857,500	5 %
5,000 – < 10,000	263	25 %	1,795,500	11 %
10,000 – < 15,000	158	15 %	1,879,000	12 %
15,000 – < 20,000	84	7 %	1,409,500	9 %
20,000 – < 25,000	91	9 %	1,979,000	12 %
25,000 – < 50,000	130	12 %	4,476,500	28 %
50,000 – < 100,000	48	4 %	3,004,500	18 %
≥ 100,000	6	1 %	745,000	5 %
SUM TOTAL	1,067	100 %	16,146,500	100 %

### *WHILE BIG-TICKET ASSETS MAKE HEADLINES, SMALL ONES DOMINATE THE MARKET*

Although the large-volume logistics centres receive far more media attention, they are clearly in the minority. The modest trend toward smaller logistics facilities has continued. Nearly 52% of the completed logistics assets are smaller than 10,000 sqm. They include delivery sites or distribution

centres of CEP service providers. In fact, properties of up to 15,000 sqm account for around 67% of all logistics buildings completed during the survey period of 2011 through 2015. By comparison, the share of assets measuring 25,000 sqm to 50,000 sqm, which includes the larger warehouse logistics centres operated by retail and regular logistics operators, has stagnated at 12%. Some of these belong in the owner-occupier/industrial logistics sector associated with the automotive industry.

Fig. 18 DISTRIBUTION OF COMPLETED ASSETS BY SIZE CATEGORIES, 2011–2015



The time series shows a slow-moving shift among the unit sizes. For instance, the trend toward smaller floor spaces, which was quite prominent in 2011, has regained some of its momentum. The vast majority of assets completed measure less than 15,000 sqm. On top of that, we noted a slight increase in completions in the size band between 50,000 sqm and 100,000 sqm, whereas properties with a logistics share of more than 100,000 sqm claimed only a negligible share over the course of the survey period.

**PROPERTY DEVELOPERS GRAVITATE TOWARD PROJECT SCALE OF 25,000 SQM OR LARGER**

A comparison between property developers and owner-occupiers reveals that property developers did not built as many logistics assets of less than 10,000 sqm over time, but started raising a higher number of assets measuring between

25,000 sqm and 50,000 sqm in 2013. In the time since 2013, the average size of property developer projects has levelled out at 19,000 sqm, subject to a slight upward trend in 2014. This size band accounts for a share of roughly 65% of the new-build assets of less than 20,000 sqm.

Interestingly, the average property size, having surged up to the year 2012, declined in subsequent years, but has started to increase again lately. The trend is intrinsically linked to the development of single big-ticket assets like those built for online retailer Amazon: In 2011 and 2012, just two assets that property developers completed for Amazon in either year accounted for around 200,000 sqm of logistics space per year. These combined with the regular building activity and certain other big-ticket projects to make 2012 a banner year in logistics real estate development. Another major property of around 64,000 sqm was completed for Amazon in 2013.

# 48 TOMORROW'S LOGISTICS PROPERTY FROM THE WAREHOUSE DEVELOPERS' POINT OF VIEW

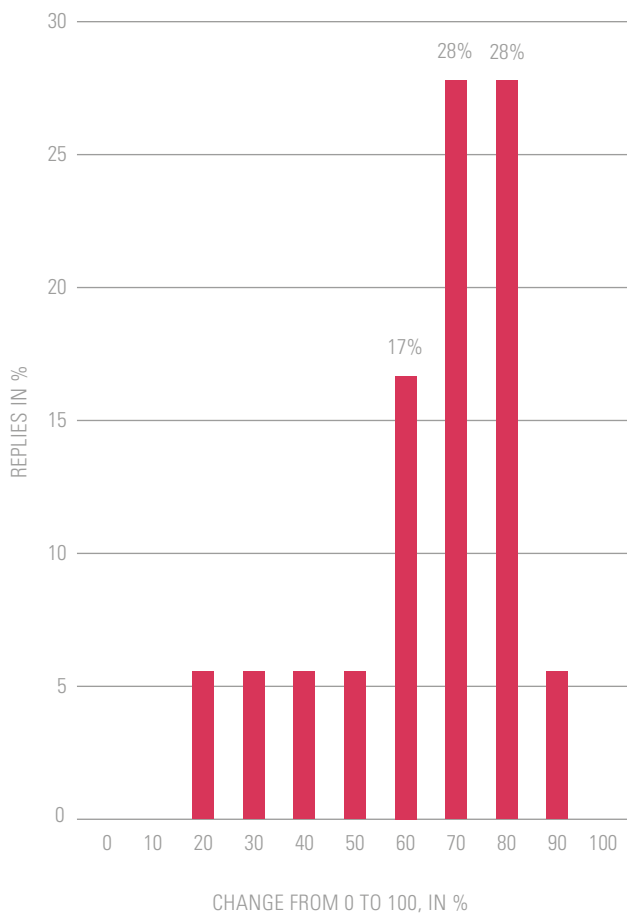
To a large extent, property developer will build according to client specifications (“built-to-suit”). Speculative developments are rather the exception. As a result, property developers are in close touch to the market and highly sensitive to the priorities of occupiers and tenants.

Within the framework of the survey, 97 representatives of the Top 50 logistics real estate developers were asked via the bulwiengesa survey desk\* which drivers, qualities or aspects they thought will dominate during the next five to ten years: Based on a return rate of over 37%, we obtained a clear picture in this context.

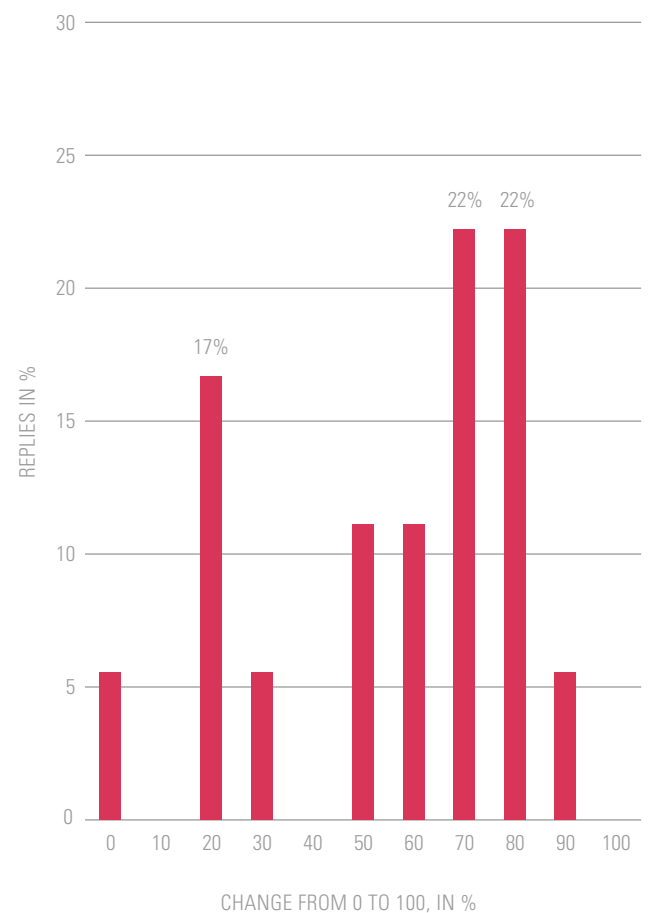
## How Extensively will Shifts in Consumption Patterns/Consumer Needs Alter Logistics Real Estate over the Next Five to Ten Years?

Among the key factors that a majority of the poll respondents deemed important are changes in consumer behaviour that are motivated by digital supply patterns. A majority of 56% consider this aspects important or very important. The behaviour of certain target groups, e. g. “silver agers” or “digital natives,” does have an impact, according to the developers polled.

**Fig. 19** CHANGES CAUSED BY FAST GROWTH OF THE E-COMMERCE INDUSTRY



**Fig. 20** CHANGES CAUSED BY SHIFTS IN SHOPPING AND CONSUMPTION PATTERNS OF CERTAIN TARGET GROUPS



\*The bulwiengesa survey desk is an online tool for carrying out qualitative surveys. With its scalable architecture it meets all possible kinds of customer requirements. Among them tenant or satisfaction surveys and many more; For more details see <http://survey-desk.bulwiengesa-solutions.de>

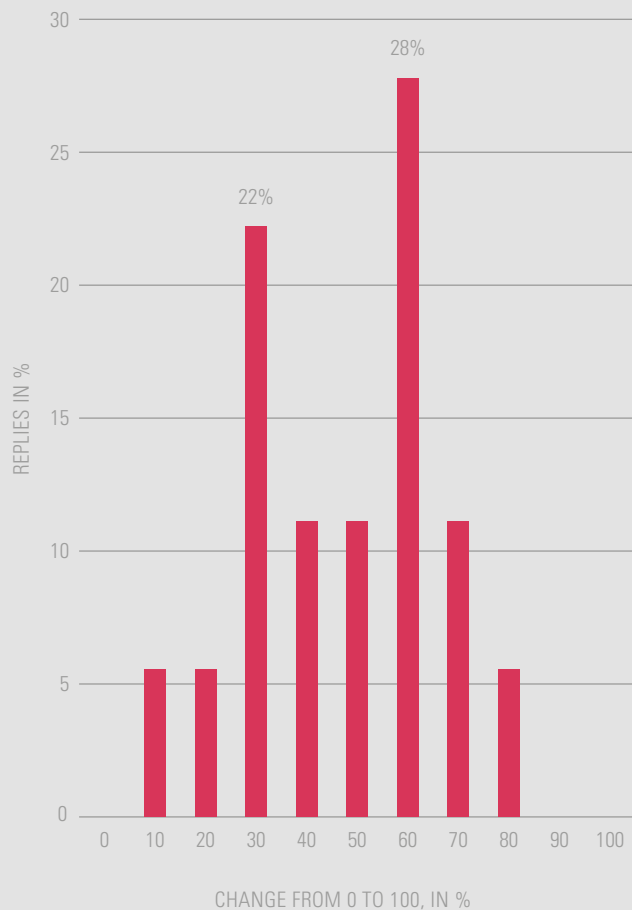


## How Extensively will Shifts in Production/ Work Methods Alter Logistics Real Estate over the Next Five to Ten Years?

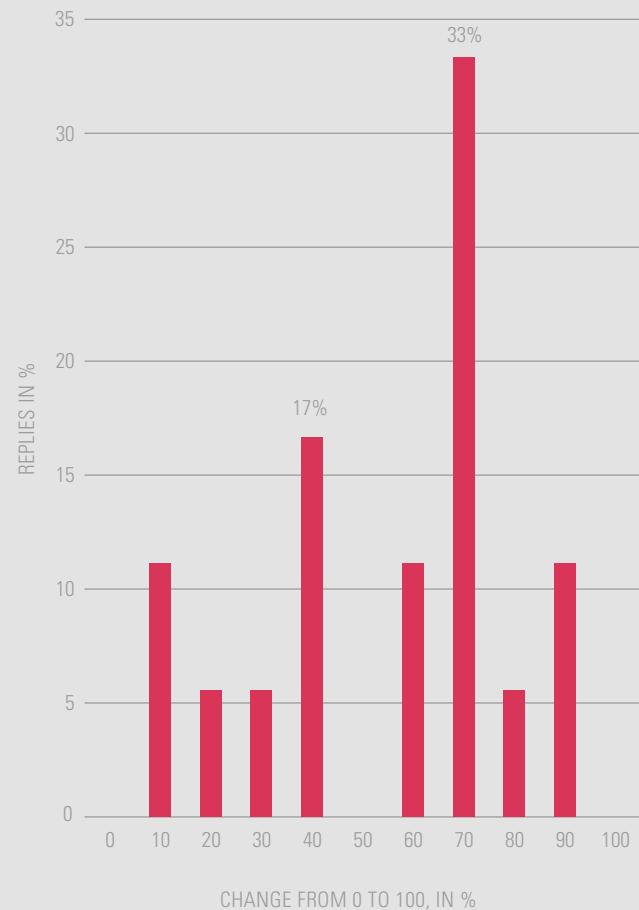
The expert panel is divided on the question whether changed production methods such as additive manufacturing processes (industrial 3D printing, laser sintering, etc.) will influence the design of future logistics real estate. Although none of the respondents chose the extreme ends of the scale, there are two peaks, one on either side of the centre, of more than a quarter and a fifth, respectively.

The question whether value-added services on warehouse mezzanine levels will have a stronger influence is answered affirmatively by a majority. At the same time; the field seems even more divided over the question. There are no midfield assessments. No less than a third, however, believe that we will see a surge in demand for value-added services like returns logistics or repair services, and that this will in turn have an impact on future warehouse design.

**Fig. 21** *CHANGES CAUSED BY ADDITIVE MANUFACTURING PROCESSES*



**Fig. 22** *CHANGES CAUSED BY VALUE-ADDED SERVICES PROVIDED ON MEZZANINE LEVELS*

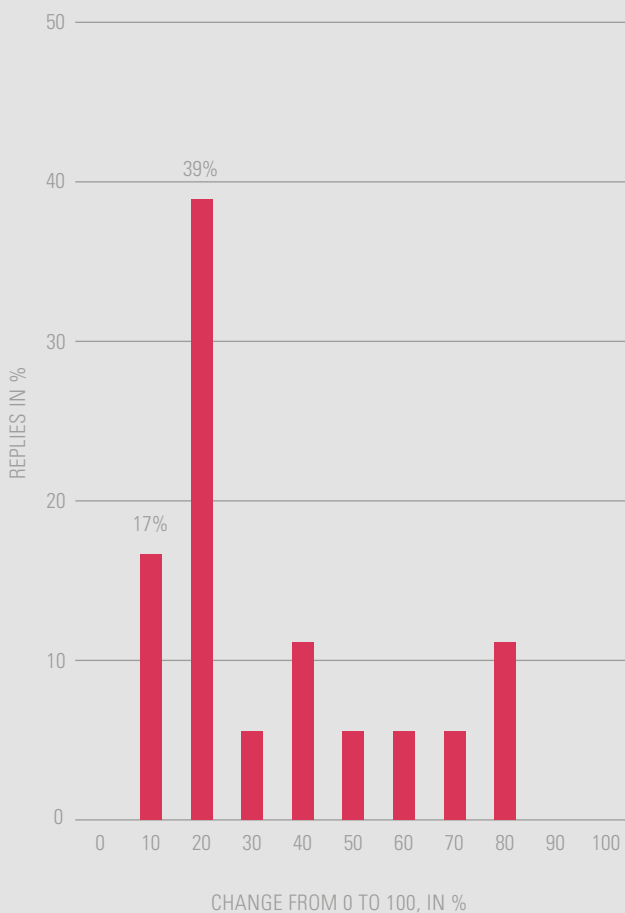


### How Extensively will Changes in Logistics Methods/Stock-Keeping Alter Logistics Real Estate over the Next Five to Ten Years?

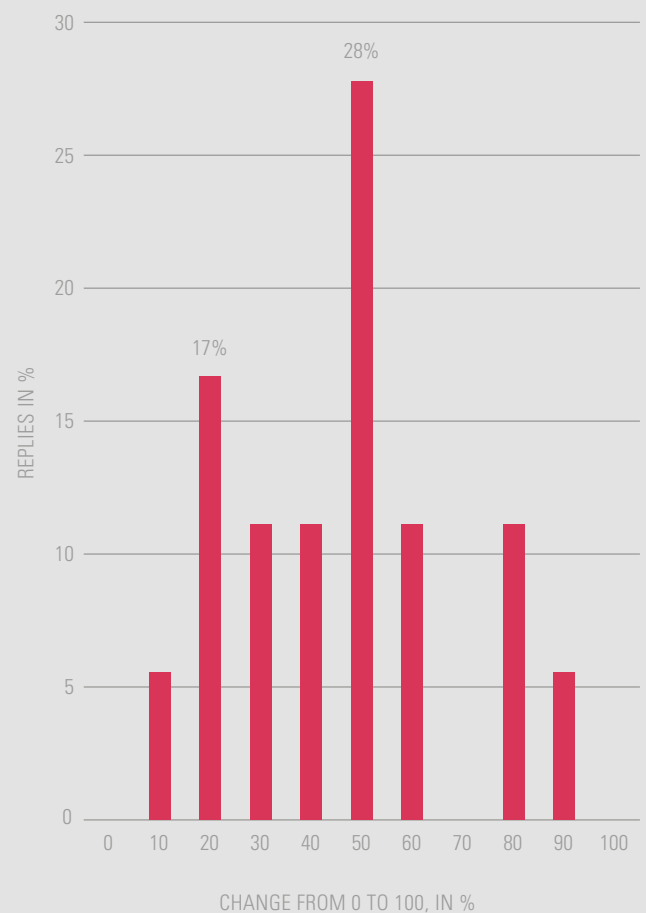
The logistics warehouse of the future will be influenced not just by outside factors. The logistics and stock-keeping processes performed inside the warehouse are subject to rapid changes wrought by technological progress. The degree to which warehouse design will change in response to the virtualisation of packing process, e. g. through the use of virtual reality glasses in pickpacking, is rated as rather low by the panel.

But it took a different view in regard to robotics (e. g. machine picking) and automated warehouse management system. Here, the responses are more affirmative. However, only a minority believes that the influence will be serious.

**Fig. 23** CHANGES CAUSED BY THE USE OF VIRTUAL REALITY



**Fig. 24** CHANGES CAUSED BY ROBOTIC SYSTEMS IN STOCK-KEEPING

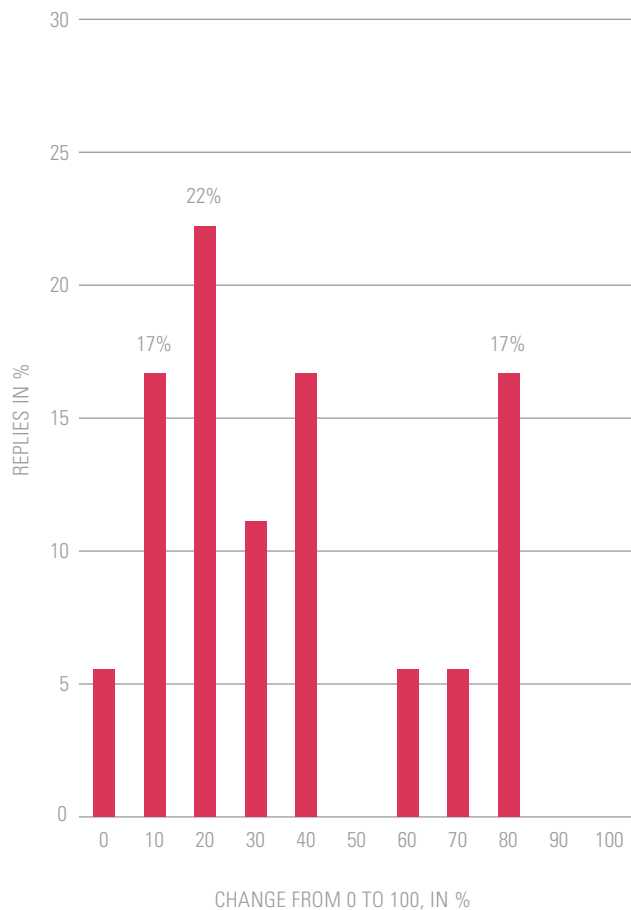


## How Extensively will City Logistics or New Last-Mile Transport Modes Change the Character of Logistics Properties over the Next Five to Ten Years?

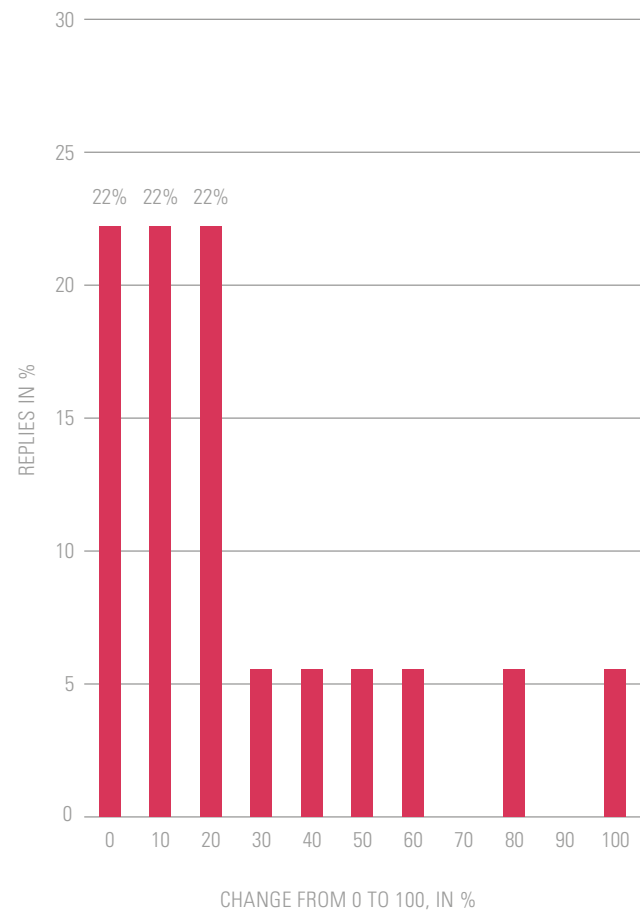
Technological progress is causing changes that were thought inconceivable just a few years ago. Many of the innovations concern the ways in which transports or deliveries to the end customer are carried out. How likely did the respondents consider an elevated potential for medium-term change in answer to each question?

Autonomous vehicles are not likely to have a major impact on warehouse construction, according to the expert panel. The majority of experts does not expect to see major changes over the next five to ten years. Some can well imagine major structural changes in warehouse design. Property developers generally doubt that autonomously moving transport vehicles are of advantage at the delivery end, apart from labour cost savings. After all, parcel deliveries using autonomous vehicles will burden the dense urban road network as much as any other kind of vehicle.

**Fig. 25** *CHANGES CAUSED BY THE INTRODUCTION OF AUTONOMOUS VEHICLES*



**Fig. 26** *CHANGES CAUSED BY DELIVERIES VIA DRONES OR SIMILAR*

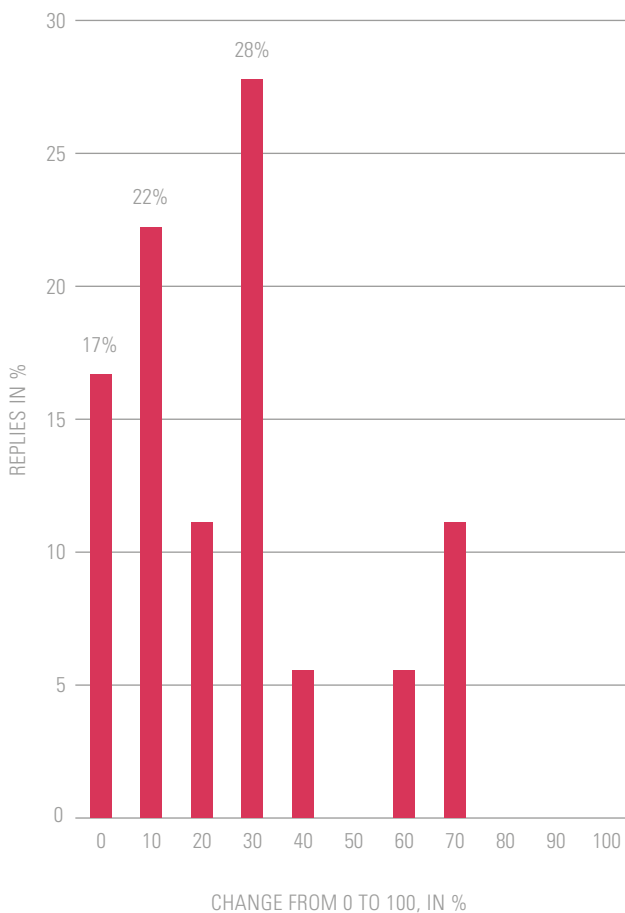


**NO STRUCTURAL ALTERATIONS  
PROMPTED BY DRONES OR  
“UBERISATION”**

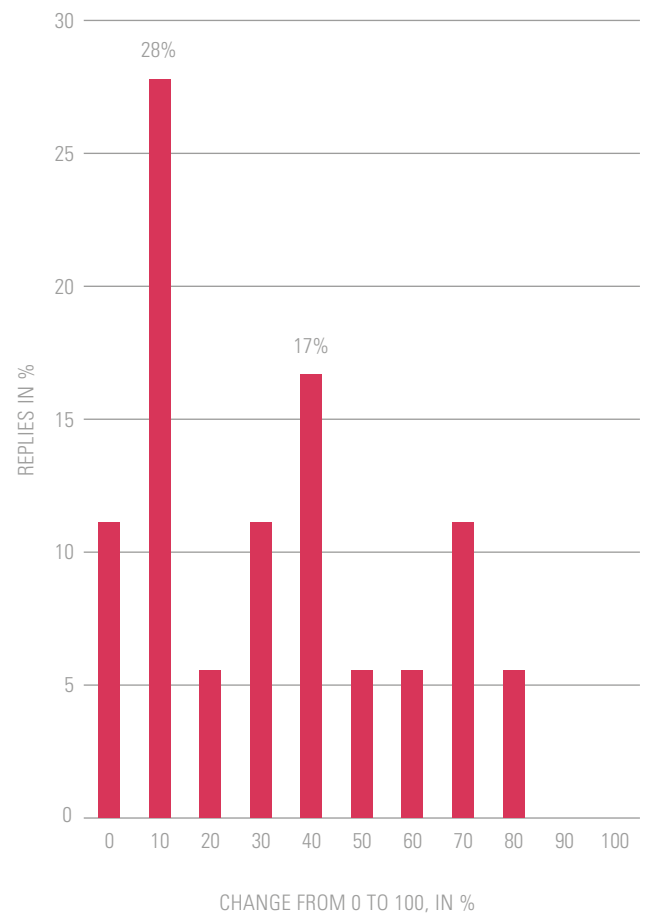
Responses were even clearer in regard to the much-discussed delivery by drones. Two of three panel members believe they will cause few changes or none to the actual warehouse structure. It is true that drones are already deployed, e. g. to transport medicines to remote islands. But for the metropolitan mass market, this delivery mode is considered ineffective or altogether impractical. Much the same was said about the possible “UBER-isation” of city logistics. The warehouse as such will not be seriously altered by either mode of transport, or so the experts believe.

By contrast, the idea of a sharing economy in logistics is already being field-tested. Cases in point are the trials conducted by Daimler and DHL in which Car2Go vehicles are used to haul parcels. Will this change the ways in which things are transported? The number of experts answering this in the affirmative is higher than was the case with the previous three questions – one idea being that private individuals use an app to check which parcels are to be delivered to which destination, and then carry out the delivery with their own bicycle or car. City logistics certainly seem to have the greatest potential for change. A whopping 30%, however, do not consider this a viable proposition.

**Fig. 27 CHANGES CAUSE BY THE “UBERISATION” OF CITY LOGISTICS (UBER RUSH)**



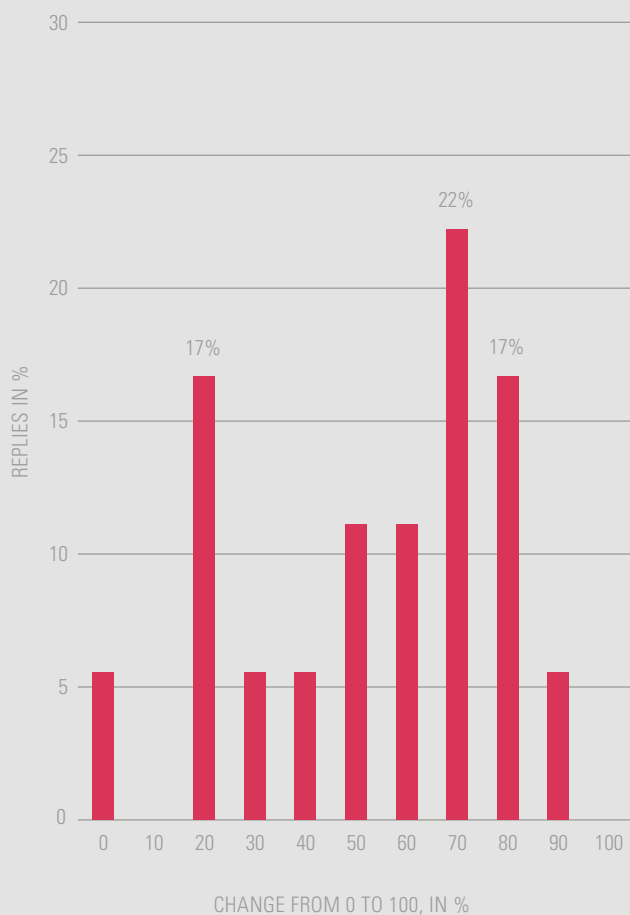
**Fig. 28 CHANGES CAUSED BY INTRODUCING A “SHARING ECONOMY” INTO THE TRANSPORT BUSINESS VIA PRIVATE TRANSPORTATION**



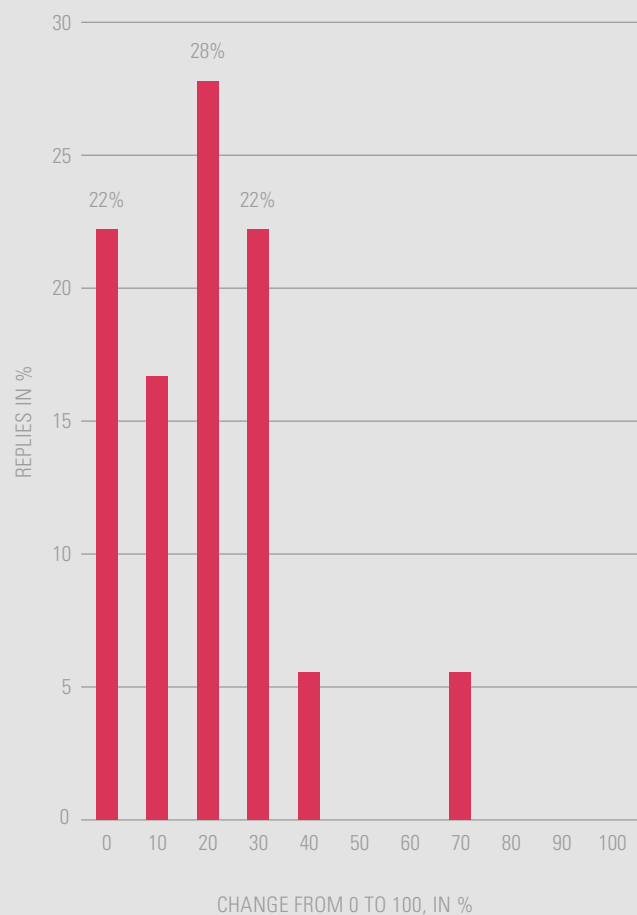
The highest rate of consent to any question in this chapter concerned branded deliveries, meaning transport services that online retailers provide in their own name. Many experts agree that this trend will have a relatively strong influence on end customer deliveries. Given the market clout of the companies driving the trend (e. g. Amazon, Zalando), this does seem plausible. Then again, the creation of new subsidiaries by e-commerce vendors is actually no more than competition to the existing business of DHL, UPS and others like them, even if it stimulates the field. Some of the respondents therefore see no cause of change in warehouse design in this context.

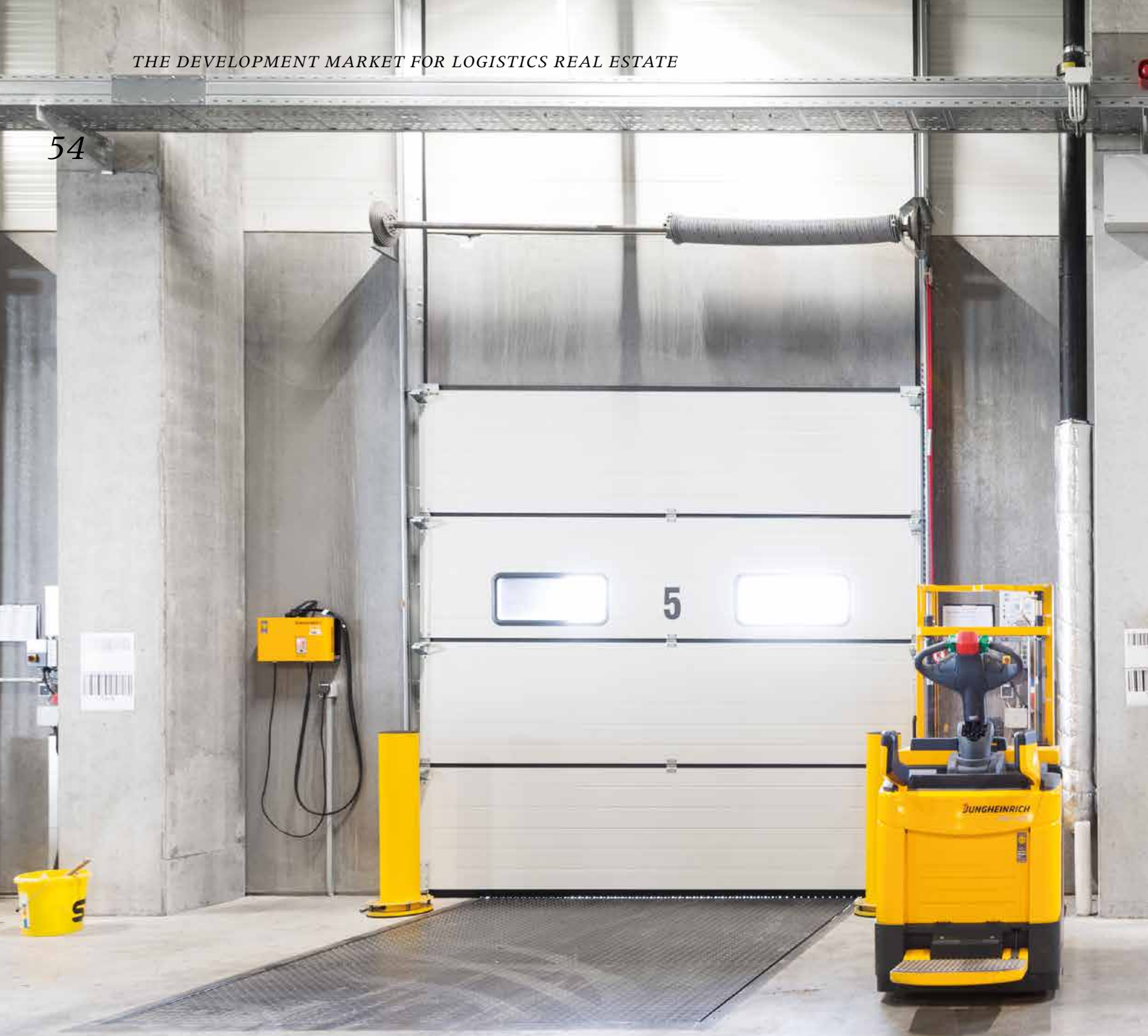
The panel is unambiguous in its assessment of how influential entirely new transport models such as pneumatic tube transport, cargo transport by trams, or subterranean cargo networks will be. Panelists agreed almost unanimously, with some degree of differentiation, that this is highly unlikely. Some actually liked the idea of the subterranean "Cargo Sous Terrain" network. The respondents voiced grave doubts, however, whether the pace of building such a network would be able to keep up with the rapid growth of the transport market.

**Fig. 29** *CHANGES CAUSED BY THE DEVELOPMENT OF PROPRIETARY DELIVERY SERVICES OF E-COMMERCE VENDORS*



**Fig. 30** *CHANGES CAUSED BY THE INTRODUCTION OF ENTIRELY NEW TRANSPORT CONCEPTS*





## Are there Other Factors that could Cause Logistics Real Estate to Change?

Warehouse builders voiced their opinion that the biggest change in logistics real estate for the time being is the emergence of city logistics in and of itself. Not least due to the increase in fresh food sales in e-commerce, logistics operations are moving closer to inner cities. This necessitates new additional logistics buildings as close as possible to downtown. Ultimately, the trend would merge store and logistics property.

### **MERGING STATIONARY STORE AND LOGISTICS PROPERTY**

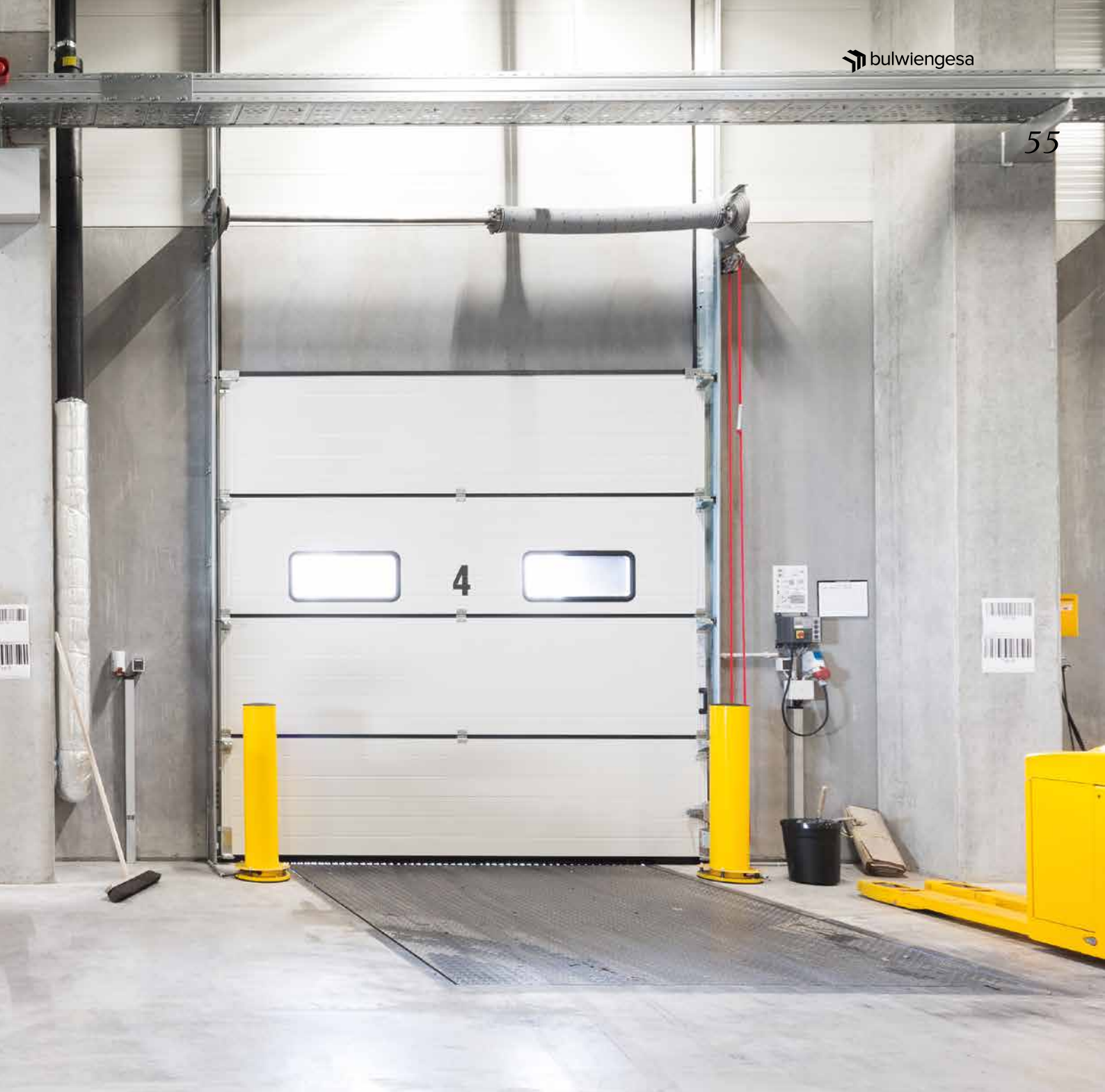
But the availability of inner-city sites or suitable properties is very limited. Even if such sites were found, the transport challenge would remain, in the panel's opinion. Answering this

question is not made any easier by the fact that large and bulky goods, such as furniture are also increasingly ordered online. The body politic is unlikely to tolerate the presence of delivery vans and lorries in inner cities beyond a certain limit. This means that alternatives are called for.

### **WANTED – THE RIGHT LOGISTICS ASSET FOR THE INNER CITY**

In order to resolve the issue of logistics sites, city logistics favours a decentralisation model consisting of many small-scale units. But for the time being, a corresponding logistics real estate type does not exist yet, and the development process is still in its infancy. Making defunct retail units available to city





logistics would be difficult to implement, as an experiment by Amazon at the Berliner Tor location in Hamburg has demonstrated. Particularly in metropolises or markets with a large consumer constituency, however, finding ways to create local delivery sites is the sine-qua-non condition of success for the idea of same-day or same-hour deliveries.

As Germany's land supply is drying up, the logistics industry and with it the real estate industry will be forced to come up with new products. In the long run, it will become harder and harder to meet the present kind of demand for sites with an optimal distance to the customer. So we will see an increase in the number of logistics parks strategically located between the logistics hot spots. Experts have suggested specialised logis-

tics parks, focusing e. g. on city logistics, e-commerce, pharma logistics, hazardous materials, etc., and this could result in the emergence of differentiated logistics real estate types. Having only just standardised the logistics warehouse, it may be time to abandon it again in favour of special-purpose properties.

# CONSTRUCTION TRENDS AND FLOOR SPACE REQUIREMENTS FROM THE USER'S POINT OF VIEW WHAT ARE YOUR EXPECTATIONS FOR THE FUTURE?

Using bulwiengesa's real estate database, the previous survey undertook a retrospective analysis of the benchmark data that went into the construction of logistics warehouses in recent years, studying the centre-to-centre dimensions, the load-bearing capacity, the warehouse height, among other specifications. This analysis places the occupier centre-stage: What are sort of needs do occupiers have today, and what should tomorrow's warehouse look like from an occupier's perspective? Have the increased market requirements already prompted changes in structural designs or floor plate quality?

**ALEXANDER MAI, DREES & SOMMER:**

*"Yes, both the logistics networks and the associated logistics property types responded. Depending on the industry, we started facilitating restructuring and planning efforts five and – in some cases – even ten years ago. However, comprehensive innovations of this sort are always preceded by time-consuming review processes and broad-based tenders. Even the actual construction work takes a long time. All in, we are looking at a process of several years – especially if the development rights have to be procured. That is why the implementation and restructuring has taken until now.*

*The newly created locations and networks are supposed to meet the requirements of the next five to eight years at a minimum. Parallel to the implementation measures, e-commerce and digitisation have further raised the pressure to act, and substantially so. This means that before the end of the ongoing implementation phase, which will drag on for a few more years yet, and before these eight years have expired, someone will have to start thinking about the ways in which the future logistics networks and sites will have to be structured."*

How do tenants and owner-occupiers of logistics properties view the issue? Within the framework of the survey, we used the bulwiengesa survey desk to ask roughly 100 of them for their opinion. About 40 well-informed replies yielded a meaningful picture.



# WHAT WOULD BE THE BENCHMARK CHARACTERISTICS OF AN “IDEAL WAREHOUSE” FOR THE NEXT FIVE TO TEN YEARS?

The premier survey for the 2015 issue of “Logistics and Real Estate” examined the building activities of recent years in regard to various benchmark characteristics of logistics warehouses. One of them is the centre-to-centre dimension of a warehouse building's uprights, which determines its flexibility of use. It turned out that a grid of 24 x 12 m is the most common centre-to-centre dimension. But what about tomorrow? What kind of system would the respondents like their ideal warehouse to have?

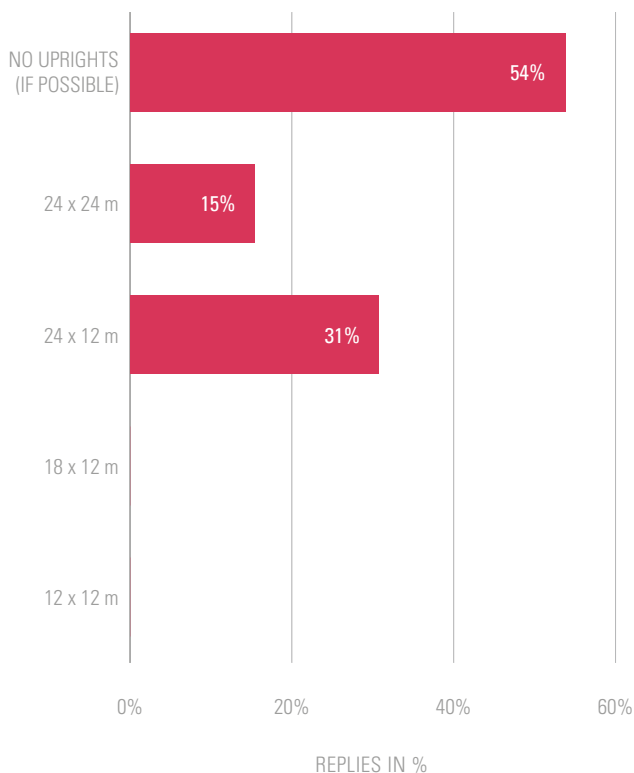
## AS FEW UPRIGHTS AS POSSIBLE FOR THE IDEAL WAREHOUSE

The answers of the occupiers show that centre-to-centre dimensions of 18 x 12 m or even 12 x 12 m are no longer up to standard. Nearly one third of the warehouse occupiers be-

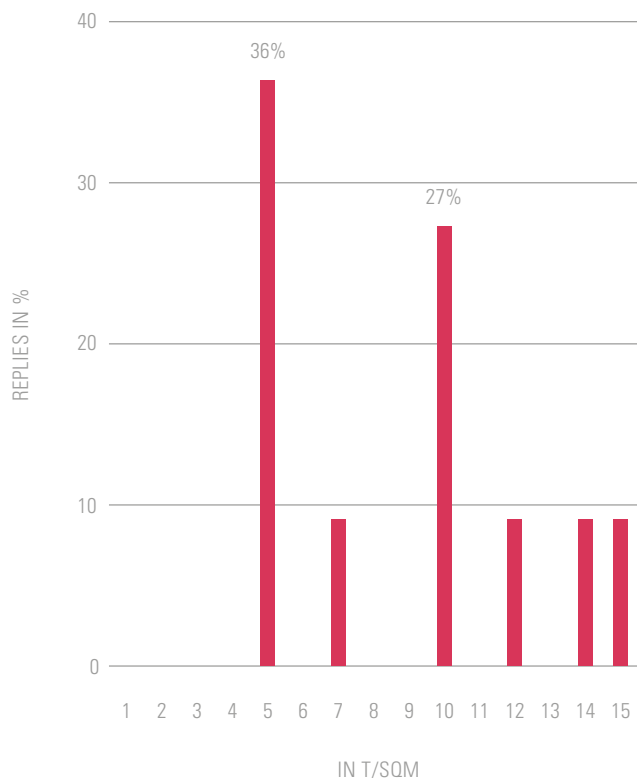
lieve that 24 x 12 m will continue to represent a sensible balance between flexibility and cost effectiveness. This matches exactly the view expressed last year. Around 15% of the respondents wished for more flexibility and advocated a slightly larger grid measurement, with the girders spaced 24 metres from each other just like the roof trusses. This would create more flexibility with rack structures.

More than 54% of the poll respondents would prefer warehouses built entirely without uprights. Like many desiderata, this ideal is compromised by the cost factor. Although much larger centre-to-centre dimensions such as 24 x 24 m are technically feasible, e. g. in the automobile industry where warehouses often have dimensions exceeding 30 x 15 m, very large halls will continue to have uprights.

**Fig. 31 CENTRE-TO-CENTRE DIMENSION OF THE IDEAL WAREHOUSE**



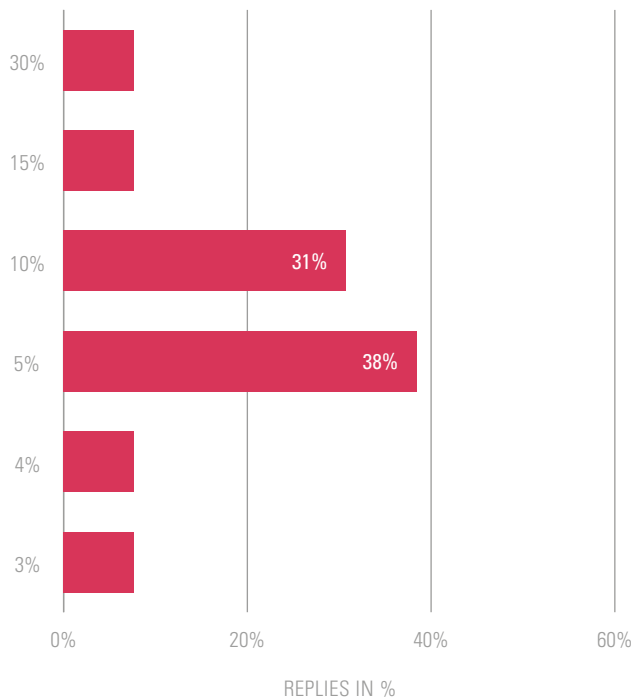
**Fig. 32 LOAD-BEARING CAPACITY OF THE IDEAL WAREHOUSE IN T/SQM**



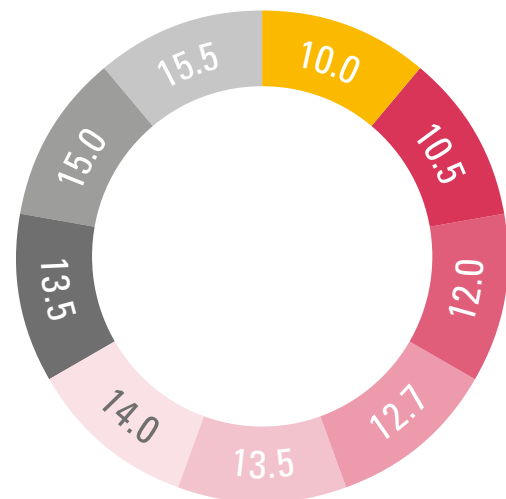
Another essential benchmark in logistics warehouse design, aside from the grid of uprights, is the load-bearing capacity of the floors. It defines what sort of goods the warehouse will be able to handle, and which logistics processes are feasible. As the one structural element least suitable for subsequent modification, the floor of a warehouse requires particular attention from the start of the planning effort to ensure the warehouse lends itself to sustainable use.

The findings of last year's data pool analysis revealed that a load-bearing capacity of 5 tons per square metre represents a sound ratio that serves current needs. Are the requirements likely to increase? More than one third of the respondents felt that a load-bearing capacity of 5 t/sqm is by all means adequate. Then again, many players quoted a requirement of 7 t/sqm. The second-most frequently quoted figure among the desiderata was a load-bearing capacity of 10 tons per square metre. Amazing as it may seem, even this failed to satisfy every user. Some believe that the limit load should be 12, 14 or even 15 tons per square metre to be adequately prepared for the future.

**Fig. 33 OFFICE SPACE SHARE OF THE IDEAL WAREHOUSE**



**Fig. 34 CEILING HEIGHT OF THE IDEAL WAREHOUSE IN METRES**



***DIGITISATION IS REDUCING THE OFFICE SPACE REQUIREMENTS***

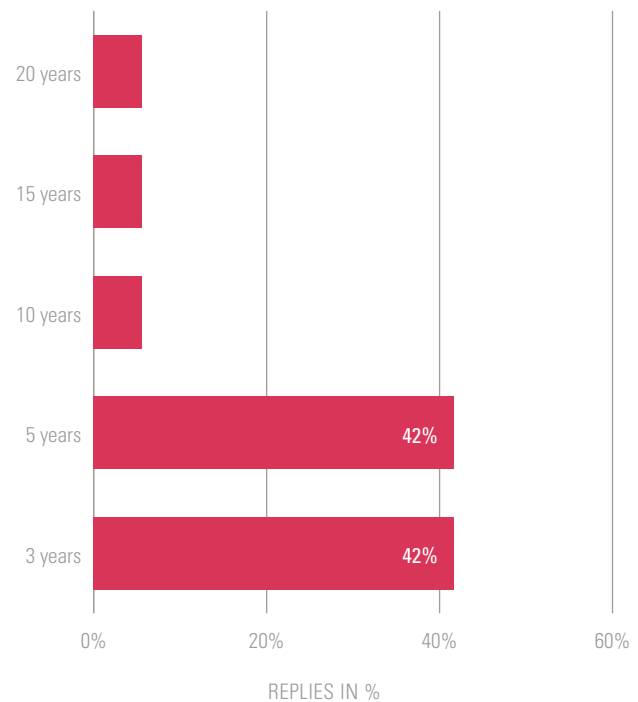
Last year's survey already showed that the deployment of modern EDP systems has made much of the office accommodation in logistics warehouses redundant. The accelerating digitisation will probably reinforce this effect. How much office space will occupiers of logistics warehouses need in the future? The figure quoted last year as sustainable was 10%. In the latest survey, roughly 31% confirmed the figure

as being standard and reflecting actual demand. But according to nearly 40% of the respondents, even 5% would suffice as a sustainable office ratio. Users quoting an even lower office share of 3% to 4% were in the minority. At the other end of the scale you find users who believe an office share of 15% or even a whopping 30% will be required long-term. This could be the case for owner-occupiers for whom the warehouse doubles as principal office. Moreover, the specific demand may also depend on warehouse dimensions, and decline in reverse proportion to size.

By contrast, the question about warehouse height, also a main structural element that defines the effective use of space, returned a mixed set of responses.

A growing number of service providers in the logistics industry prefer to rent facilities rather than building their own. This is explained by the short-term nature of logistics contracts and the quick change in requirements it brings, making logistics operators reluctant to tie themselves to a fixed facility size or location. What would be the ideal lease term for them? Although respondents had the option to choose a length of time between 0.5 and 25 years in half-year increments, only 5 different terms were quoted. The bulk of the responses favoured either 3- or 5-year terms in equal shares. Some tenants stated they strive to negotiate longer lease terms. In individual cases, even a lease term of 20 years was considered.

Fig. 35 *LEASE OF THE IDEAL WAREHOUSE*

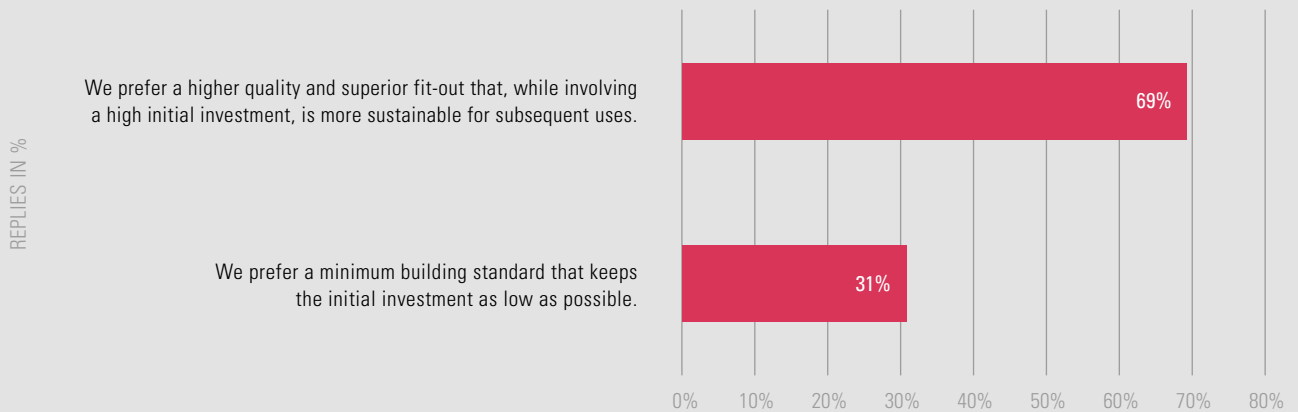


## FOCAL TOPIC: HIGH SIGNIFICANCE OF THE GREEN ASPECT

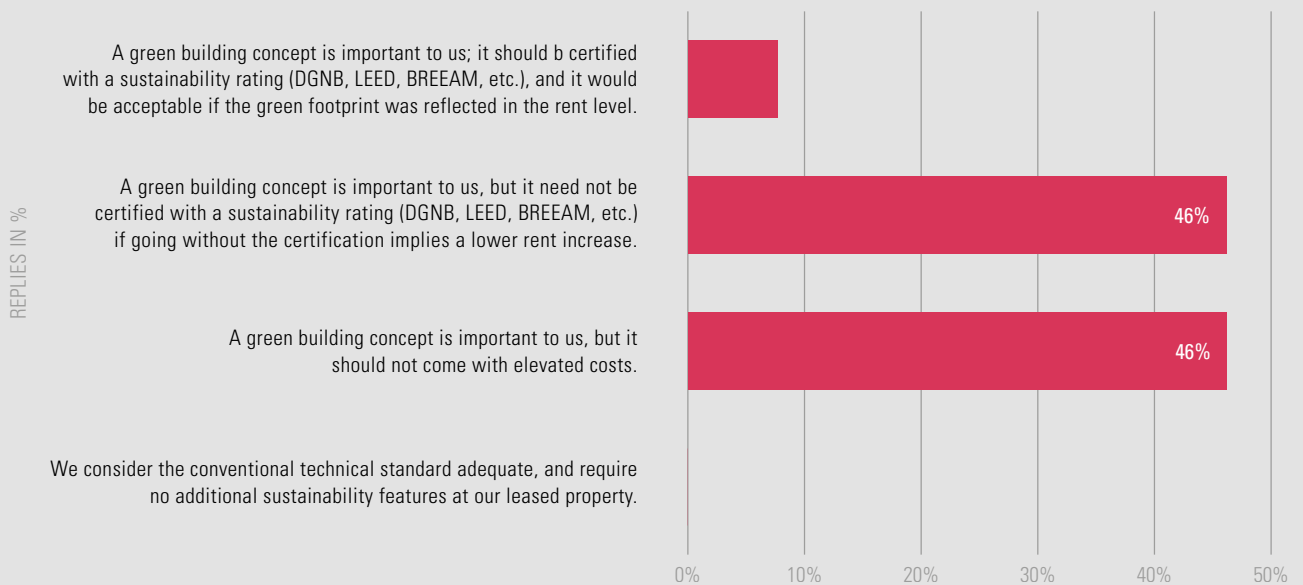
Companies belonging to the logistics or real estate industry are well aware that their business activities will impact the natural environment. At the same time, they are under considerable margin pressure. It seriously compromises their freedom of action in the decision-making process. We asked logistics real estate occupiers to tell us: What is your building standard of choice with a view to the next five to ten years?

More than two thirds of the respondent occupiers prioritised a high warehouse quality, and were prepared to spend more on the initial investment in return for it. However, the extra costs are expected to translate into advantages during the useful life of the warehouse and recover the costs. Inversely, almost one third of the respondents are rather cost sensitive and gravitate toward the minimum standard as far as new-build structures go, so as to keep the initial investment affordable.

**Fig. 36** WHICH POSITION ON BUILDING STANDARDS ARE YOU MOST INCLINED TO AGREE WITH, CONSIDERING THE NEXT FIVE TO TEN YEARS?



**Fig. 37** WHICH POSITION ON GREEN BUILDING CONCEPTS ARE YOU MOST INCLINED TO AGREE WITH, CONSIDERING THE NEXT FIVE TO TEN YEARS?



This leaves the question how the elevated construction standard is implemented. Are green building concepts involved that may or may not be confirmed in a certificate? The respondents were quite specific in regard to the scope of their commitment. A green building concept is preferred as long as it is cost-neutral or, in the case of rented premises, does not come with a substantial rent premium. Only a fraction of the polled market players cared about a green label certificate in evidence of a sustainable building concept.

**ALEXANDER MAI, DREES & SOMMER:**

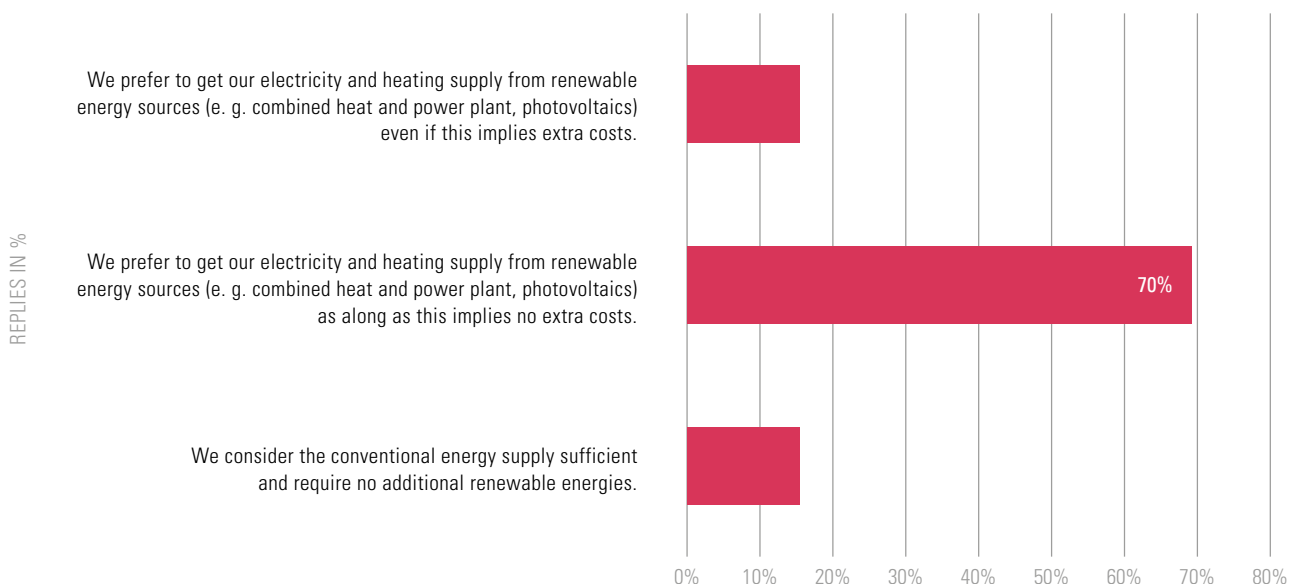
*“Aspects like LED lighting, the use of renewable energies or a choice of sustainable building materials have generally become standard. In the past, investors or tenants used to resent the added costs, but this is less and less the case in the context of new-build developments, not least because the surging service charges play a bigger role.”*

A vast majority of 84% of the occupiers advocates the use of renewable energy sources for electricity and heating. Roughly 15% would even accept a higher overhead in return. Against the background of the high margin pressure they are under,

the majority of respondents favoured a solution that would be close to cost-neutral. A minority of around 15%, however, finds a conventional energy supply quite adequate.

Rather than being mainly interested in potential energy savings, the panel of expert respondents are also concerned about the security of supply. Subjects that were raised included multiple redundancy in regard to energy feeds and the provision of a battery system. This is motivated, for one thing, by the growing data processing capacities that especially e-commerce providers require to manage their digital master data and bonus systems. Certain sections in some warehouses have actually come to resemble data centres for this reason. Whenever the subject of peri-urban properties that are employed in small-scale distribution in cities is raised, respondents talk in detail about the use of e-mobility for delivery or loading purposes. Such scenarios presuppose that a given logistics property or its site has a sufficient energy supply to ensure the associated increase in energy consumption is met. This has made the option to maintain a sizeable, secure and autonomous in-house power supply, e. g. for charging the transport vehicles, a subject seriously discussed by some warehouse occupiers.

**Fig. 38** WHICH POSITION ON THE USE OF RENEWABLE ENERGIES ARE YOU MOST INCLINED TO AGREE WITH, CONSIDERING THE NEXT FIVE TO TEN YEARS?







# *THE INVESTMENT MARKET FOR LOGISTICS REAL ESTATE*

## PATTERNS AND PREFERENCES IN THE INVESTOR LANDSCAPE

Investor demand for logistics real estate has increased at a steady pace in recent years. The comparatively high rates of return that this asset class yields, and the fact that its business is of a less cyclical nature than office and retail property markets make it highly attractive for real estate investors. In short, the market is shifting. But how exactly have transaction volumes developed over time? Which logistics regions do investors focus on? Who are the major market operators? These are the questions addressed in this chapter.

To answer them we thoroughly studied the investment market of the past five years, and compiled a valid data basis covering the fundamental key ratios of all regions. It even permits predictions regarding future trends.

In an innovative variation of the quantitative analysis of the investment market, we asked relevant market operators to share their vision of tomorrow's logistics property. Together with the observations made by experts we talked to, their answers provide an overview of logistics real estate aspects that will gain in significance.



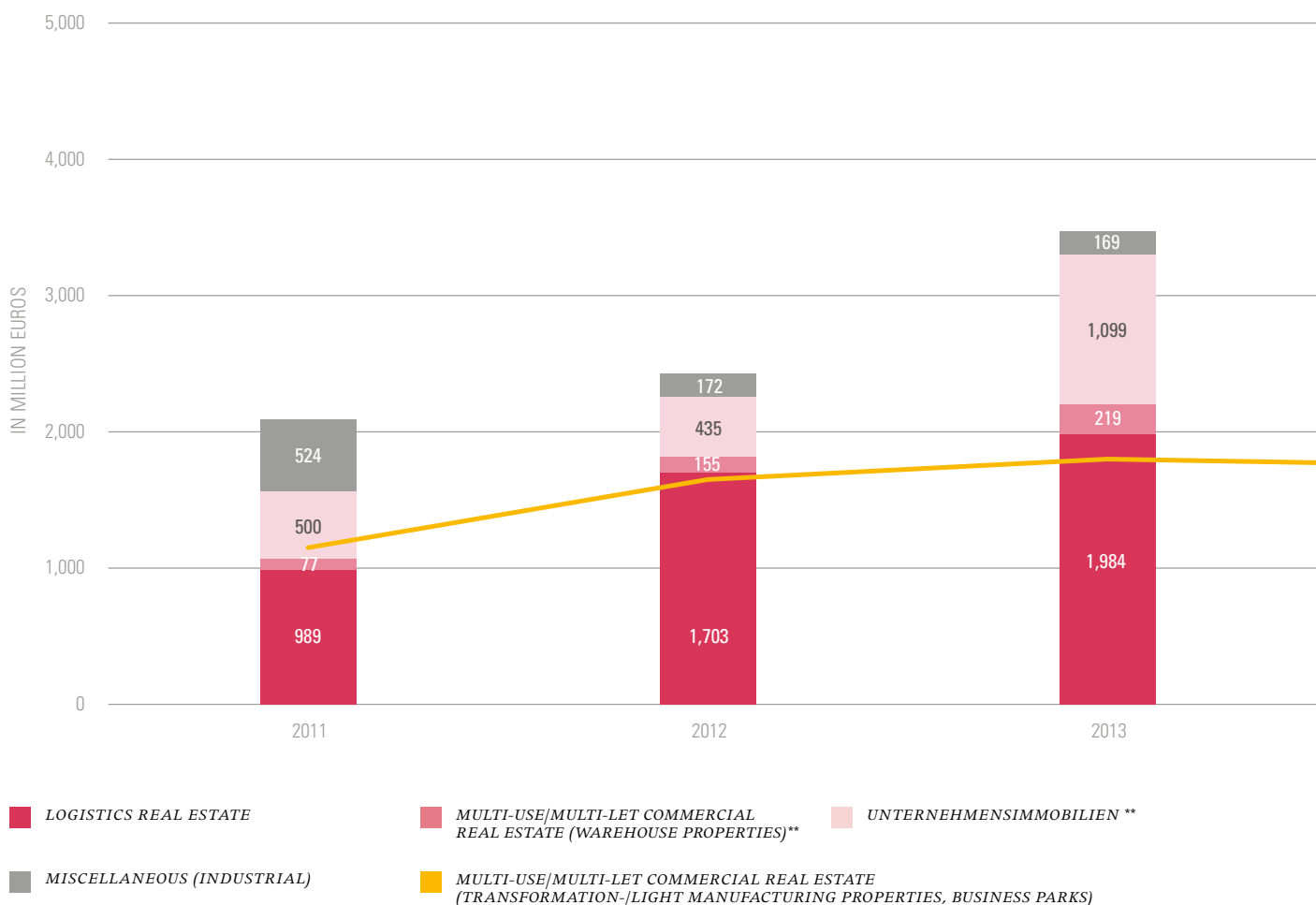
# 64 THE INVESTMENT MARKET FOR LOGISTICS PROPERTIES IN GERMANY 2011 THROUGH 2016

The record result of 2014 on Germany's investment market for commercial real estate was topped yet again by almost another 40% last year after a transaction volume of nearly 56 billion euros across asset classes. Especially the robust final quarter of 2015 with a record sales volume of 18 billion euros played a key role here. It exceeded the five-year average by almost 100%. The only time a similar year-end total was registered was in the banner year of 2007. Simultaneously, Germany's investment markets are subject to strong demand by both domestic and foreign investors. The investment conditions are persistently attractive as a result of the historically low interest level, favourable financing conditions, a moderate price level compared to other countries, and the overall stable German economy.

## LOGISTICS REAL ESTATE INVESTMENT VOLUMES TO EXCEED HIGH PRIOR-YEAR TOTAL

Between 2011 and 2015, c. 11.2 billion euros were invested in pure warehouse/logistics and transshipment real estate. Adding the amounts invested in German corporate and industrial real estate brings the investment total for this period up to c. 17.5 billion euros. Investments in pure logistics and warehouse real estates hit a new record high of nearly 3.3 billion euros in 2015.\*\*\* It topped the prior-year result of well over 2.8 billion euros by 16.5% but also exceeded the 5-year mean of just under 2.3 billion euros by about 45%. Still, while the absolute transaction revenue experienced a

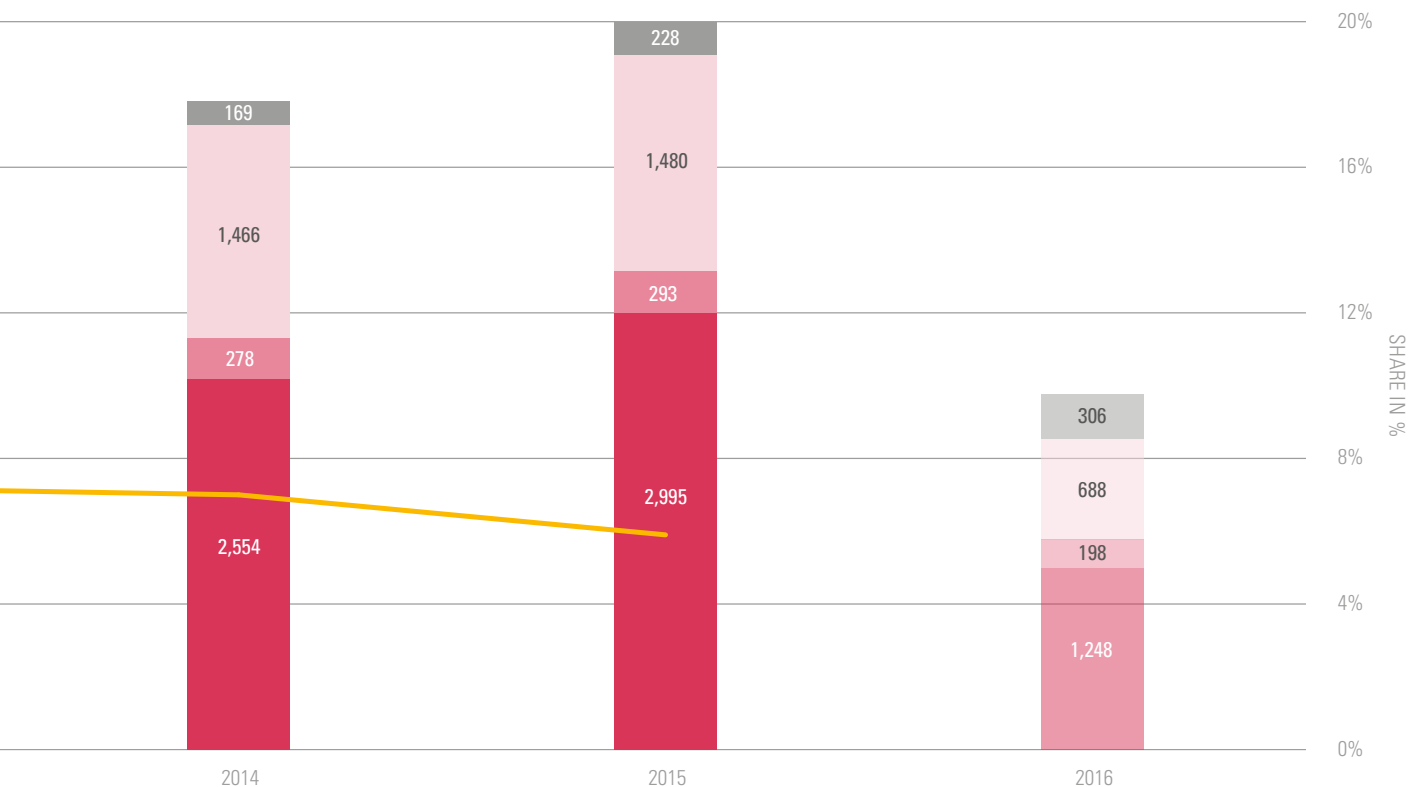
Fig. 39 INVESTMENT VOLUME IN GERMAN LOGISTICS, CORPORATE AND INDUSTRIALS REAL ESTATE, IN MILLION EUROS, 2011-2015, OUTLOOK 2016\*



steady increase during the period under review, its share in the total commercial real estate investment volume actually decreased year on year, from 7% in 2014 to 6% in 2015. The obvious reason is the very high year-end result on the real estate investment market as a whole, which includes office, retail and hotel property, etc.

The momentum has carried over into the ongoing year: By the end of July 2016, transactions in logistics and transshipment properties added up to more than 1.4 billion euros, more or less matching the prior-year level. When including corporate/ industrial and other commercial real estate, the sum total invested in Germany to date approximates 2.4 billion euros.

To diversify their investment portfolios, many investors inside and outside Germany are desperately looking for investment opportunities on the German logistics real estate market. The increased demand has intensified the competitive situation, which in turn has raised the pressure to invest, especially for institutional investors. Simultaneously, the supply in adequate logistics facilities is rapidly drying up, and nowhere faster than in Germany's major metro regions. When factoring in certain big-ticket transactions that are still being negotiated, chances are that the 2015 record mark of almost 3.3 billion euros will be matched.



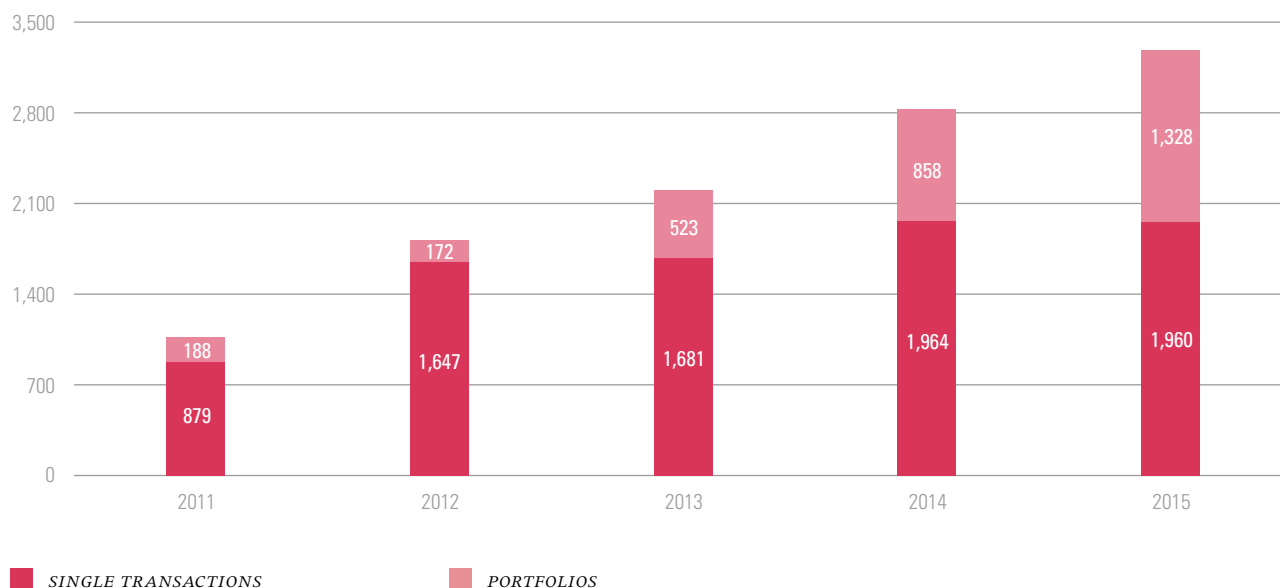
\*\*The investment volume shown for warehouse properties may deviate slightly from the figures published in previous market reports by INITIATIVE UNTERNEHMENSIMMOBILIEN because the entire dataset was recalculated. The insights gained in the process have noticeably improved the data transparency.  
 \*\*\*Logistics properties and warehouses were considered summarized. A definition of warehouses according to INITIATIVE UNTERNEHMENSIMMOBILIEN is available at [unternehmensimmobilien.net](http://unternehmensimmobilien.net).

## 66 PORTFOLIO TRANSACTIONS ON THE GERMAN LOGISTICS REAL ESTATE MARKET

For many market players, portfolio transactions represent a strategic means of quickly placing a high investment volume and thereby increasing one's market share. Portfolios deals began to take an ever bigger chunk out of the generally growing investment total in 2013. In 2015, the portfolio transaction volume totalled approximately 1.3 billion euros and thus another serious one-year increase (+55%). In fact, package sales accounted for over 40% of the transaction to-

tal in 2015. By contrast, the volume of single-property deals remained more or less stable, showing a slight decline by 0.2% to a total of 1.96 billion euros. That said, there were four single transactions with price tags of more than 100 million euros each in 2015. The single-biggest deal was the sale of the H&M central warehouse (115,000 sqm) in Hamburg to ADF Asset Management.

Fig. 40 LOGISTICS INVESTMENT VOLUME IN MILLION EUROS, BY TYPE OF TRANSACTION, 2011–2015



### 17 PORTFOLIO TRANSACTIONS OF MORE THAN 100 MILLION EUROS BETWEEN 2011 AND 2015

The largest transactions in Germany are accomplished through portfolio deals, and these often run in the nine-digit price range. Since 2011, altogether 38 portfolio transactions involving logistics assets were traded in Germany. In 2015 alone, the segment of logistics and transshipment properties saw 19 portfolios with an aggregate investment total of 1.3 billion euros and a floor area of more than 3.4 million sqm

change hands. Top buyer with six portfolio acquisitions was Logikor (Blackstone) in terms of capital invested (1.98 billion euros) and take-up (3.23 million sqm). Through its acquisition of an Immofinanz portfolio, the same market player also closed by far the biggest single transaction in 2015.

At 133.7 million euros, the average price tag of the portfolios in 2015 fell short of the five-year mean (140.2 million euros) by only 6.4 million euros, thus confirming that big-ticket portfolio transactions of over 100 million euros have become a regular market occurrence while also bolstering the high general price level.

## ONCE AGAIN, PORTFOLIO TRANSACTIONS REMAIN THE GROWTH ENGINE IN 2016

Like last year, portfolio sales accounted for a substantial share of the total volume in logistics and transshipment real estate transactions this year to date. There have been three sales with a nine-digit price tag each. About 37% or 536 million euros of the sales registered in 2016 to date represented portfolio

transactions. Going forward, the extensive investment activity is expected to continue, driven by domestic and foreign capital. In addition to the Malaysian sovereign wealth fund EPF, which intends to invest 500 million euros in industrial and logistics real estate in a joint venture with Dietz Germany GmbH, the AEW logistics property fund LOGISTIS is planning to step up its commitments in Germany by investing 400 million euros in logistics assets.

Fig. 41 *TRADED LOGISTICS REAL ESTATE PORTFOLIOS BY INVESTMENT VOLUME, 2016\**

RANK	PORTFOLIO TRANSACTION	BUYER	SELLER	INVESTMENT VOLUME, IN MILLION EUROS (ALL ASSETS)	AVG. PRICE IN EUROS/SQM	BUILDING FLOOR AREA, IN SQM	AVG. ASSET SIZE, IN SQM
1	Goodman to Logicor	Logicor (Blackstone)	Goodman Group	250	504	496	41,333
2	VGP portfolio (50% interest)	Allianz Real Estate GmbH Germany	VGP Industrial Parks	250	k. A.	k. A.	k. A.
3	Gramercy Portfolio	Gramercy Property Europe (75 %)	Gramercy Property Trust (75 %)	225	601	374,5	41,611
4	grundbesitz Fokus	grundbesitz Fokus Deutschland	Deutsche Post DHL Group	93	1.860	50	5,556
5	Alpha Industrial an Global Gate	Global Gate Capital Management	Alpha Industrial GmbH & Co. KG	69	941	73	14,700
6	Chambers Street Properties / Goodman to Gramercy	Gramercy Property Europe (20 %)	Goodman Princeton Holdings (Lux) S.a.r.l (GPH Luxembourg) (20 %)	60	600	100	11,111
7	Metawerk to Geneba	Geneba Properties N.V.	Metawerk	30	769	39	13,000
8	greenfield to Geneba	Geneba Properties N.V. (94 %)	greenfield development GmbH (94 %)	25	500	50	26,000
9	Birkart to Eyemaxx	EYEMAXX Real Estate AG (93 %)	Birkart GmbH & Co. Grundstücksverwaltung KG (93 %)	25	625	40	8,000

\* The evaluation includes all transactions up to the key date of 31/07/2016

## 68 WHO BUYS IN GERMANY? – ORIGINS OF THE INVESTORS

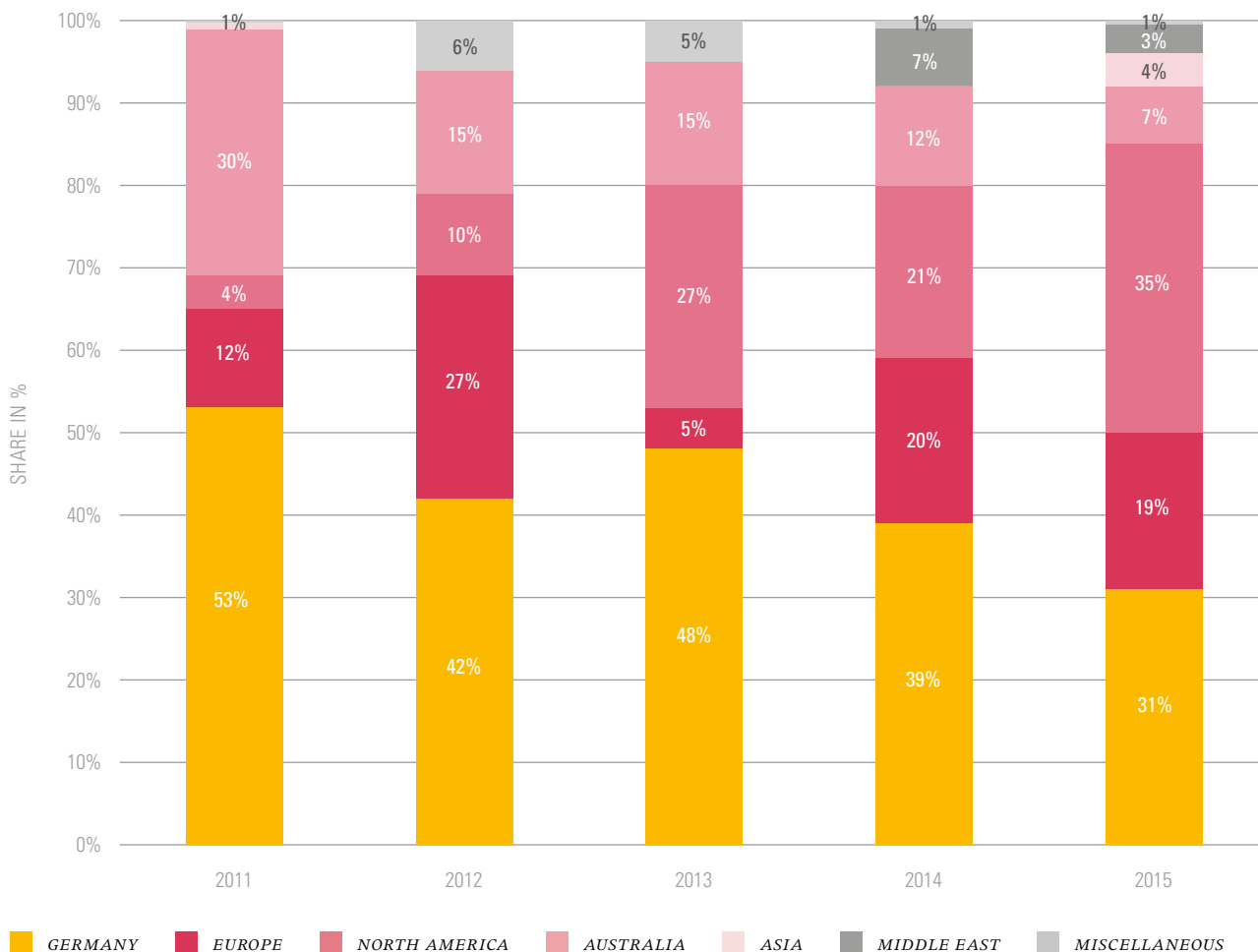
### THE SHARE OF FOREIGN INVESTORS HAS INCREASED BY MORE THAN 50% SINCE 2011

Since 2011, the interest of cross-border investors in German logistics real estate has rapidly increased. Having stood at 47% as recently as 2011, the foreign share had climbed to 69% by 2015. The greatest demand from outside Europe was generated by North American investors. Particularly large stakes in the German investment market were acquired by players from the United States and the United Kingdom. Striking to note is the relatively high share of Australian investors, which is essentially explained by Goodman, a global operator from “down under.” By contrast, Asian investors did not seriously commit themselves on the market until 2015.

Foreign operators dominate the market for large-scale investments: In 2015, they signed eight out of the ten biggest single transactions. During the period studied, foreign players accounted for nearly 64% of the volume of transactions involving assets worth more than 50 million euros. In the segment of assets worth 20 million euros or more, the average transaction size exceeds 31 million euros. German investors prefer slightly smaller deals. Their average transaction value in the same segment is approximately 28 million euros.

Meanwhile, the share of domestic commitments declined during the period under review. By the end of 2015, it accounted for barely a third of the total investment volume in Germany.

Fig. 42 : INVESTMENTS BY ORIGIN OF BUYER AND YEAR, 2011–2015



# THE INVESTOR LANDSCAPE FOR LOGISTICS PROPERTIES IN GERMANY

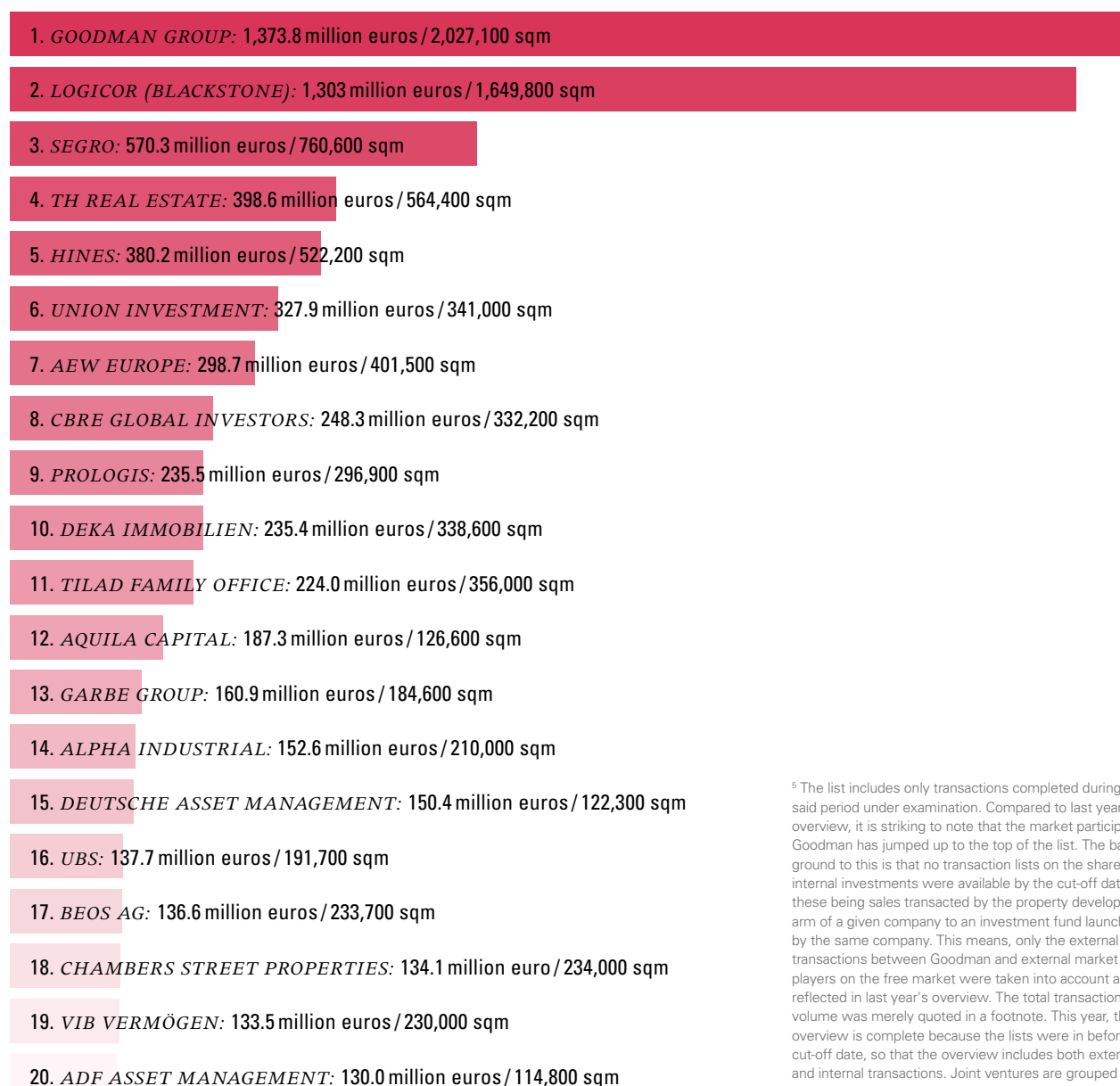
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## SECONDARY SIGNIFICANCE OF LOGISTICS IN GERMAN PORTFOLIOS

There are numerous reasons for the recent prominence of international market players, among them the growing transparency of the German logistics real estate market, and the investment pressure and need for yield prevailing worldwide. Between 2011 and 2015, the leading 20 investors included

only ten German companies. This demonstrates the keen interest that foreign investors have in this market, while also highlighting the fact that logistics still plays a subordinate roles on German real estate portfolios. Most of the foreign operators hail from the English-speaking world, which have traditionally boasted the highest degree of market transparency. Moreover, logistics has a similar status in the real estate industry as the asset classes office and retail.

Fig. 43 TOP 20 LOGISTICS REAL ESTATE INVESTORS, 2011–2015<sup>5</sup>



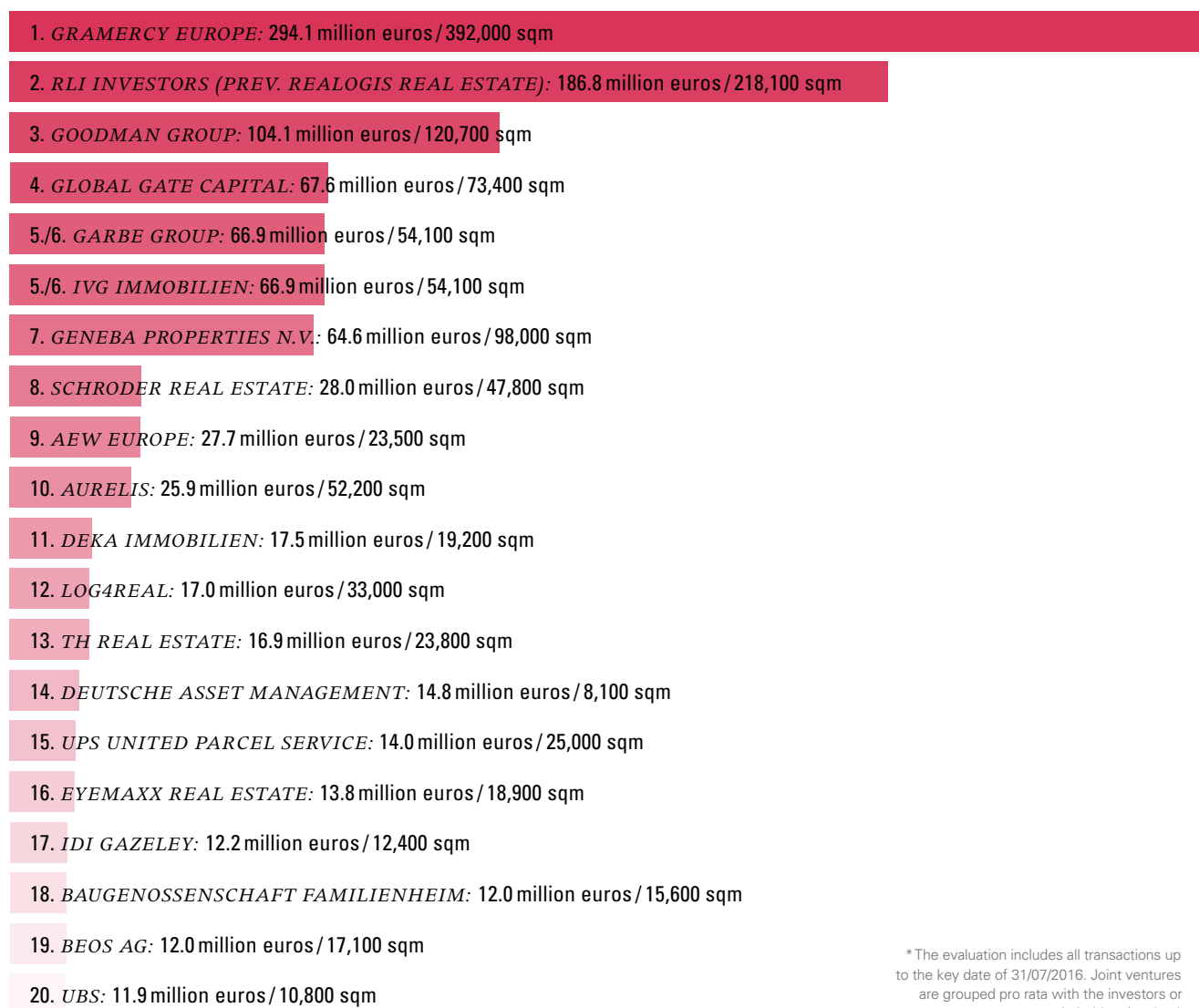
<sup>5</sup> The list includes only transactions completed during the said period under examination. Compared to last year's overview, it is striking to note that the market participant Goodman has jumped up to the top of the list. The background to this is that no transaction lists on the shares of internal investments were available by the cut-off date, these being sales transacted by the property development arm of a given company to an investment fund launched by the same company. This means, only the external transactions between Goodman and external market players on the free market were taken into account and reflected in last year's overview. The total transaction volume was merely quoted in a footnote. This year, the overview is complete because the lists were in before the cut-off date, so that the overview includes both external and internal transactions. Joint ventures are grouped pro rata with the investors or stakeholders involved.

Compared to last-year's ranking, the hierarchy has changed as follows: Goodman Group moved up from fifth into first place, pushing Logicor (Blackstone) and SEGRO down to second and third rank, respectively. The biggest gain in terms of invested capital, however, was reported by Hines, which ascended to fifth place from place 17. The ten leading investors had a combined investment total of 5.4 billion euros or more than 47% of the capital committed in German logistics and transshipment real estate between 2011 and 2015. The portfolio share of this total equalled c. 2.19 billion euros or around 41%.

### NORTH AMERICAN AND ASIAN INVESTORS DOMINATING

Cross-border investors have significantly gained in prominence on Germany's investment market since 2014. Borne aloft by the growing momentum of the national economy, North American investors have been particular quick to expand their activities on the German market. For the fourth time in as many years, roughly one quarter of the year-end investment total will originate in North America in 2016. That said, Asian investors seriously expanded their footprint as well: By acquiring a single logistics asset of 115,000 sqm for 100 million euros, they claimed a market share of 7% during the first seven month of the year. Once the Malaysian sovereign wealth fund enters the market, it will raise the Asian share even further. Another obvious factor that could flush capital onto the German market is the outcome of the Brexit referendum, as it could cause unease among investors and prompt them to bypass the UK at least temporarily. The share of German investors in the domestic investment total equals 52% at the moment.

Fig. 44 TOP 20 LOGISTICS REAL ESTATE INVESTORS, 2016\*



\* The evaluation includes all transactions up to the key date of 31/07/2016. Joint ventures are grouped pro rata with the investors or stakeholders involved.

**NEW MARKET PLAYERS WILL RESHUFFLE THE RANKING IN 2016**

The investor ranking this year to date already manifests significant changes. Gramercy Property Europe climbs up the ladder ranking number one largely because of the acquisition of the Gramercy portfolio.

Sizeable single transactions worth 187 million euros during the first seven months of 2016 have helped RLI Investors

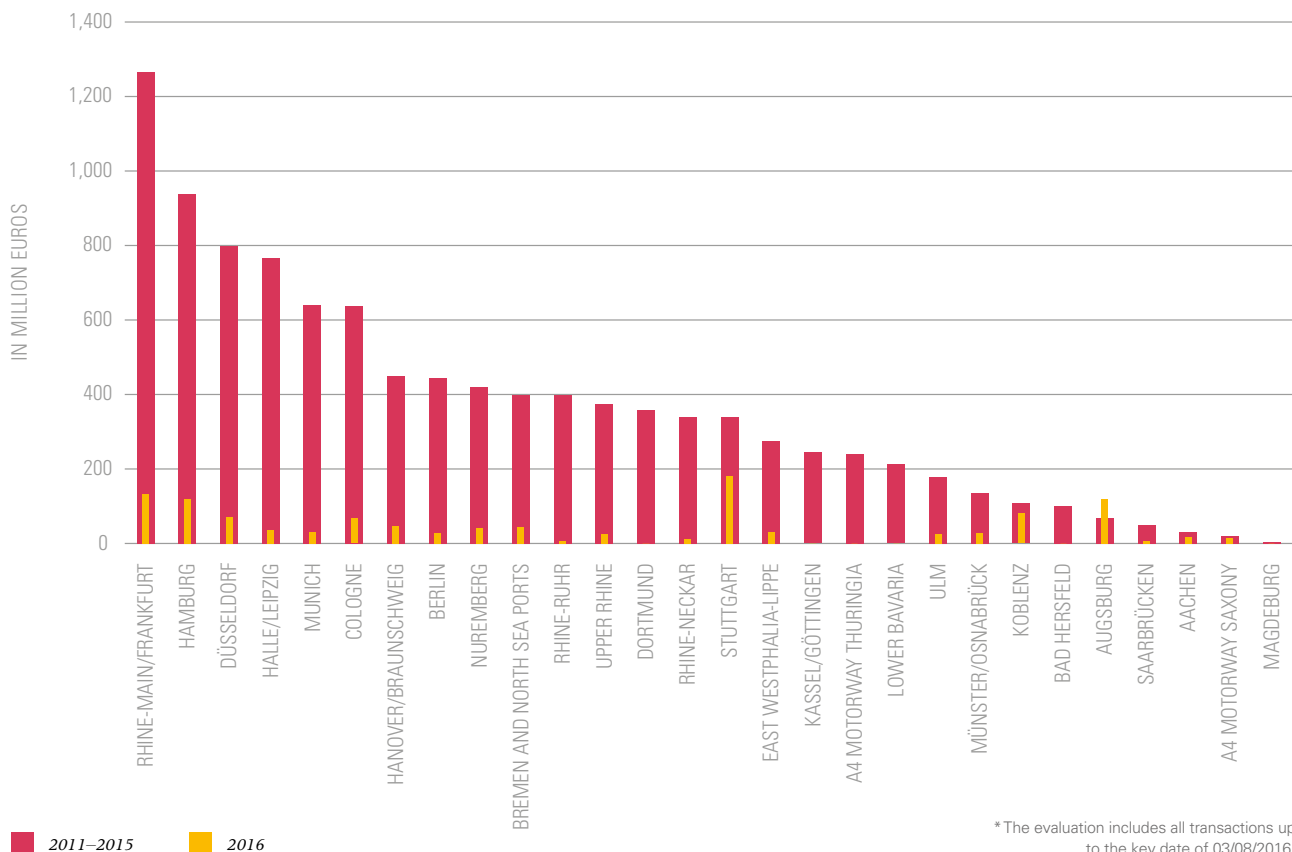
to position itself on the second rank, followed by Goldman on rank three. While Global Gate Capital ranks fourth, Garbe Group and IVG Immobilien, operating mainly as a joint venture in 2016, share the ranks five and six. None of the top performers of the first half-year 2015 – these being Hines, Aquila Capital, ADF Asset Management, and especially Logisor as logistics investment arm of Blackstone – is part of the Top 20 ranking any longer. Other players that have dropped out of the ranking include SEGRO, CBRE Global Investors, and Alpha Industrial.

**INVESTMENT ACTIVITY BY LOGISTICS REGION**

Given its location in the European heartland and its superb infrastructure, Germany is one of the key logistics hubs in Europe. Aspects like infrastructure, accessibility, construction activity, labour market and economic structure enter into a snapshot of a given location's attractiveness for logistics-related uses. But the investment volume, too, reflects the attractiveness of a given logistics region. On this count,

the regions Rhine-Main/Frankfurt, Hamburg, Düsseldorf, Halle/Leipzig, Munich and Cologne were at the head of the field between 2011 and 2015. In the time since the previous evaluation, Düsseldorf pushed Cologne from third down to sixth place, whereas Halle/Leipzig advanced into fourth place replacing Munich which dropped one notch.

**Fig. 45 INVESTMENT VOLUME BY LOGISTICS REGION, IN MILLION EUROS**



\* The evaluation includes all transactions up to the key date of 03/08/2016.



The Top 5 regions alone account for roughly 38% of the total amount invested between 2011 and 2015, while the Top 10 regions claim a combined 59% of the transaction total. This goes to show that the potential transaction volume does not hinge on the appeal of the regions alone. Another definitive factor is the availability of investment-grade logistics real estate.

**STRONG CONCENTRATION PROCESSES IN THE TOP LOGISTICS REGIONS**

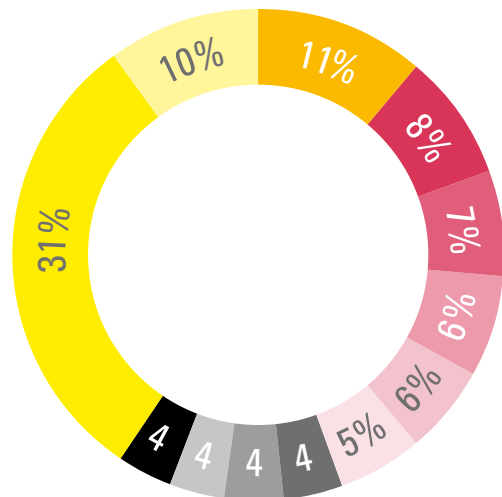
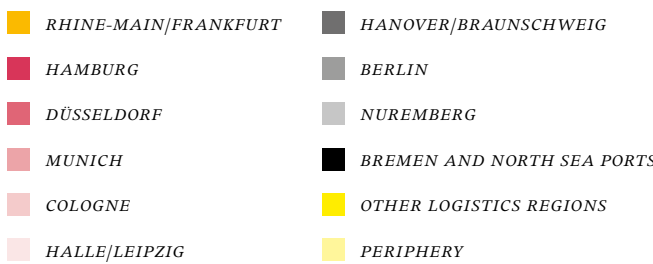
As in previous years, the bulk of the transaction volume of 2016 will be generated in logistics regions with an anyway high market attractiveness. Investors have continued to gravitate toward Rhine-Main/Frankfurt and Hamburg, with Rhine-Main/Frankfurt having attracted just over 140 million euros to date, and the Hamburg region just under 130 million euros to date. But the true overachiever of the year is the Stuttgart region with a sum of more than 190 million euros. The spike is explained by a number of single deals that one domestic investor transacted in the region. In a similar develop-

ment, Augsburg moved ahead of Rhine-Main/Frankfurt and Hamburg into second place with c. 180 million euros to date. Also among the five regions with the highest investment volumes, if at considerable distance, is the Koblenz region. It has pushed Düsseldorf back into sixth place.

Another region that has experienced a serious slump this year is Rhine-Ruhr including Duisburg, slipping from 5 to 22. It remains nonetheless an excellent logistics site because of its location on the Rhine close to the great North Sea ports of Rotterdam and Antwerp, and in the heart of the economic corridor extending from London to Milan. In addition to high demand, the region – and Düsseldorf region nearby – still offers a good supply of investment-grade properties at reasonable prices.

Overall, the ten regions with the highest investment volumes have already attracted c. 1,022 million euros this year to date. So chances are that by the end of 2016 these Top 10 regions alone might exceed the 2011 investment total for Germany as a whole.

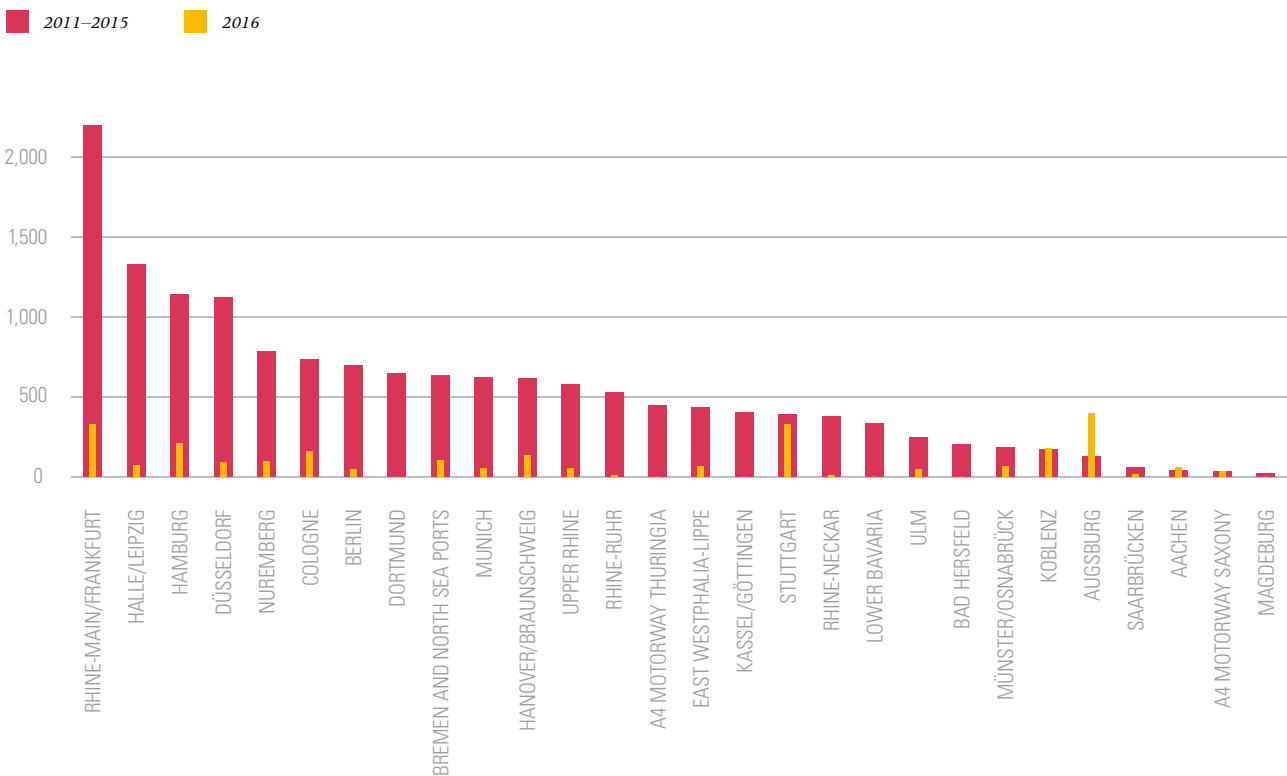
**Fig. 46 BREAKDOWN OF INVESTMENTS BY LOCATION, 2011–2015**



If you take the ranking of logistics regions by logistics space traded and compare it with the investment volume ranking, you will note slight shifts. While Rhine-Main/Frankfurt remains in the top spot, the Halle/Leipzig region moves into second place, ahead of Hamburg. Nuremberg and Berlin slip

to fifth and seventh place, respectively, whereas Munich and Hanover/Braunschweig drop back to ranks 10 and 11. This highlights the difference in average price levels for logistics real estate between Munich, on the one hand, and cities like Nuremberg and Berlin, on the other hand.

Fig. 47 LOGISTICS REGIONS BY TRADED FLOOR AREA VOLUME, IN '000 SQM



\* The evaluation includes all transactions up to the key date of 31/07/2016.

## SIZE STRUCTURE OF THE TRANSACTIONS

Generally speaking, assets in a size band of 20 to 50 million euros claim an above-average share of the investment total in German logistics real estate. It is a size category favoured most notably by domestic investors, and very common on the market. By contrast, large objects in a price range starting at 100 million euros are rather underrepresented on the market, but will quickly claim a large share of the transaction total due to their sheer size and higher selling prices.

### *FOREIGN PLAYERS PREFER LARGER AND PRICIER ASSETS*

The increase in the number of foreign investors on the German logistics market coincides with a growing share of big-ticket assets in the transaction total. Rather than being a coincidence, it reflects a preference for larger investments as a quick way to corner market shares and to bulk up the own portfolio. Analogously, the expanding presence of overseas investors has also caused the market balance to shift toward pricier assets.

To some extent, the shift is attributable to the strategy of German investors who seek to steer clear of the cluster risk associated with very large-scale assets. But since foreign market players are not as familiar with the various German logistics regions, they tend to focus on the large, well-known top regions. Sound but smaller regions on the periphery remain more of an insider tip and the domain of domestic operators.

For obvious reasons, large-scale assets will quickly claim a larger chunk of the market action because a single property of this size tends to equal the amounts paid for several smaller properties – the reverse being true for small-scale assets. For this reason, the share of logistics assets in the price category below 10 million euros failed to claim more than 15% of the transaction total in any of the years under review. In fact, properties of the lowest price category never got past a share of 5%. The buyer side of transactions in this size band is strongly dominated by owner-occupiers and private investors, whereas institutional investors play only a negligible role.

Fig. 48 INVESTMENTS BY TRANSACTION SIZE BANDS, PRO-RATA IN %, 2011–2015

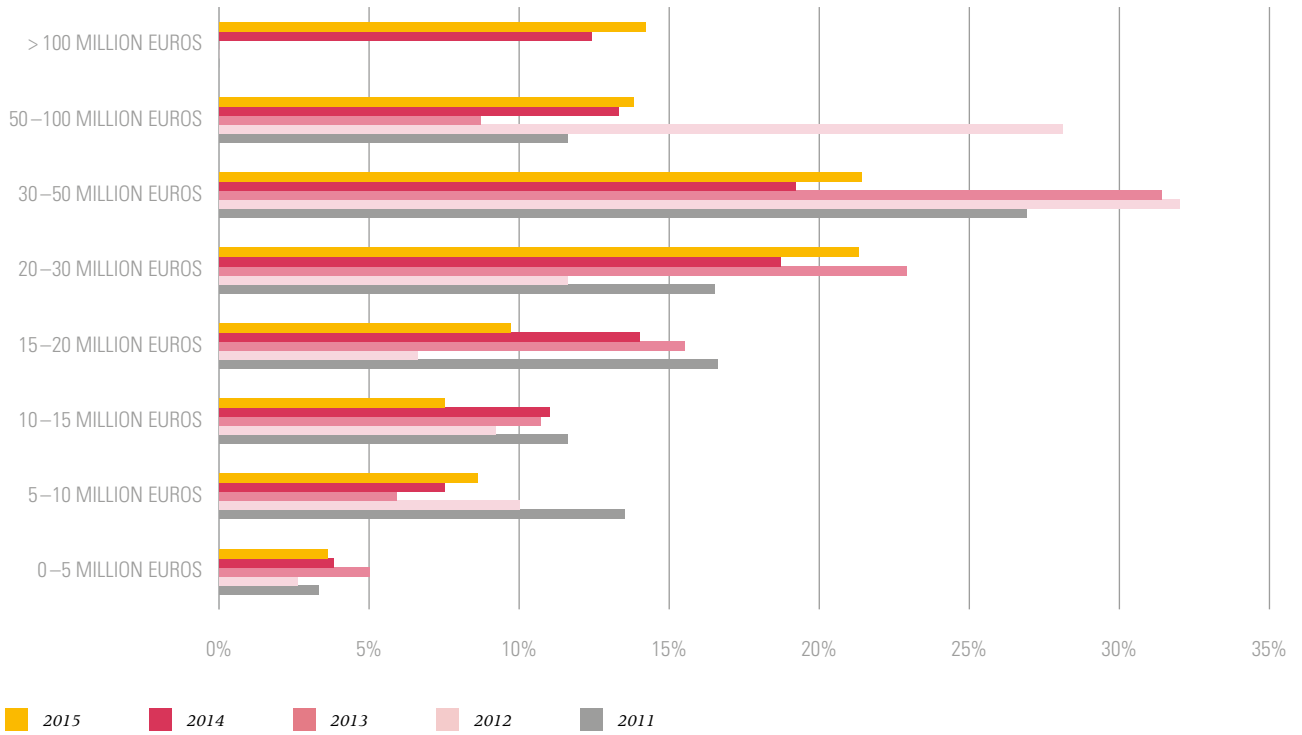
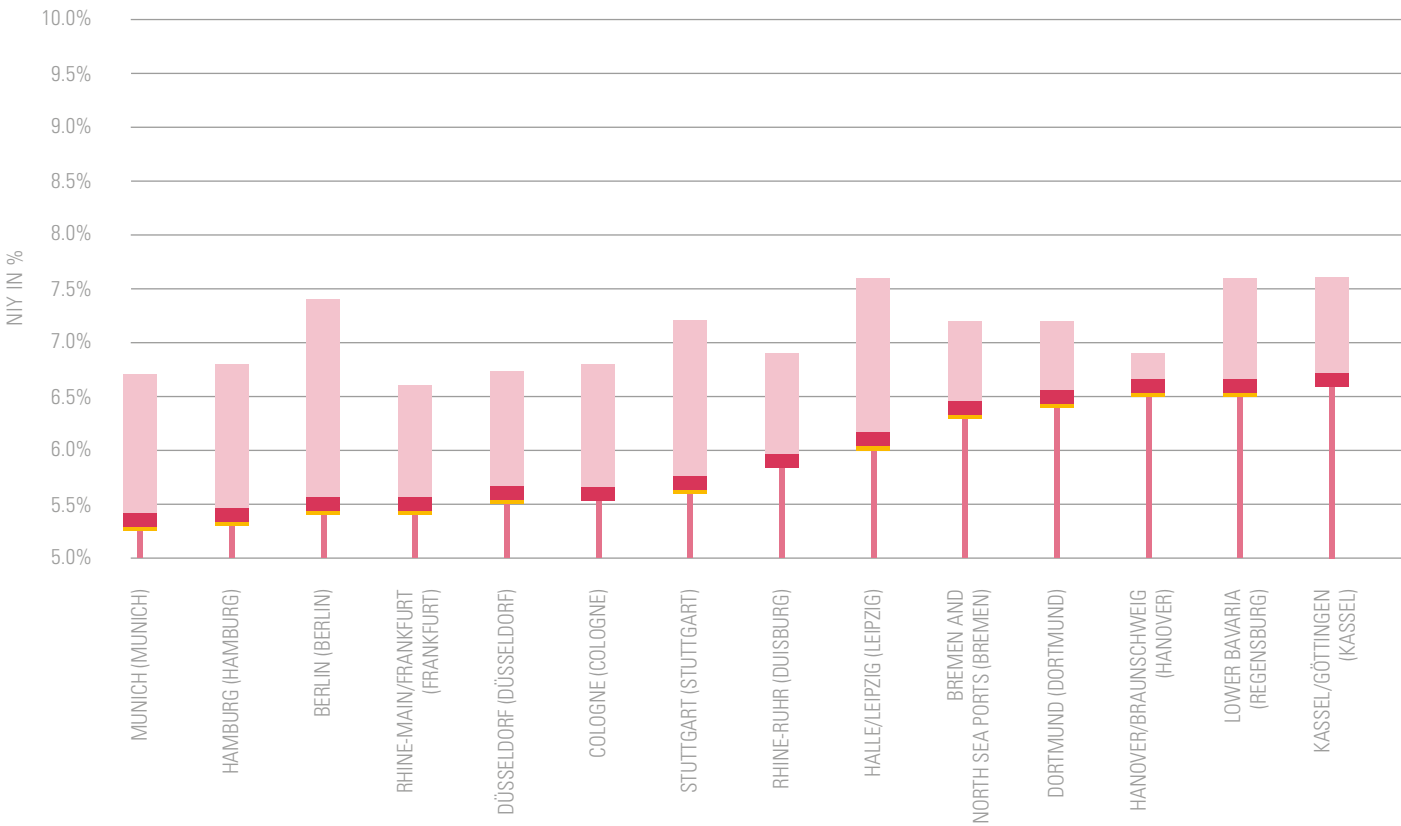


Fig. 49 STRONG COMPRESSION OF NET INITIAL YIELDS (NIY) FROM 2011 TO 2015 AND TO Q2/2016<sup>6</sup>



# PRICE GROWTH AND YIELD STRUCTURES IN THE LOGISTICS REGIONS

## HIGHEST PRICES QUOTED IN THE LOGISTICS REGIONS IN SOUTHERN GERMANY AND IN COLOGNE

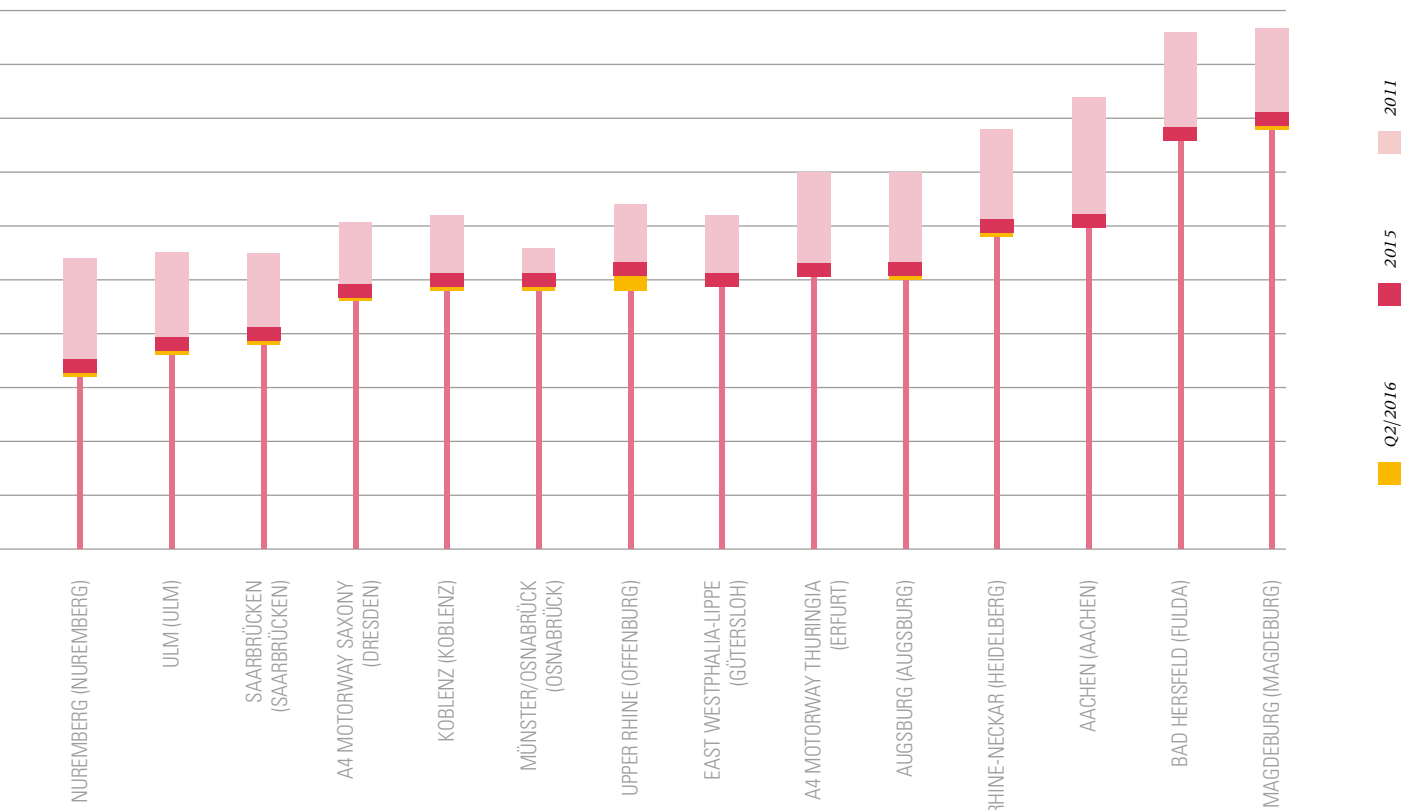
For years now, Munich's market for logistics facilities has reported the highest price level in Germany. In analogy to other property market segments in the city, a sustained high demand is matched by a very limited supply in adequate facilities, with the logistics segment registering the steepest price growth. With an average of c. 1,030 euros/sqm, Munich remains the only market in Germany that has crossed into the four-digit range. Although several regions make the next price bracket, ranging from 750 to 1,000 euros, an above average share of them is located in southern Germany. The second-highest price average of 900 euros/sqm is reported from the Rhine-Neckar region. It suggests that the market was dominated by sales of a small number of new high-end properties. The price average in the regions of Stuttgart, Saar-

brücken, Cologne and Hamburg also exceeds 800 euros/sqm. The highest prices in West Germany were quoted in the Cologne region with more than 870 euros/sqm, closely followed by the Hamburg region with c. 820 euros/sqm.

By far the most affordable region is Magdeburg with a price tag of only c. 140 euros/sqm. The low price level is explained by the absence of transactions involving as-new properties.

## NET INITIAL YIELDS RAPIDLY DETERIORATING ACROSS ALL LOGISTICS REGIONS

One of the most important measurable variables for the investment market is net initial yield<sup>7</sup>. It describes the typical price level of a logistics region. The lower the posted figure, the more attractive and pricey the location.



<sup>6</sup> In the chart, the top score of the piston represents the NIY at the start of the period under review, 2011. The middle marking represents the NIY at the end of the period under review, 2015. The bottom piston shows the continued NIY compression this year to date at the end of the first two quarters of 2016.

<sup>7</sup> For a definition of net initial yield (NIY), see the glossary at [www.logistikundimmobilien.de](http://www.logistikundimmobilien.de).

The rising attractiveness of logistics real estate precipitated an extreme compression of initial net yield rates (NIY) between 2011 and 2015. The most dynamic development was registered in the Berlin region. Here, the NIY hardened by around 190 basis points, dropping from 7.4% in 2011 to 5.5% in 2015. Although Berlin is not the most expensive market, it was the region with the fastest yield compression during the survey period. The regions with the next strongest dynamic were Halle/Leipzig, Stuttgart, Hamburg and Munich. Here, yields hardened by 135 to 150 basis points each. There are, however, considerable differences in the respective levels at the start and the end of the period. For instance, the 2015 yield level stood at 6.1% in Halle/Leipzig, but at 5.4% in Hamburg. Generally speaking, net initial yields have experienced a rather brisk dynamic in virtually all of the regions. The only regions where the yield compression remained below 50 basis points were Münster/Osnabrück and Hanover/Braunschweig.

When looking at the absolute prime yield figure of 2015 only, Munich and Hamburg share the same yield level of around 5.4%, ahead of the regions Berlin, Rhine-Main/Frankfurt, Cologne and Düsseldorf with 5.5% or 5.6%, respectively. Next in line are Stuttgart with 5.7% and Rhine-Ruhr with 5.9%.

## NO SIGNS OF FADING INVESTOR INTEREST

The pressure on net initial yields (NIY) that has persisted since 2014 continued into 2016. There is nothing to suggest that the persistently high investor interest in the German investment market for logistics real estate will flag anytime soon. Although the NIY did soften slightly in early 2016, most logistics regions registered only a breather of sorts in the yield drop – it could imply that the NIY is moving toward the cycle's trough. The prime yield rate for new-build logistics real estate in Germany currently stands at 5.4% (in Munich and Hamburg). The levels in the other major logistics regions, while slightly higher, are more or less comparable.

For the first time, though, remoter regions and markets were able to benefit from the yield compression that started in 2014. The intensifying competition on the market triggered further price growth in the course of the year. Despite the registered price hikes, logistics assets continue to offer a significant yield pick-up over other real estate types.

## INVESTOR OUTLOOK ON (FUTURE) LOGISTICS REAL ESTATE

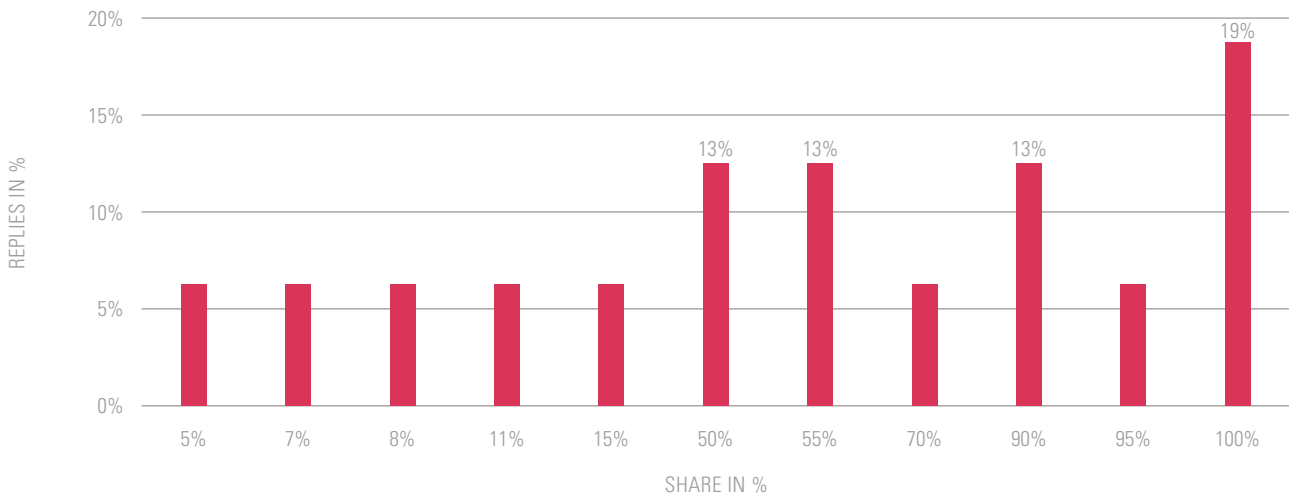
The absolute investment volume has skyrocketed in recent years, and the asset class has permanently rid itself of the niche market label as a result. But how do investors see the future of logistics real estate?

In conjunction with the survey, we used the bulwiengesa survey desk to ask 145 representatives of the Top 50 logistics real estate developers to tell us which drivers, qualities or aspects they thought will play a major role in the next five to ten years. The return rate of well over 33% provided a qualified cross-section of views.

### Can You Give Us a Rough Idea of the Share Logistics Real Estate has in Your Entire Real Estate Portfolio?

In its analysis, bulwiengesa determined which market operators dominate the Top 50 list of logistics investors. Do the operators actually focus on logistics real estate, and which priority do they have? The survey initially centred on the question of how high the share of logistics real estate is in a given real estate investment portfolio. The question returned differentiated answers. Several investors consider logistics real estate as a minor (5% to 8%) to medium (11% to 15%) portfolio supplement. For the other half, logistics real estate represents a substantial component (~50%) or the bulk of the real estate investment assets.

**Fig. 50** *HOW BIG A SHARE DOES LOGISTICS REAL ESTATE HAVE IN YOUR REAL ESTATE PORTFOLIO AS A WHOLE?*



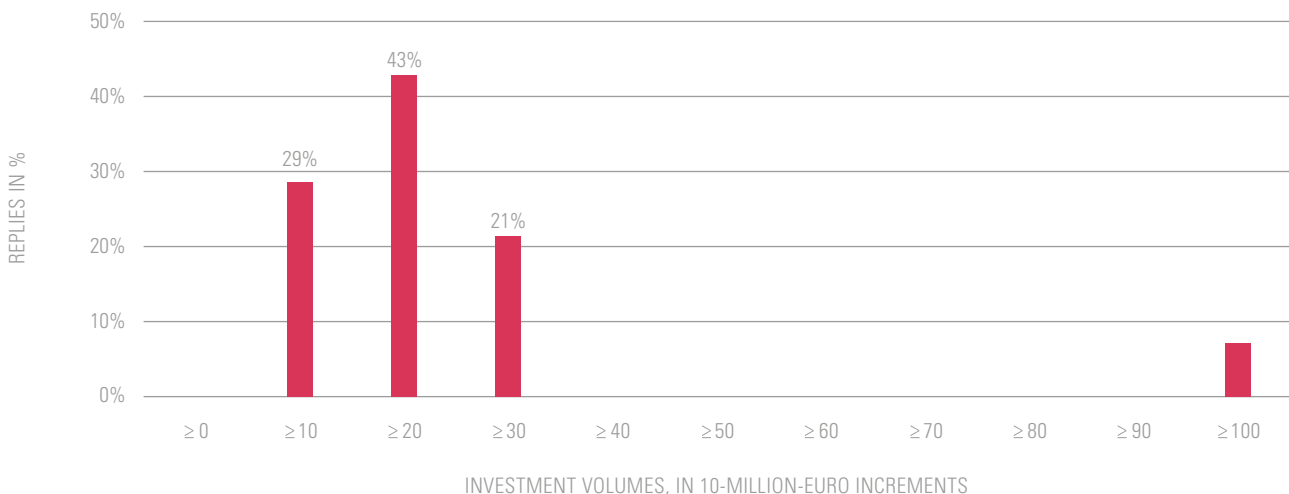
**AVERAGE INVESTMENT SIZES IN FOCUS; SMALL MORE POPULAR**

On the one hand, currently coveted investment products, e. g. in the area of e-commerce, can be very large and thus very capital-intensive. A case in point is the fulfilment centre of Hermes in Löhne with more than 105,000 sqm of usable floor area and an investment volume of 90 million euros. On the other hand, innovations such as same-hour delivery or time-window delivery successively accelerate the clock rate in the logistics business. This has also caused new real estate products to emerge, among them the mechanised delivery sites (German “MechZB”) of Deutsche Post DHL Group. Are these very small or very large batch sizes even lucrative for investors? Do upper or lower limits apply?

**PROF. DR. NICO ROTTKE, EY:**

“The batch size does not relate to the logistics warehouse and is not specific to any one asset class. It is true that institutional investors did not use to care all that much about small tickets, e. g. of c. 6 million euros, because of the high audit effort involved. Lately, however, investors seem to be changing their mind, because logistics properties are often part of a network of interacting hubs of various sizes. So it makes more sense to talk about a portfolio investment whenever several smaller assets are acquired together. But the acquisition of very large assets often involves an entirely different set of market players, such as family offices, for instance.”

**Fig. 51** *HOW LARGE IS THE AVERAGE INVESTMENT VOLUME PER LOGISTICS PROPERTY?*



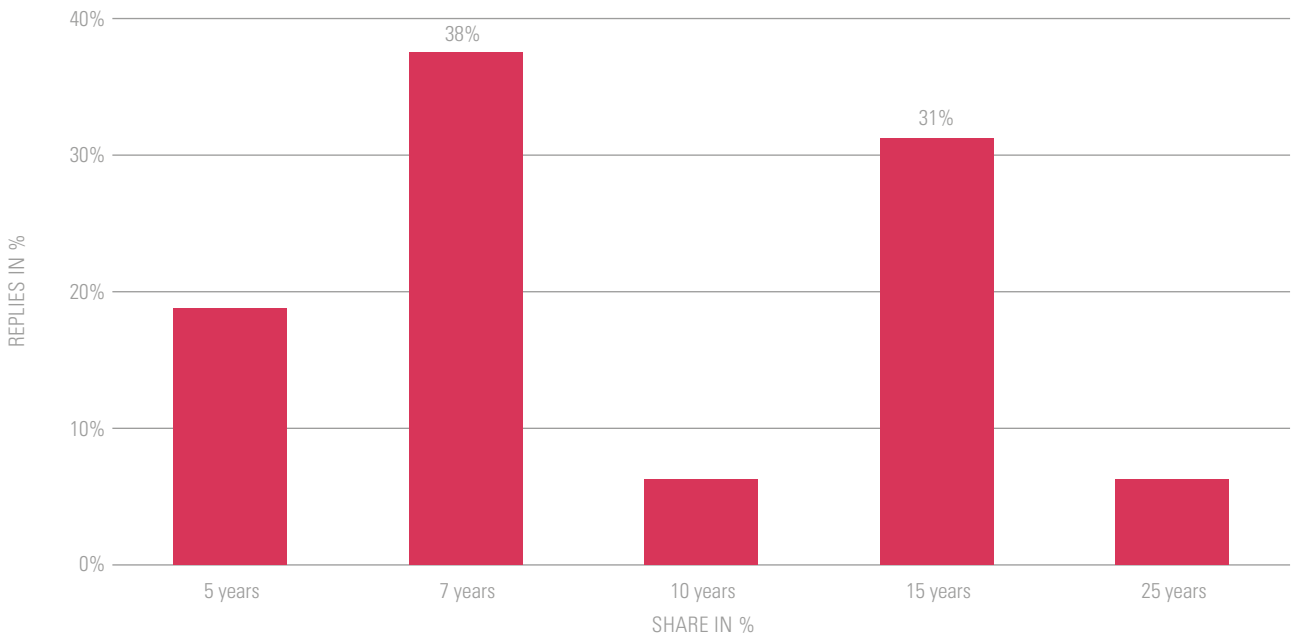
But what about the average investment volume per asset? The survey findings showed that the absolute majority of investors operates in the mid-double-digit millions range, and favours price tags of 10 to 40 million euros. Only a few embrace very-big-ticket assets beyond the 100-million-euro mark. The majority focus makes it harder for transshipment warehouses, which tend to be comparatively small and cost less than 10 million euros, to find a buyer. Yet business evidence in the current market environment shows that they sell just fine. In some cases, entire networks of small transshipment warehouses change hands.

Once logistics assets have been added to a given portfolio, they are expected to generate a steady cash flow through

the end of the investment period. But what planning horizon do investors prefer for exploiting this cash flow? Depending on the investor type, strategies vary, but can be broken down into five different holding periods. Respondents that prefer periods of 7 years and 15 years represented the largest groups. Holdings periods of ten years are rather rare. Quoting a very long period of 25 years appears to be another way of saying that the asset is being held for an indefinite period of time.

It also means that the holding period is longer than the lease terms that occupiers prefer. So it suggests that this type of logistics investor has strong faith in the investment and assumes that it will always be able to find one of several subsequent occupiers for the property.

**Fig. 52** WHAT IS THE HOLDING PERIOD YOU AIM FOR AS INVESTOR WHEN BUYING LOGISTICS REAL ESTATE?



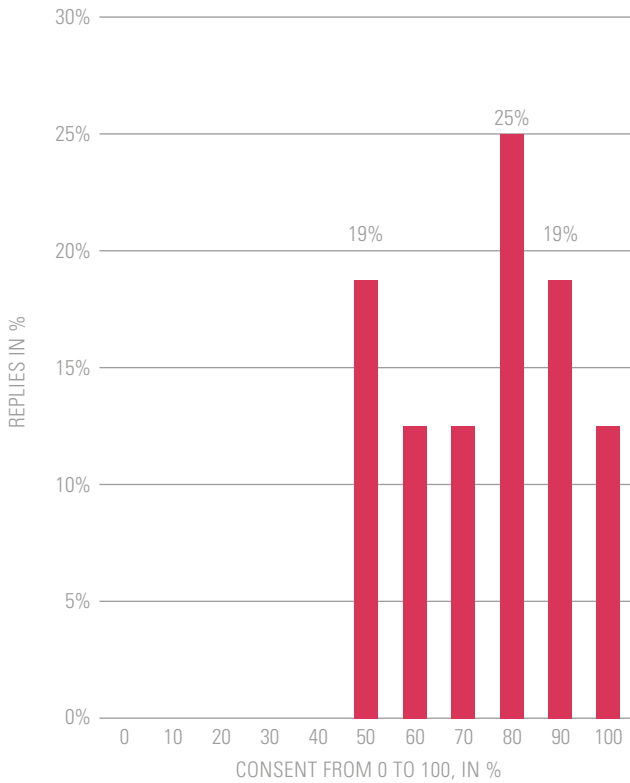
## WHAT ARE YOUR REASONS FOR INVESTING IN LOGISTICS REAL ESTATE?

What do the polled investors find particularly attractive about logistics real estate? To what extent do the investors appreciate the individual aspects cited?

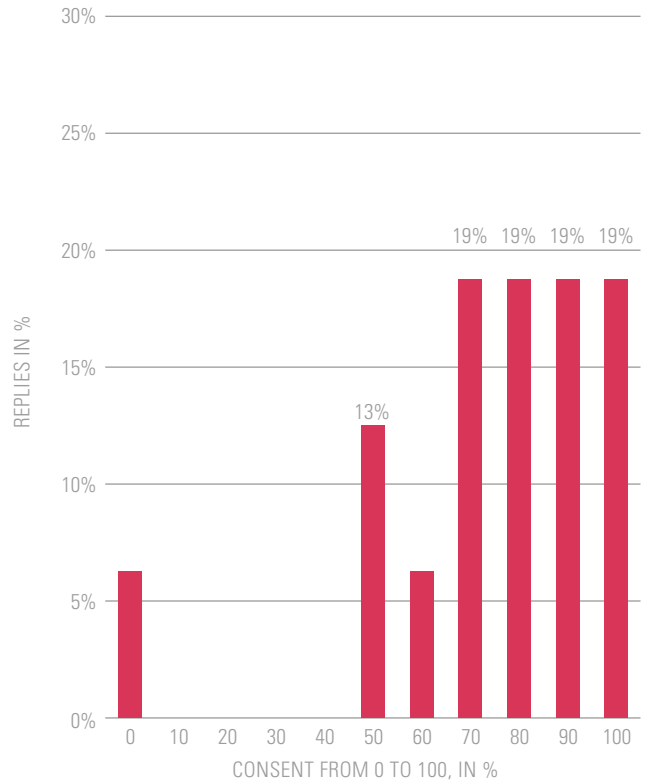
The vast majority of expert respondents is firmly convinced that logistics real estate have an attractive yield level. Barely one out of five respondents gave this question a mediocre score.

The panel delivered a similarly high level of consent in answer to the question whether a logistics real estate investment is intended to hedge the weaknesses of other asset classes or to increase the risk diversification. The share of those who fully agreed was even higher here.

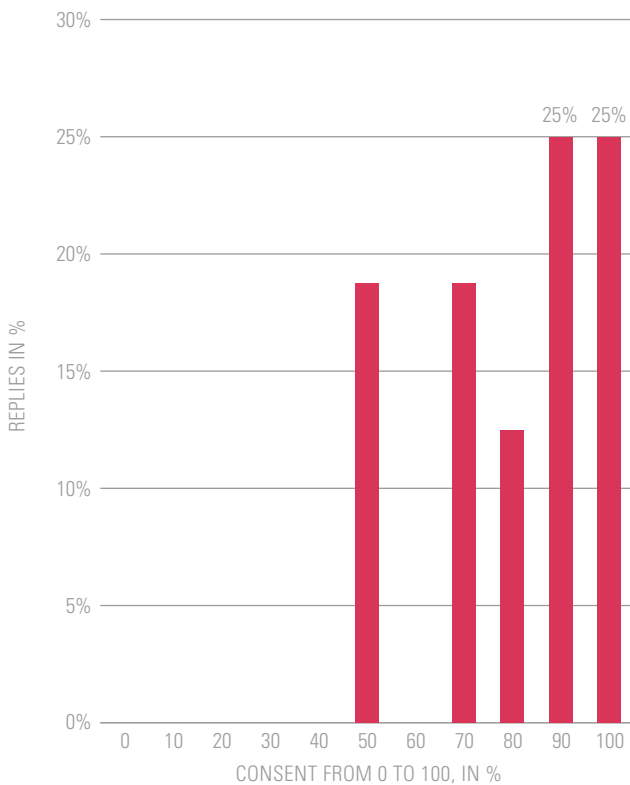
**Fig. 53** LOGISTICS REAL ESTATE OFFERS AN ATTRACTIVE YIELD LEVEL



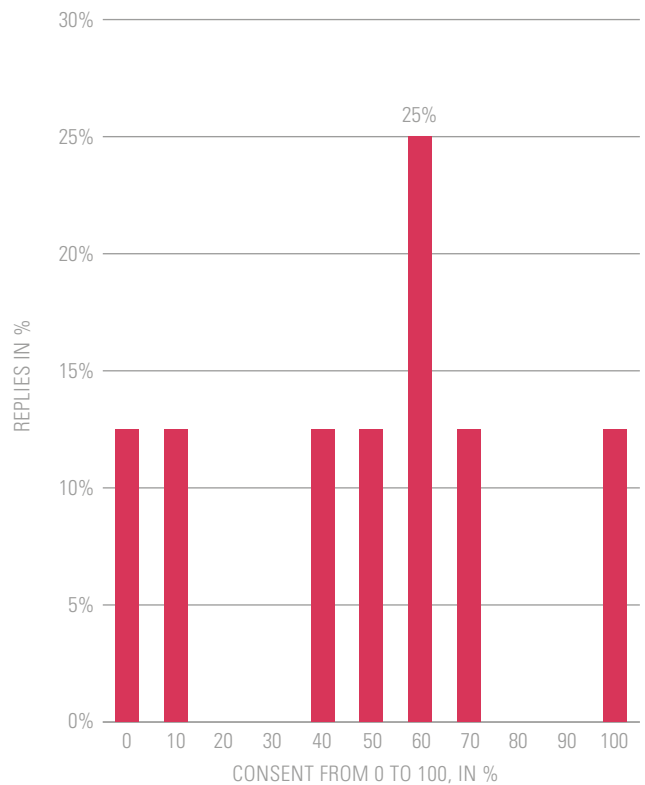
**Fig. 54** LOGISTICS REAL ESTATE IS SUITABLE FOR SAFEGUARDING PORTFOLIOS AGAINST THE WEAKNESSES OF OTHER REAL ESTATE SECTORS/DIVERSIFICATION MOTIVES



**Fig. 55** PARTICIPATION IN GROWING INDUSTRIAL SECTORS (E. G. E-COMMERCE)



**Fig. 56** GROWTH PERSPECTIVES IN TOTAL RETURNS (RENTAL AND CAPITAL GROWTH) OF LOGISTICS REAL ESTATE



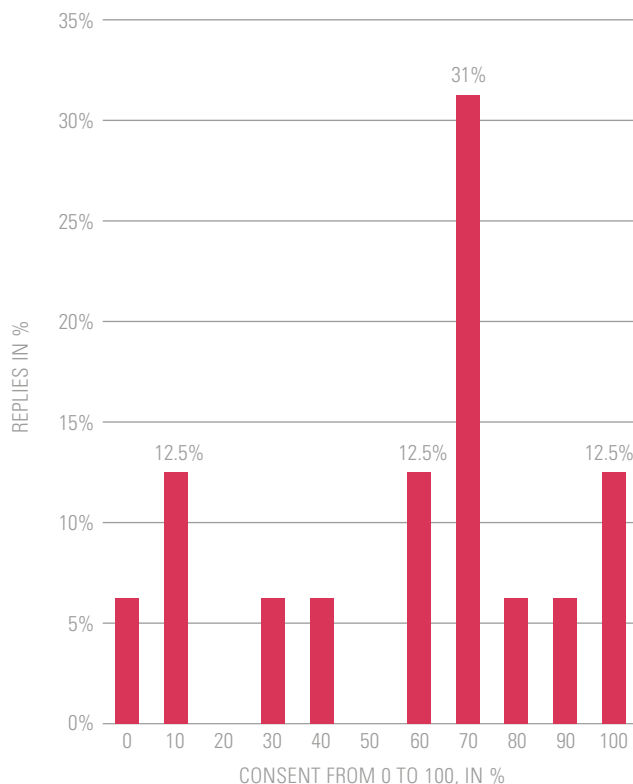


Logistics real estate presents an opportunity to participate in the growth of industrial sectors like e-commerce. For half of the panel members, this is a definitive reason to invest in logistics real estate.

Although logistics real estate promises a high cashflow return, growth prospects as part of the total return are not the primary reason for investors to acquire in logistics assets. The polled experts returned a highly differentiated picture.

A key factor for logistics real estate investors is tenant retention rate. The higher the latter, the more stable the cash flow. Almost one in three respondents agreed. That being said, investors pointed out that even a change of tenant in a logistics property will generate lower opportunity cost than re-letting office and retail units. This makes logistics real estate a market segment that has been underestimated. A small minority of respondents mentioned threats and were disinclined to agree because large single-tenant properties, for instance, can present a re-letting risk.

**Fig. 57** LOGISTICS REAL ESTATE PROMISES A HIGH DEGREE OF TENANT LOYALTY AND WITH IT A SECURE CASH FLOW



## WHICH LOCATION ASPECTS ARE RELEVANT FOR INVESTORS?

Logistics schemes are often located out of town, or very remote even. Having a strategically sensible quality of location is therefore extremely important to ensure a high tenant retention rate and with it a secure cash flow. Which aspects matter to investors in this context?

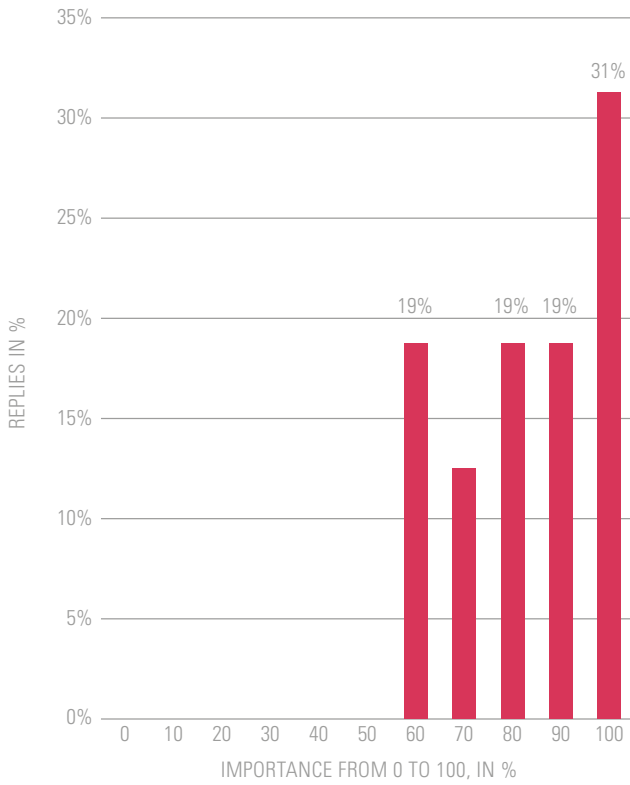
The situation in an established logistics region is important or very important to all investors – indeed, one in three considers it the knock-out factor. Investors are even more critical when it comes to transportation access. No less than 50% gave it a significance rating of 100, another 25% gave it a 90.

The proximity to manufacturing sites is of medium importance to most investors. But there were also some respondents who agreed with either end of the scale. A greater number agreed on the importance of being close to the sales markets. However, investor consent is spread across the entire bandwidth of replies.

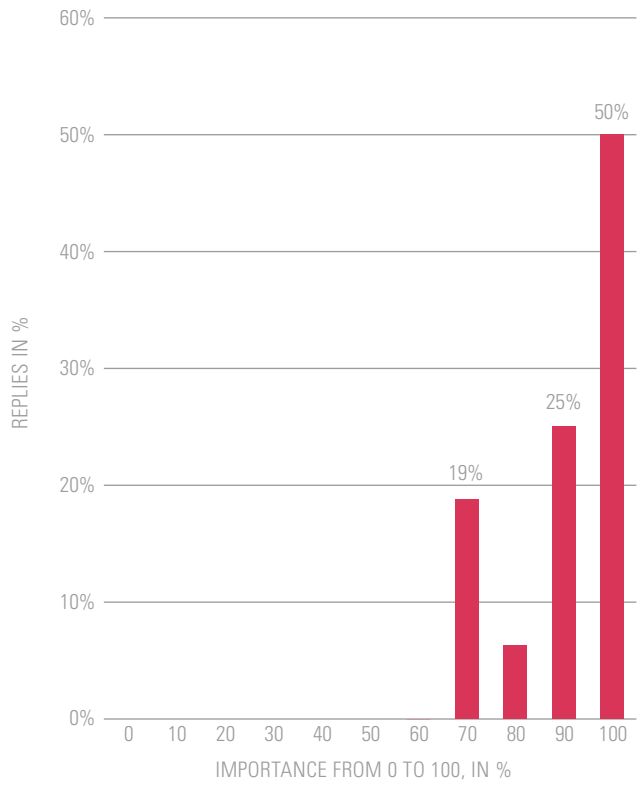
### ALEXANDER MÖLL, HINES IMMOBILIEN:

*“Over the past years, the logistics market has positioned itself as the second-strongest sector in Germany after the automotive industry, and as by far the strongest sector in Europe. As an indispensable part of the global division of labour (outsourcing), the logistics industry makes a substantial contribution to the gross domestic product along the entire value chain. With a view to the growth drivers e-commerce and Industry 4.0, meaning the dovetailing of industrial production with state-of-the-art information and communication technology, it is safe to expect a further, exponential growth in demand for logistics services.”*

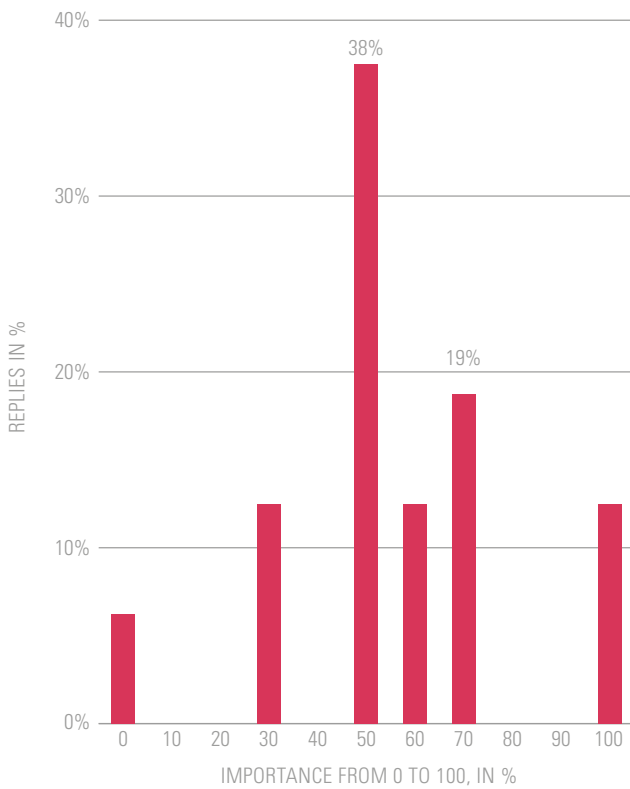
**Fig. 58** LOCATION INSIDE A LOGISTICS REGION



**Fig. 59** GOOD TRANSPORT CONNECTIONS



**Fig. 60** PROXIMITY TO MANUFACTURING SITES



**Fig. 61** PROXIMITY TO SALES MARKETS

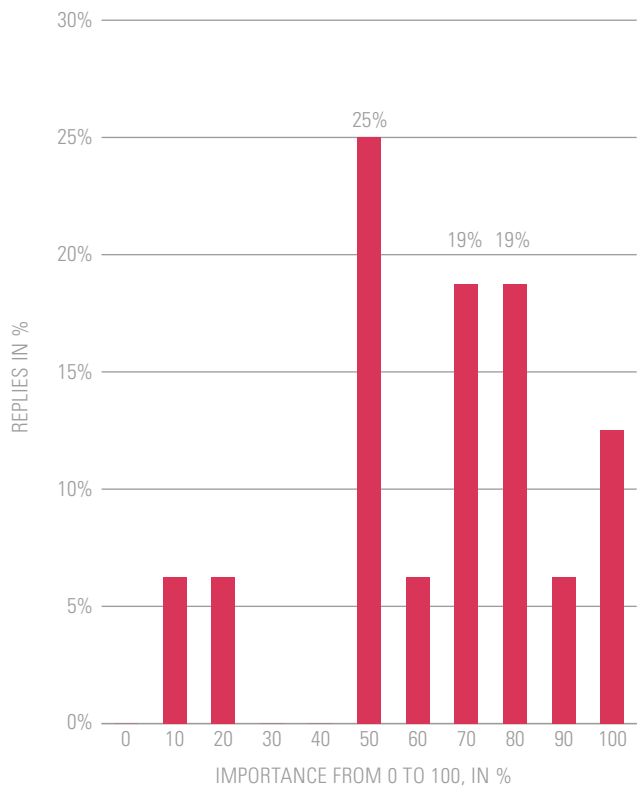
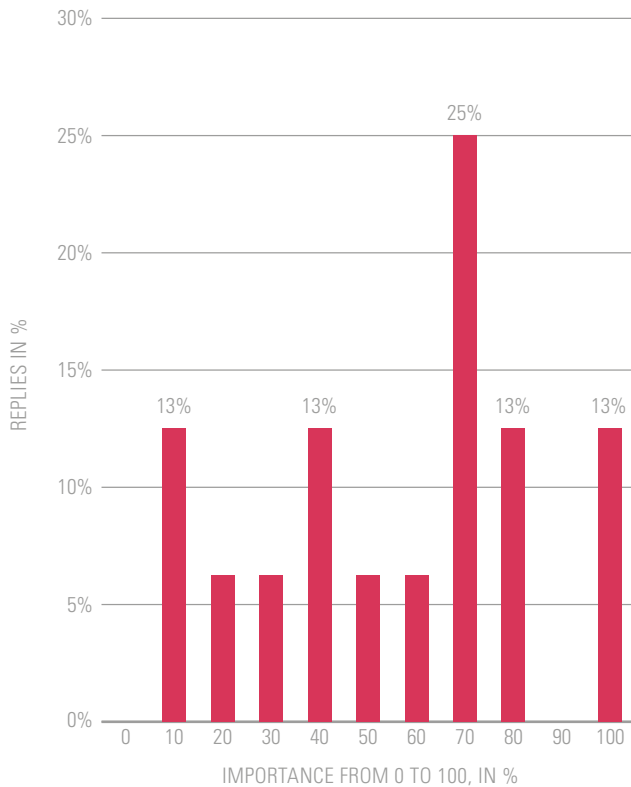


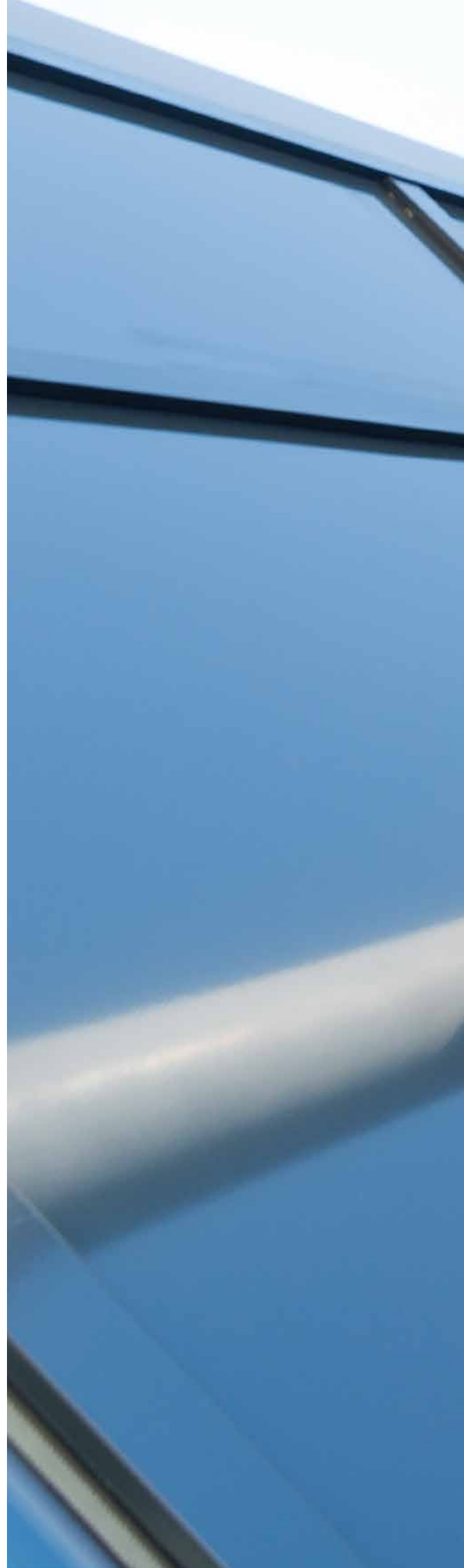
Fig. 62 LOCAL AVAILABILITY OF LABOUR




Opinions differ as to what extent human resources ought to be on hand at the logistics site. But it is a subject of some importance to a majority of respondents. The availability of labour is therefore a component of the check list for logistics real estate investments, albeit one of many.

**ALEXANDER MÖLL, HINES IMMOBILIEN:**

*“To make your investment a sustainable success you need to take a wide variety of requirements into account when developing or purchasing an asset: in regard to the location (multi-modal access, labour potential, logistics parks, etc.), to the technical specification of the logistics real estate, and to sustainability. The most important point is the correct assessment of the alternative use potential in order to ensure a long-term lettable, while regular and adequate maintenance is just as important.”*





*“The most important point is the correct assessment of the alternative use potential in order to ensure a long-term lettability, while regular and adequate maintenance is just as important.”*

ALEXANDER MÖLL

# LOGISTICS REAL ESTATE FROM A LENDER'S POINT OF VIEW – STATUS QUO AND OUTLOOK

Not only the banking universe, but alternative lenders like debt funds or family offices as well, have come to check out alternative real estate asset classes in Germany, among them specifically logistics real estate.

**PROF. DR. NICO ROTTKE, EY:**

*“Former ‘evergreens’ like office and retail properties have simply become too expensive for many investors because of the low-interest cycle. So they have started looking around for alternatives, and logistics real estate has definitely become one of the options. Lenders have responded to the increased investor demand, and show increasing willingness to embrace this asset class.”*

High construction and investment volumes have created enormous borrowing needs among owner-occupiers planning to build, property developers and investors. Since market volumes and borrowing needs are impossible to gauge except through approximate estimates, we asked lenders and proven real estate financing experts for their assessment.

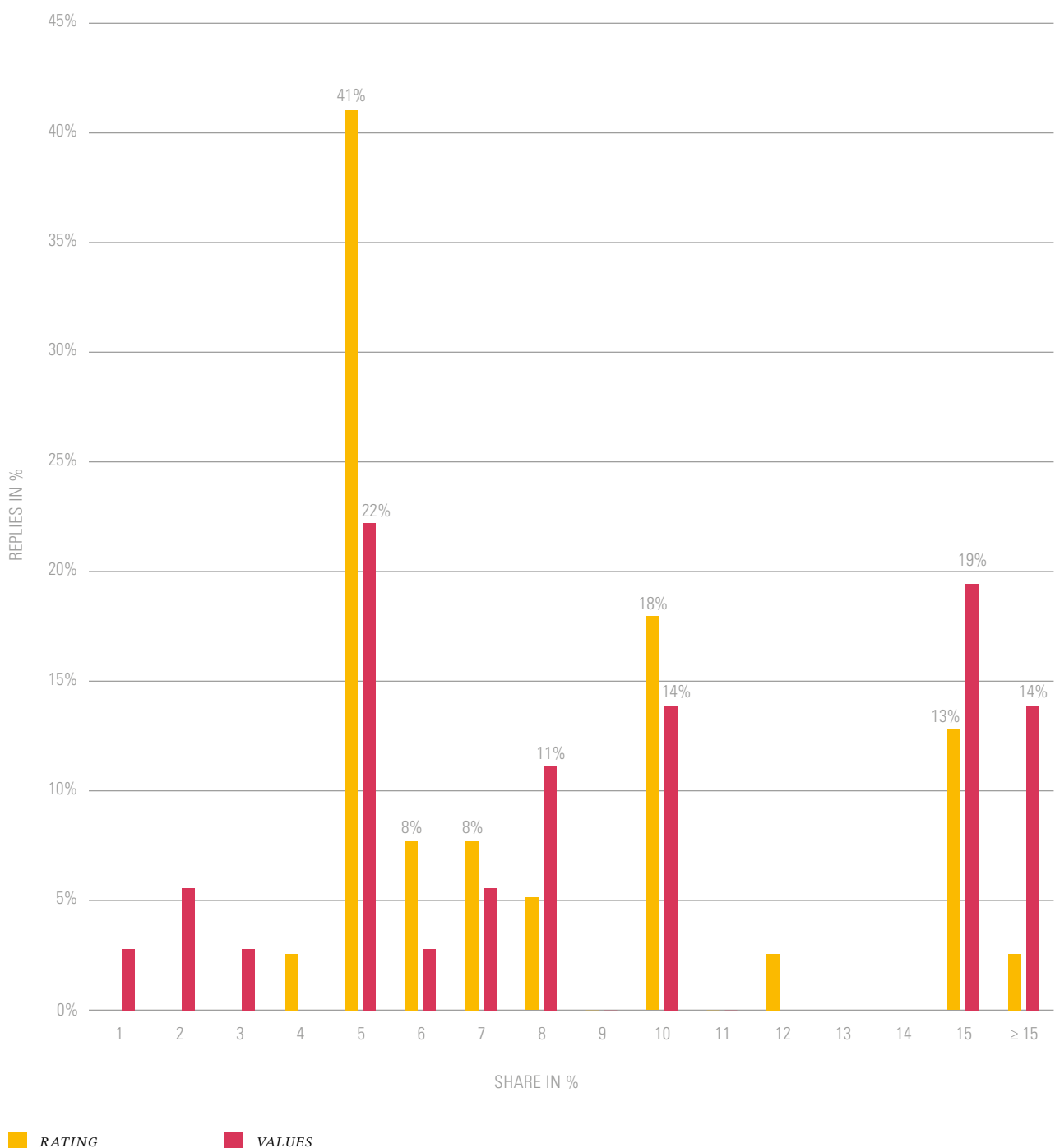
More than 200 lending experts were polled via the bulwiengesa survey desk in regard to the future requirements in logistics real estate financing. The return rate of well over 27% provided a clear picture.

# THE MARKET TREND IN LOGISTICS REAL ESTATE FINANCING

Building activity and investments in the logistics real estate sector have been brisk for a number of years. This has brought with it a corresponding demand for financing arrangements. Yet the loan books of the polled banks show that this asset class is underrepresented, comparatively

speaking. For the majority of respondents, they account for a share of around 5%. One in five poll participants quoted a share of 10%. Only a few stated that logistics real estate has a significance of around 15% or higher even. But higher rates were very rarely quoted.

**Fig. 63** ROUGHLY SPEAKING, HOW HIGH IS THE LOGISTICS SHARE IN YOUR LOAN PORTFOLIO OR NEW LENDINGS?



Why did logistics real estate not use to play a role in German debt portfolios until recently, unlike in Anglo-American countries, for instance? After all, logistics is the lifeline of the Germany's industrial economy and the German logistics sector the global market leader, according to the World Bank.

**PROF. DR. NICO ROTTKE, EY:**

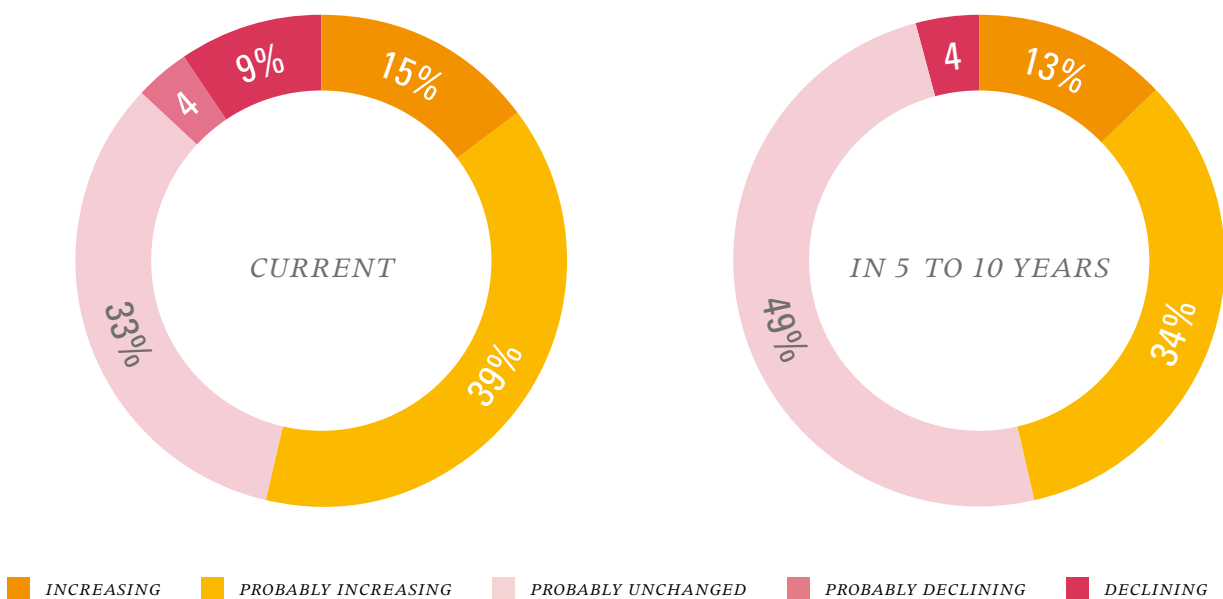
*"From a lender's point of view, this is not least explained by the risk profile. For one thing, a logistics warehouse is often appraised with a shorter life cycle than an office or retail property. Another factor is the possibility that large competing units are suddenly and unpredictably created, and could cause me to lose my tenant and thus my cash flow, so that the investment is more exposed than other asset classes. There used to be no compelling reason to shoulder this sort of risk because new lendings in other asset classes offered plenty of opportunity to achieve attractive spreads. These days, narrowing spreads and the previously mentioned structural change have forced us to reassess the situation. Logistics presents an opportunity to achieve attractive spreads, not least because the risk profiles of the other asset classes also call for reappraisals. Office schemes in prime locations require costly core-and-shell redevelopments much sooner than they used to, or else are converted outright into residential property. By contrast, subjecting logistics warehouses to a refit is a comparatively affordable affair."*

This opinion is shared by the panel of respondents. Accordingly, logistics financing arrangements have a much higher share in new lendings than in the existing loan book. Their share in the latter is still as high as 5%. But this compares to loan book shares of 8% to 10% or even 15% that a much greater number of respondents quoted. Even a share of more than 15% is not at all uncommon.

**LOGISTICS REAL ESTATE FINANCING BECOMES AN INTEGRAL COMPONENT OF THE BUSINESS STRATEGY**

When asked how new lendings in logistics real estate financing is likely to develop short-term, 54% of the lenders predicted a rising or probably rising share in their funding volume. One in three experts assumes that the share in logistics financings in new lendings will continue to grow at the current rate. 13% assume that their share will decline.

**Fig. 64 HOW DO YOU EXPECT THE LOGISTICS FINANCINGS SHARE IN YOUR NEW LENDINGS TO DEVELOP?**





Almost half of the respondents (47%) assume moreover that the borrowing requirements for logistics real estate will rise or probably rise in the coming five to ten years. The other half (49%) assumes that the borrowing need will remain as is. Virtually no one believes that new lendings in the area of logistics financing will decline in volume over the next five to ten years.

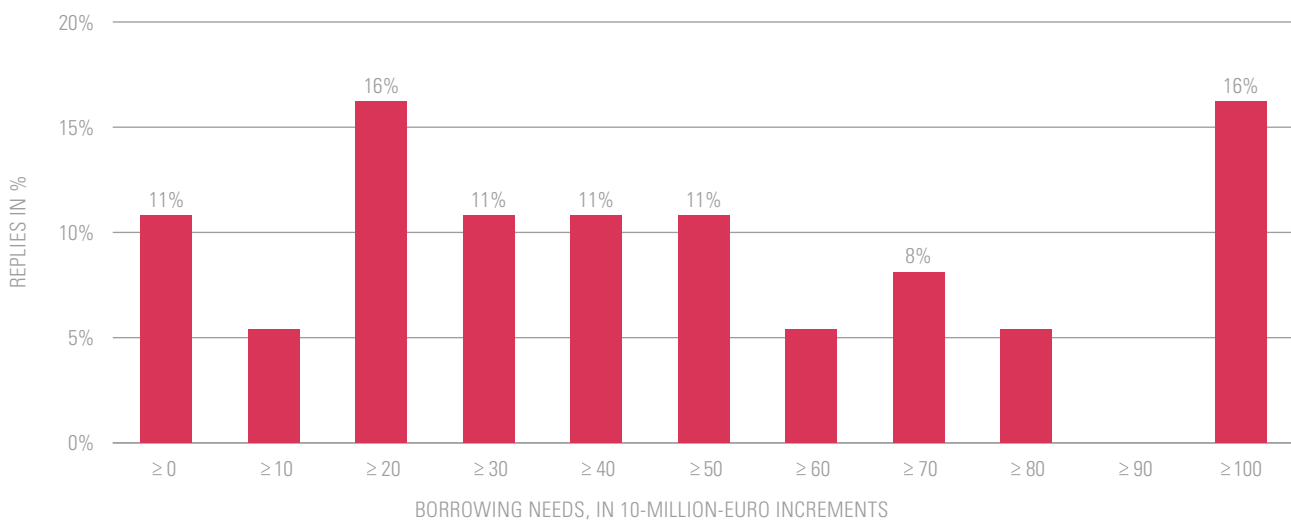
Asked about the drivers of the high medium-term demand for logistics financings, lenders quote a whole array of factors: They argued, for instance, that the increase in the movement of goods on the global and European level as well as the growth in online retailing generates a greater demand for logistics real estate. Lenders have also registered an increase in funding requests for logistics real estate by owner-occupiers and as a result of rising transaction figures. The trend is matched by the lenders' improving risk assessment of the

asset class. Increasingly, logistics real estate financing plays a part in strategic financing portfolios and as an integral component of business strategies.

### **RISK: LEASE TERMS ARE GETTING EVER SHORTER**

The again, creditors have not lost sight of aspects that necessitate a more risk-sensitive lending in the logistics real estate sector. Some institutes are particularly worried that leases with logistics tenants are signed for ever shorter terms, and therefore fall short of the lenders' requirements. At the same time, the competition among banks is intensifying, and spreads are already narrowing in some places. Not every lender is willing to compete in this environment.

**Fig. 65 UP TO WHAT FUNDING VOLUME FOR A SINGLE PROPERTY ARE YOU PREPARED TO BANKROLL LOGISTICS REAL ESTATE ON YOUR OWN, I. E. WITHOUT SYNDICATE PARTNER?**



The funding volumes for single properties that lenders underwrite without syndicate partners reflect both the borrowing needs and the size bands of the lending market. The funding volumes are spread more or less homogeneously across the 10-million-euro brackets, only dropping slightly at the upper end. Even financing arrangements over more than 100 million euros are still being bankrolled by 16% of the respondents.

If you match these funding volumes on the lender side with the investment volumes (capital requirements) for single investments on the investor side, it is reasonable to conclude that the loan supply is ample. Given the fact that the funding volumes go well beyond the required amounts for single investments,

the supply of capital for portfolio funding appears to be robust as well. In a word, borrowers appear to have access to a broad spectrum of logistics real estate financing options.

#### **PROF. DR. NICO ROTTKE, EY:**

*"It is easier today to obtain logistics real estate funding than it used to be even if, then as now, this applies primarily to major banks or specialised banks. Because of the volumes involved or the lack of in-house expertise, smaller banks such as savings banks or cooperative banks are rarely in a position to offer financing solutions. If anything, they will do so under the joint lead management of a major nationally operating bank."*

## 88 LENDING COVENANTS

As long as logistics investments still represented niche commitments, borrowers normally had to commit a higher equity stake than they did with other real estate asset classes. What is the situation now?

Lenders pretty much agree that, assuming comparable loan-to-value (LTV) ratios, the margins and repayment rates in logistics real estate financing remain higher on average than those for office and retail property. This is particularly true for repayment rates.

Overall, it is safe to conclude that the margins serve as risk measure, and that the risk of logistics financings continues to be rated higher than that of office and retail property financings. The fact is explained by the intrinsically lower alternative use potential of logistics properties and the comparatively short lease terms. Is the risk profile likely to change in the medium term?

**PROF. DR. NICO ROTTKE, EY:**

*"It is hard to say. Based on shifting push/pull factors, you could argue that the currently used risk profile, while still reflecting an accurate valuation, is subject to change and to*

*eventual review in the medium term. Once that happens, at the latest, logistics real estate will have joined the club of regular asset classes. But like always, decisions need to be made on a case-by-case basis.*

*At the same time, it should be stressed that it is not all about risk, but that you need to keep an eye on yield. After all, what makes logistics property so attractive today is specifically its higher spread. Going forward, the sustained structural change will cause the logistics property, understood along the lines of the e-fulfilment property variant discussed above, to develop into a sustainably attractive real estate class at eye level with office and retail real estate."*

### **SUSTAINABILITY OF THE CASH FLOW IS THE KEY CRITERION FOR THE WILLINGNESS TO FINANCE**

In addition to the hard classic financing factors such as the lease term, are there any other ways to make a request for funding more appetizing? Conceivable options to influence the willingness to finance could include, for example, additional investments into energy-saving lighting systems, the selection of sustainable building materials or the use of renewable energies.

**Fig. 66 HOW DO YOU RATE THE MARGINS AND REPAYMENT RATES IN LOGISTICS REAL ESTATE FINANCING COMPARED TO OFFICE AND RETAIL REAL ESTATE?**

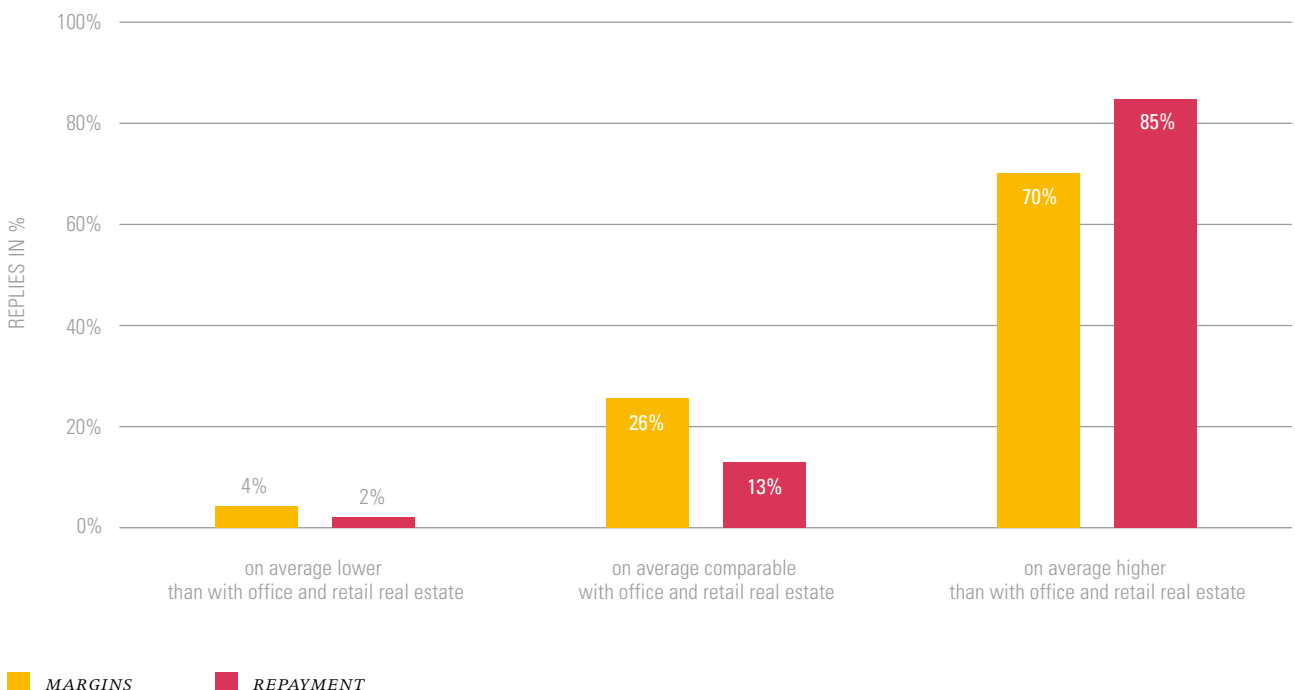
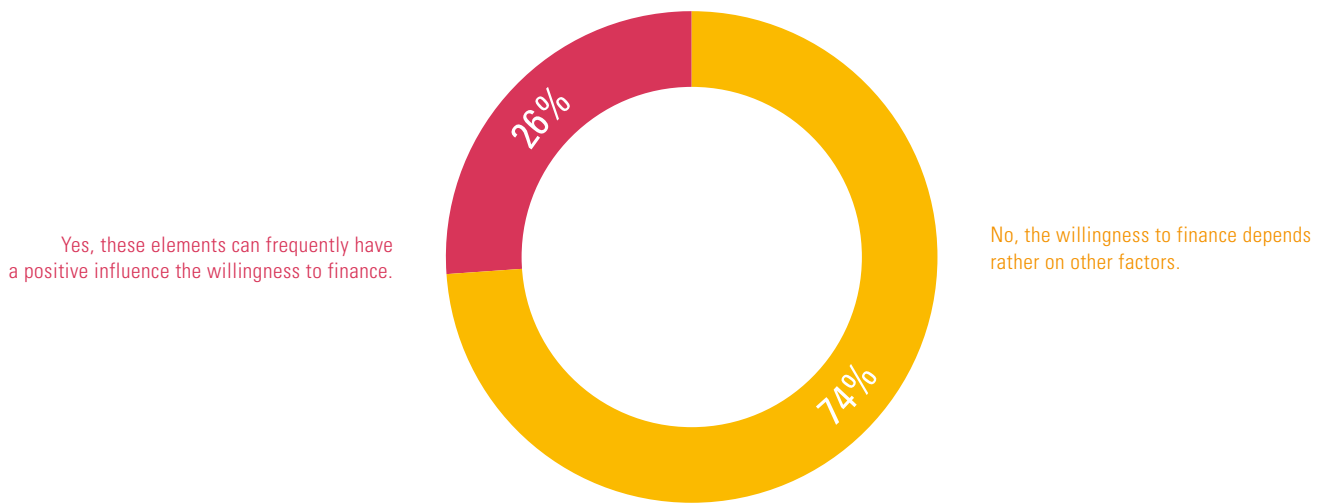


Fig. 67 *DO ADDITIONAL INVESTMENTS ENHANCE THE WILLINGNESS TO FINANCE?*



The poll returned a clearly negative answer to this question. A vast majority of nearly three out of four lenders believe that other factors are more effective in enhancing the willingness to finance. Most of these factors can be subsumed under the topic of alternative use potential and thus of sustainability of cash flow/investment:

- A strategically sound site or location within an established logistics region
- Great connectivity and access roads
- High degree of functionality and recently built structure
- Sustainable construction and fit-out, e. g. ceiling height, load-bearing capacity, number of docks, etc.
- Flexible lettability due to high alternative use potential, e.g. versatile use options, divisibility of the property, optimal share of office/staff areas, licensed for 24/7 operation, etc.
- Investment-grade lease in place, meaning blue-chip borrower, renowned tenant or occupier of the property, lease terms as long as possible
- Substantial equity stake of the investor

The lenders' assessment is by all means plausible, because tighter regulatory requirements need to be met, be they bank-specific such as Basel III or building-specific such as the German Energy Saving Ordinance (EnEV) or the Renewable Energy Sources Act (EEG). These will affect the assessment of the eligibility for financing in answer to the borrowing request.

**PROF. DR. NICO ROTTKE, EY:**

*"Lenders try to hedge their funding risk. Accordingly, the alternative use potential remains one of the main influencing factors. As long as investors can demonstrate their ability to make payments on the principal and interest out of the rental income, a bank will generally be inclined to finance. On top of that, it will naturally keep an eye on the standard audit criteria such as quality of location, tenant quality, etc. But there is also a tendency to consider other factors as well. In response to the increasing environmental requirements written into law, but also because of the CRS strategies of large conglomerates, sustainable construction methods play an increasingly important role. Banks take a more critical view whenever existing schemes are involved, because the construction costs are generally less likely to be recovered. But as it is, lenders will consider a green approach a positive aspect when calculating their margin. Tenants, while principally open to such approaches, remain wary of the associated extra costs, which tend to be apportioned to the rent. The two universes are therefore still moving at different speeds."*

## 90 WHICH LOCATION ASPECTS ARE RELEVANT FOR LENDERS?

A great location is considered one of the key prerequisites for willingness to finance. The better a location, the higher the sustainability of the site is rated, and with it the sustainable performance of the loan. In this regard, lenders and investors see eye to eye.

We therefore asked lenders, too, to give us a detailed assessment of the significance of location qualities.

### LENDERS GIVE THE QUALITY OF LOCATION AN EVEN HIGHER PRIORITY THAN INVESTORS DO

Three out of four lenders (about 73%) consider the location of a given property within an established logistics region extremely important. They put an even higher premium on transportation access. In fact, for more than 80% of the lenders gave good transport links a significance rating of 80 to 100.

Either aspect matters even more to lenders than it does to investors. The only reason why they would settle for anything other than premium locations is the soaring price level of core assets.

#### ALEXANDER MÖLL, HINES IMMOBILIEN:

“Our first steps in the logistics sector involved classic core investments – prime location, new Class A warehouses, long-term leases, etc. Aside from the quality of the assets, we always undertook these acquisitions in the hope that the yield spread between German and international reference markets would close. Since this adjustment has now largely taken place, we have become slightly more reticent in our investments in core products, especially due to the outlined yield compression. Our current focus is more on core+/value-add products with development potential and located in established locations, or new developments.

Fig. 68 LOCATION INSIDE A LOGISTICS REGION

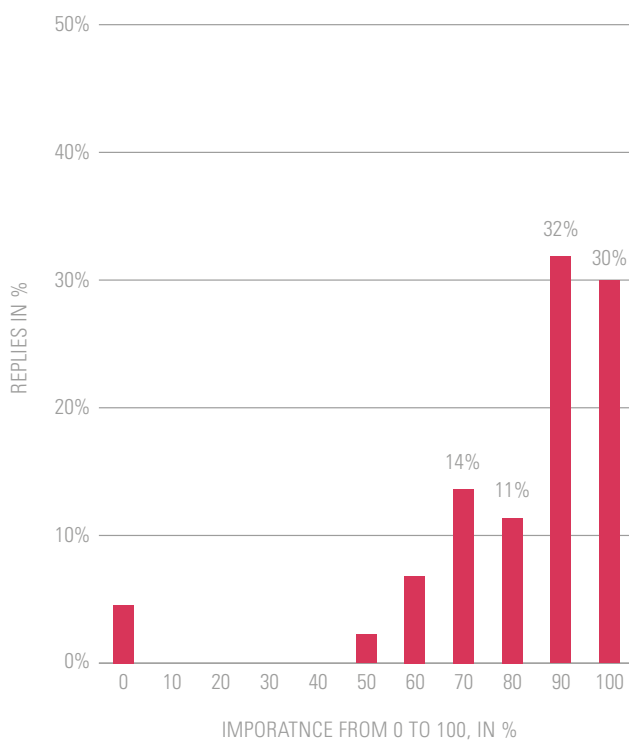
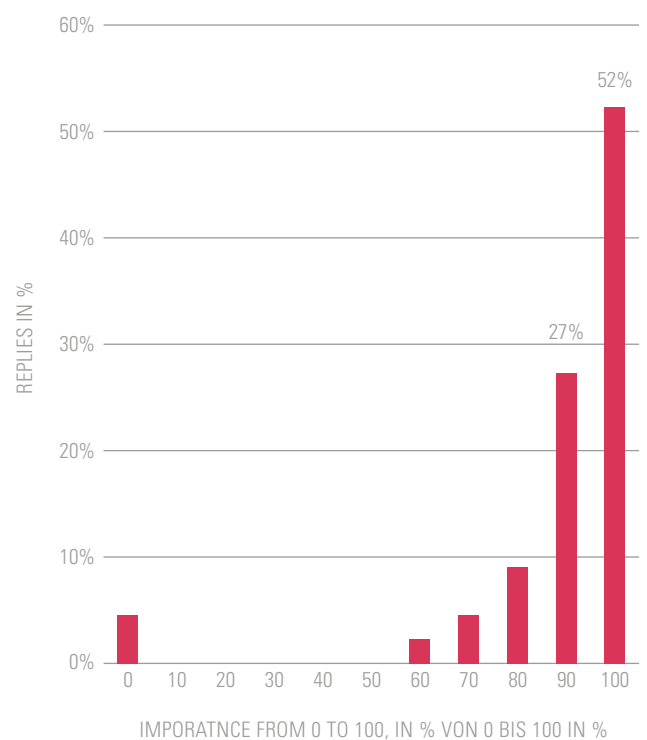


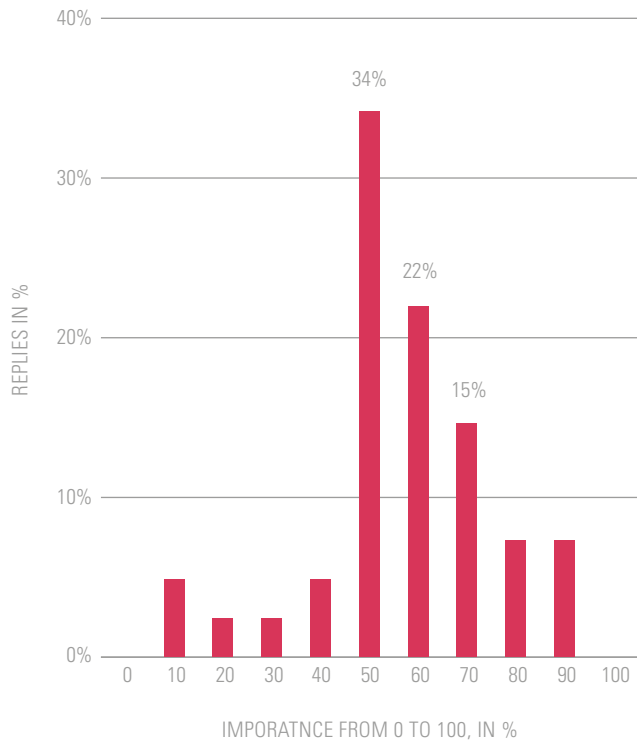
Fig. 69 GOOD TRANSPORT CONNECTIONS



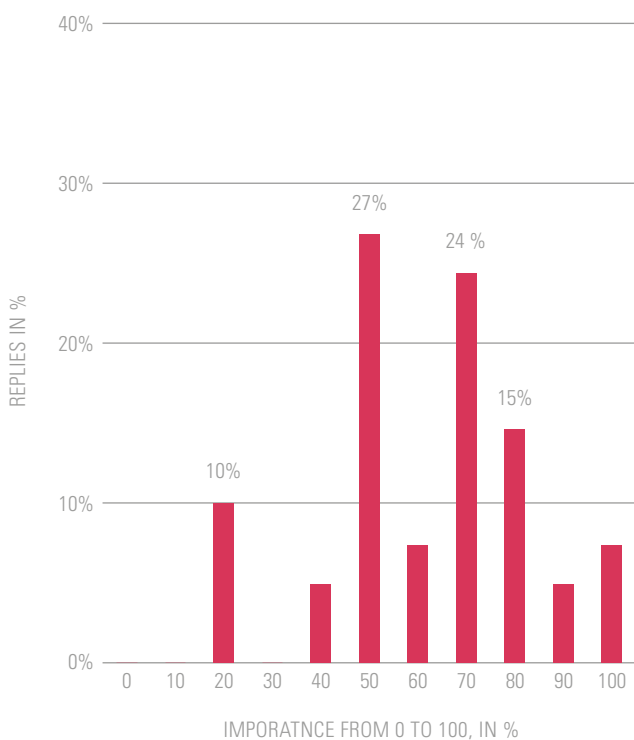
By contrast, the proximity to manufacturing sites or to sales markets is of medium significance only. To be exact, being close to consumers is deemed slightly more important than being near the relevant manufacturing sites. This matches the assessment that investors provided.

The availability of labour was said to be of medium significance. This puts the factor more or less on the same level as the proximity to sales markets.

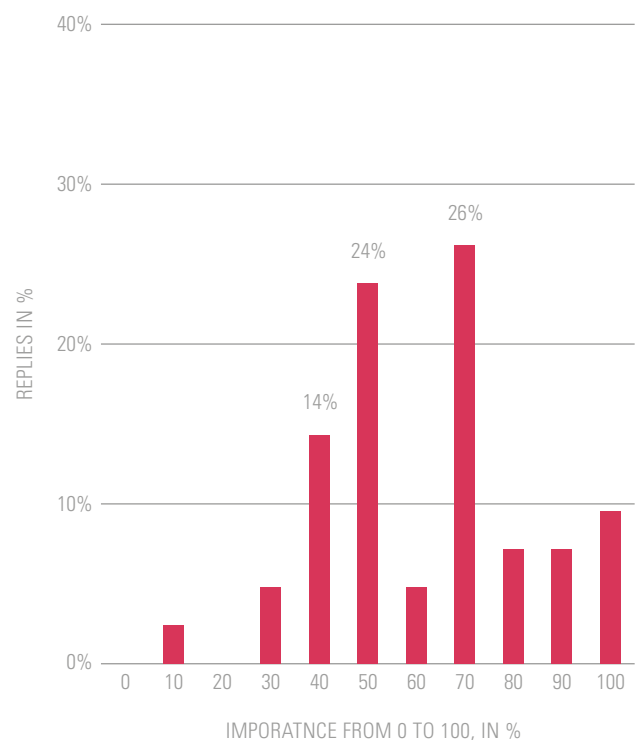
**Fig. 70** PROXIMITY TO MANUFACTURING SITES



**Fig. 71** PROXIMITY TO SALES MARKETS



**Fig. 72** LOCAL AVAILABILITY OF LABOUR



# *THE MARKET ATTRACTIVENESS OF THE LOGISTICS REGIONS: REGIONAL DEVELOPMENT PATTERNS OF CHANGE*

The foregoing chapters presented a wealth of market data on Germany's logistics regions. The data included ratios relating to take-up as well as building and investment activities in the logistics real state sector. In combination with stats on rents and yields from bulwiengesa's RIWIS database and with key market indicators on the labour and sales markets of the regional economies, a valuation model was calculated – as in the previous survey – that maps the sustainable market attractiveness of the logistics regions. Since the same calculation method was applied, and since historic time series for the input data are available, it has now become possible to derive patterns.

*THE SHIFTING MARKET ATTRACTIVENESS OF THE  
LOGISTICS REGIONS OPENS UP FRESH OPPORTUNITIES*

## RATING THE ATTRACTIVENESS OF LOGISTICS REGIONS FOR THE REAL ESTATE ECONOMY

We used a scoring process to assess the market attractiveness of all 28 logistics regions. The method involves the calculation of an upper score for each key market indicator – such as take-up, building activity or investment activities – the upper score integrating the analysis parameters listed below. The individual upper scores for each logistics region enter into an overall scoring. The model attributes more or less the same weighting to each. Only the score values of demand (in-

vestment and occupier demand) are weighted slightly higher because the model is to express the stable long-term viability in real estate economic terms.

The scoring system represents a purely real estate economic assessment (e. g. rents/yields) while ignoring the logistics angle (e. g. infrastructure connectivity). Based on the assessment, Germany's logistics regions returned the following scorings:

**Fig. 73** *TOP SCORES AND WEIGHTINGS WITHIN THE FRAMEWORK OF THE SCORING OF LOGISTICS REGIONS*

THE SCORING SYSTEM FOR LOGISTICS ATTRACTIVENESS		
TOP SCORE	ANALYTIC ASPECT OF THE PARAMETERS IN THE LOGISTICS REGION	WEIGHT
Supply score	Supply in existing building stock and submarket variable in the overall architecture Scale and dynamic of the building activity Significance of the building activity for the total stock	10%
Demand score	Scale of the stabilised take-up, dynamics of the take-up Significance of the occupier market for the total turnover Balance and stability of industry demand	20%
Rent score	Level, dynamics and projection of prime rents in best-of-class locations Level, dynamics and projection of average rents across the market area	10%
Investment demand score	Level, dynamics and market significance of the investment demand, in sqm Level, dynamics and stability of the investment demand, in euro	20%
Yield score	Level, dynamics and projection of stabilised prime yield (net) in best-of-class locations Level, dynamics and projection of average yields (net) across the market area	10%
Land score	Level, dynamics and stability of the maximum prices for commercial building land in best-of-class locations Level, dynamics and stability of the average prices for commercial building land across the market area	10%
Regional score 1	Level, dynamics and stability of the population Level and dynamics of the gross value added (absolute) and share of the industrial sector trade & transportation	10%
Regional score 2	Level and dynamics of gainful employment (absolute) and share of the industrial sector trade & transportation Level and dynamics of social-security-covered employment (absolute) and share of the industrial sector trade & transportation	10%

<sup>8</sup> The input values are based essentially on the analysed aspects of this survey, e. g. the building activity and the investment volumes during the period under review (2011-2015). They are supplemented by older data and forecast time series in order to detect trends and changes in the logistics regions. For a detailed explanation of all parameters, go to the glossary at [www.logistikundimmobilien.de](http://www.logistikundimmobilien.de).



In addition to the top-down information on the logistics regions, the fold-out in the back of the survey details the most important key ratios used in the scoring.

For the purpose of making the scoring results easier to read and interpret, we translated all scoring results into the 6-point grading scale used in German education, with grades ranging from 1 ("very good") to 6 ("insufficient"). The outcome is a corresponding overall score for each of the 28 regions, calculated in terms of market attractiveness:

Fig. 74 OVERVIEW OF THE MARKET ATTRACTIVENESS OF THE LOGISTICS REGIONS

LOGISTICS REGION	RANK	TOTAL SCORE	TRANSLATED INTO A GRADE BETWEEN 1 AND 6	CHANGE IN RANK 2015 – 2016
Hamburg	1	2.36	1	0 –
Munich	2	2.36	1	4 ↑
Berlin	3	2.49	1	-1 ↓
Düsseldorf	4	2.50	1	1 ↑
Rhine-Main/Frankfurt	5	2.52	2	-1 ↓
Halle/Leipzig	6	2.64	2	-3 ↓
Cologne	7	2.69	2	0 –
Bremen and North Sea ports	8	2.74	2	3 ↑
Hannover/Braunschweig	9	2.77	2	-1 ↓
Rhine-Ruhr	10	2.79	2	0 –
Stuttgart	11	2.90	2	2 ↑
Lower Bavaria	12	2.97	2	-3 ↓
Augsburg	13	3.08	3	9 ↑
Rhine-Neckar	14	3.09	3	3 ↑
East Westphalia-Lippe	15	3.28	3	3 ↑
Nuremberg	16	3.41	3	4 ↑
Dortmund	17	3.43	3	2 ↑
Bad Hersfeld	18	3.58	4	3 ↑
A4 motorway Saxony	19	3.61	4	-3 ↓
Kassel/Göttingen	20	3.62	4	-6 ↓
A4 motorway Thuringia	21	3.72	4	6 ↑
Münster/Osnabrück	22	3.73	4	-10 ↓
Aachen	23	3.74	4	2 ↑
Koblenz	24	3.74	4	2 ↑
Ulm	25	3.74	4	-2 ↓
Upper Rhine	26	3.75	4	-11 ↓
Saarbrücken	27	3.99	4	-3 ↓
Magdeburg	28	4.24	5	0 –

## COMPARING THE ATTRACTIVENESS OF LOGISTICS REGIONS FOR THE REAL ESTATE ECONOMY

The market attractiveness rating reveals a brisk dynamic. Only two positions remained unchanged.

### *STABLE TREND IN THE TOP THIRD – LOGISTICS REGION OF HAMBURG STAYS TOP PERFORMER*

The upper third developed comparatively stable in this year's scoring. Most of the individual regions more or less retained their positions. The Hamburg logistics region once again made the top of the list. Its high score is explained above all by the keen demand for space and by a building activity and land availability that, while having declined, is still very high. At the same time, rents are still relatively affordable while the investment demand remains high.

The logistics region of Munich, which placed sixth last year, moved up four positions and now ranks second. Although high land prices continue to hold back the market, the demand for plots as well as investor demand and the demand generated by the regional economy have both boosted the market this year. The logistics regions of Berlin and Halle/Leipzig, which had outperformed over the past years, lost some of their momentum and slipped in this year's ranking, with Berlin dropping one rank down to place 3 and Halle/Leipzig placing sixth after dropping three ranks. Berlin has effectively lost its position to Munich. This is explained by reasons such as the low building activity as well as low occupier and investment demand when compared to other logistics regions.

The logistics region of Düsseldorf went up one place compared to the prior-year scoring, whereas the region of Rhine-Main/Frankfurt dropped one place. In these two cases, the performance is explained by the respective dynamic of market demand. It was moreover fuelled by excellent socio-economic and regional economic aspects associated with the superior locations and infrastructure connectivity of the Düsseldorf and Rhine-Main/Frankfurt metro regions. Düsseldorf also shows a sound supply and demand structure.

### *UNEXPECTED HIDDEN CHAMPIONS: THE LOGISTICS REGIONS AUGSBURG AND KOBLENZ*

Something of a surprise in the midfield of this year's scoring is Augsburg. The logistics region of Augsburg gained no less than

nine positions, and therefore qualifies as a so-called "hidden champion." The most important drivers here are the score values at the supply end along with rents and yields. Similarly, the logistics regions of Nuremberg and Rhine-Neckar improved by three and four positions, respectively. Here, the socio-economic and regional economic aspects played the key role.

Although Koblenz ranks in the bottom third of the table, it is another logistics region of the "hidden champion" type. What justifies this epithet is the mainly the fact that it did not use to be seen as a logistics region at all until a few years ago, and there was practically no building activity in the logistics sector before 2010. But its convenient location in infrastructure terms, half-way between the established regions of Rhine-Main/Frankfurt and Cologne and its proximity to western European markets has over time turned Koblenz into an attractive logistics site for the retail business. As a result, the region moved up three ranks since last year's ranking.

### *IN DECLINE: MÜNSTER/OSNABRÜCK AND UPPER RHINE REGION*

The bottom third of the table includes two submarkets (the logistics regions of Münster/Osnabrück and Upper Rhine) who lost ten and eleven positions, respectively. What caused both of these submarkets to be downgraded was a slowing dynamic in virtually all analysis parameters.

The logistics region A4 motorway Thuringia, by contrast, climbed up six ranks as a result of improved supply and demand structures and due to an adjusted rent performance. Other than that, there were only minor changes in position.

At the very bottom of the list this year as last year is Magdeburg. The low rating should be blamed not on poor performance, but on the fact that the region counts among the smallest among the 28 logistics regions, together with Saarbrücken and Aachen. While Aachen and Saarbrücken straddle the country's western border and benefit from few socio-economic and regional economic demand factors, Magdeburg is geographically located midway between three highly dynamic regions, namely Hanover/Braunschweig, Berlin and Halle/Leipzig. Since Magdeburg property and rental market shows no strain, the region has a strong outlook that will come into play as the supply in zoned land in these other logistics regions continues to dry up.

## 96 PROSPECTIVE PATTERNS OF CHANGE IN GERMANY'S LOGISTICS REGIONS

The bulk of the demand for logistics space in Germany is generated in the top regions. This is not about to change, because these conurbations are where the country's vendors and consumers are located. Then again, the short supply of land and the fierce competition over floor space with other types of use are having a growing impact. This makes it by all means conceivable that new locations take the place of existing ones. For example, the Augsburg region and Lower Bavaria already serve as retention basins for excess demand that the nearby region of Munich can no longer handle. The problem is compounded by the difficulty to recruit an adequate number of staff in the top regions. First signs indicating relocations of the online retailers out of the Top 5 and into lower-ranking Top 10 logistics regions are already apparent on the market.

Generally speaking, the demand drivers in combination with technological changes and adjustments will trigger long-term changes in production, distribution and consumption. These will in turn have repercussions for all logistics networks and sites. But do all locations benefit to the same extent from it?

**DR. WALTHER PLOOS VAN AMSTEL, PROFESSOR FOR SUPPLY CHAIN MANAGEMENT AND CITY LOGISTICS:**

*"Some of the locations will have to adapt. But this concerns primarily city logistics or individual processes within the logistics industry as a whole. Many players of this markets have already made adjustments to their networks over the past years. Take, for example, all the mechanised delivery sites (called "MechZB" in German) that have been created in the suburbs of major cities or else are planned. In the case of DHL, it has noticeably improved CEP deliveries already. Similarly, Amazon is setting up a network of more than 90 distribution warehouses. Other players may still have to follow suit.*

*If e-commerce takes off as expected in the B2B sector or in food retailing, some challenges remain that will have to be addressed. Food services require a more or less local network whose hub has to be very close to the city or inside of it. Due to the low concentration of values, transportation is the key factor here when defining the network. The maximum distance acceptable in this line of business would be 30 km, because otherwise you would already be too remote from the town centre. This becomes all the more relevant if transports are to rely more heavily on e-mobility as suggested by many.*

*Inner-city deliveries remain a defining issue. We need a radical shift in thinking if things like same-hour delivery or time-window delivery are to work out at least to some degree on the scale that will be required in the future. Otherwise, the development will result in gridlocked traffic in urban areas."*

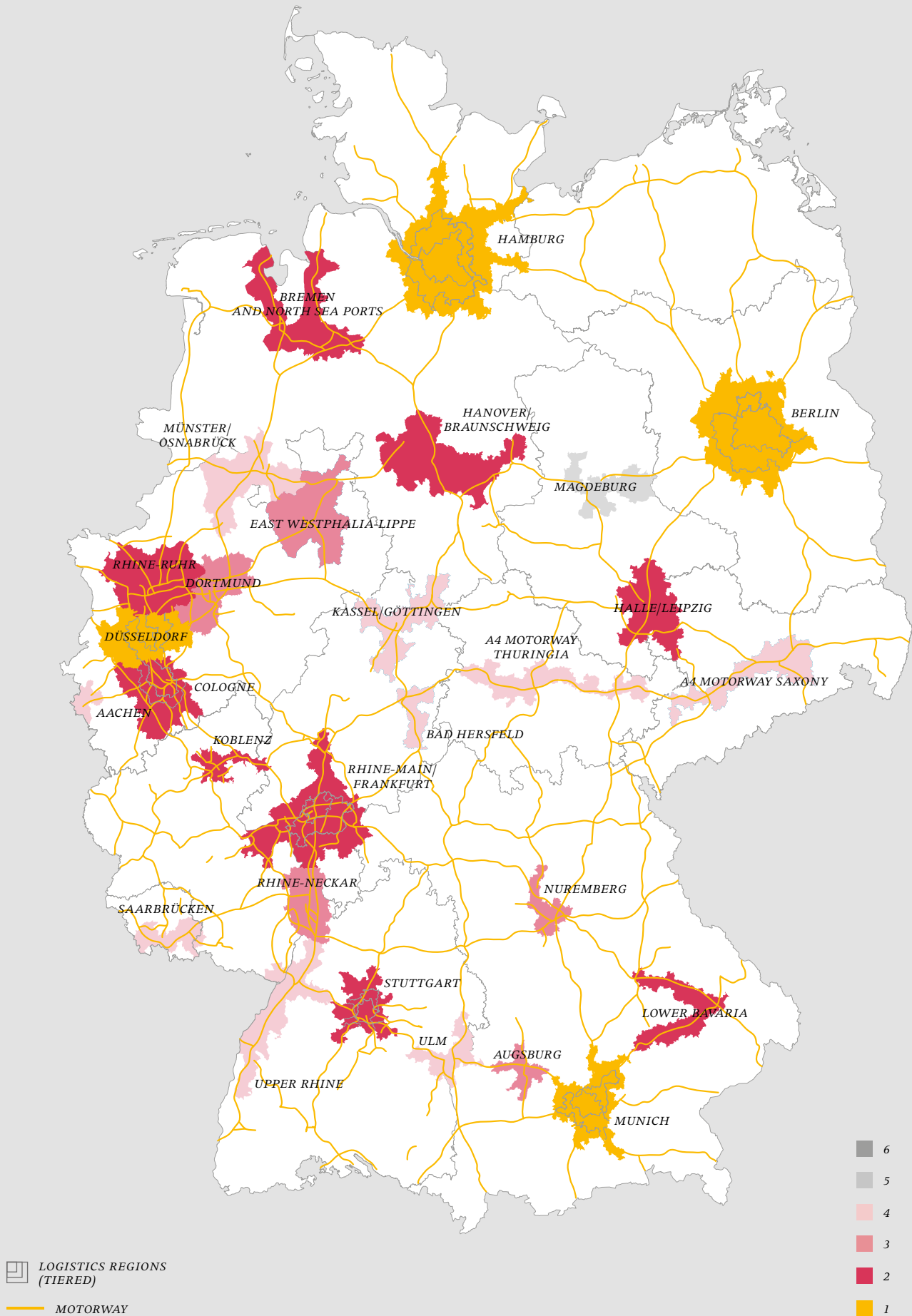
### **ESPECIALLY METROPOLITAN REGIONS CAN BENEFIT FROM FUTURE DEVELOPMENTS**

In sum, it is safe to say the following: Metro regions stand to benefit most from the imminent development because they generate the greatest demand. Then again, a number of unresolved issues in complex systemic connections in city logistics remain to be clarified that could be associated with elevated risk exposure. For some players, remote locations in the greater vicinity become preferable in this case.

**ALEXANDER MAI, DREES & SOMMER:**

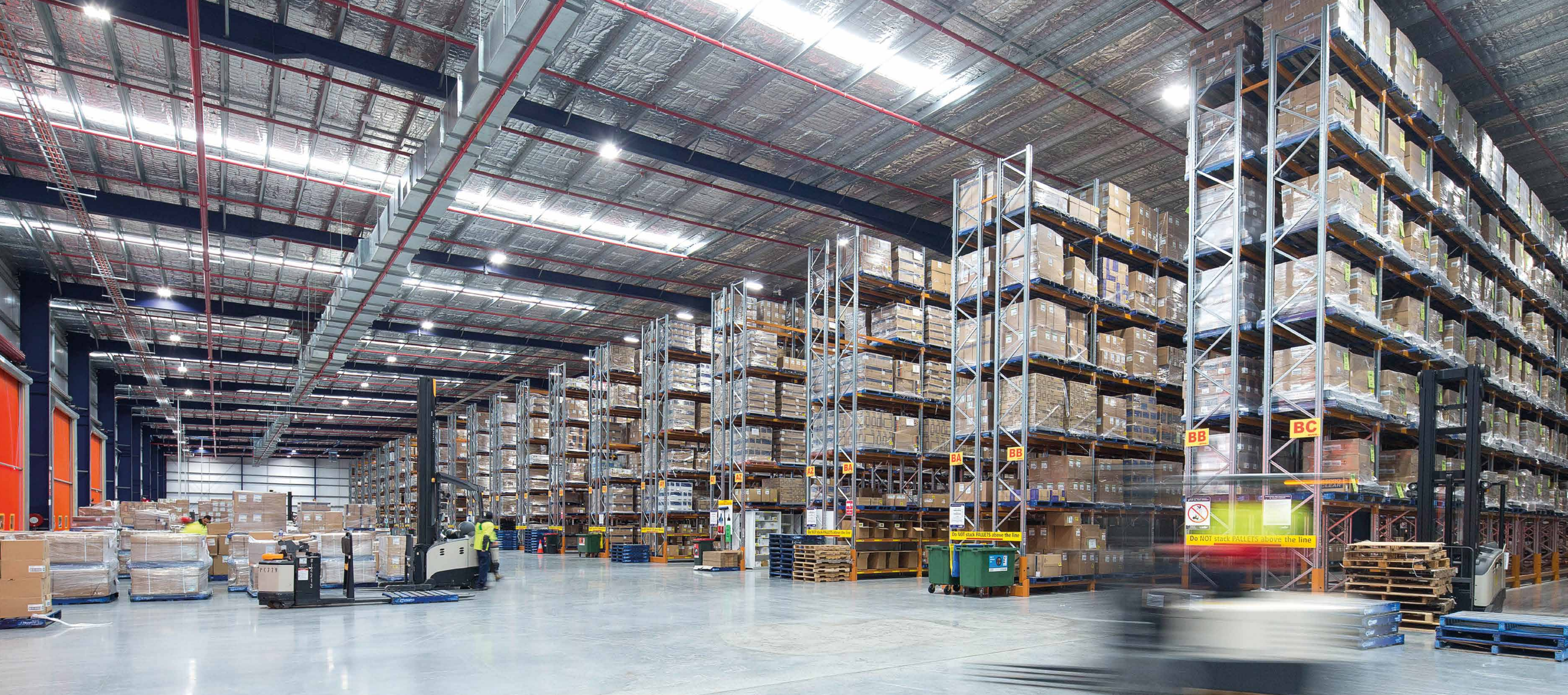
*"How and where demanders settle depends essentially on their place in the logistics process chain. On the level of the inter-regional distribution, the larger sites in slightly remoter locations with adequate customer and human resource potential will continue to be relevant. Having optimal access to the primary transport network remains mandatory."*

Fig. 75 MARKET ATTRACTIVENESS OF GERMANY'S 28 LOGISTICS REGIONS (OVERALL SCORING)



OVERVIEW OF THE MOST IMPORTANT KEY FIGURES OF THE 28 GERMAN LOGISTICS REGIONS		A4 MOTORWAY SAXONY	A4 MOTORWAY THURINGIA	AACHEN	AUGSBURG	BAD HERSFELD	BERLIN	BREMEN AND NORTH SEA PORTS	DORTMUND	DÜSSELDORF	HALLE/ LEIPZIG	HAMBURG	HANOVER/ BRAUNSCHWEIG	KASSEL/ GÖTTINGEN	KOBLENZ	COLOGNE	MAGDEBURG	MUNICH	MÜNSTER/ OSNABRÜCK	LOWER BAVARIA	NUREMBERG	UPPER RHINE	EAST WESTPHALIA-LIPPE	RHINE-MAIN/ FRANKFURT	RHINE-NECKAR	RHINE-RUHR	SAARBRÜCKEN	STUTTGART	ULM	
Top-Down Information	Size of the logistics region, in sq. km (2016)	1,984	1,913	364	451	719	4,419	2,748	1,696	2,000	2,089	4,988	3,318	1,903	645	2,259	1,380	2,877	2,373	1,868	1,052	2,603	2,637	4,152	1,412	2,817	925	1,934	1,107	
	Surface area by type of actual use: Industrial and commercial floor area, in '000 sqm (2013)	45	28	8	14	7	104	60	51	73	74	113	77	22	16	55	20	34	38	22	21	72	49	78	55	114	30	49	22	
	Gross domestic product (estimate), in billion euros (2012)	35.3	21.0	15.0	17.9	7.7	128.9	46.7	50.6	109.7	32.8	137.4	77.0	23.4	18.4	105.1	10.6	131.7	37.7	26.3	39.5	55.3	51.4	169.9	60.1	101.7	24.1	93.2	18.7	
	Unemployment, in '000 (2015)	54	30	21	13	4	222	62	87	121	56	122	72	23	13	111	18	54	29	11	30	31	55	116	43	191	26	41	9	
Benchmark data used in the scoring, inter alia																														
Supply score	Investment-grade stock, in '000 sqm (2016)	354	755	173	443	272	959	1,076	1,247	1,504	1,210	2,353	1,572	771	251	872	214	1,013	706	764	566	992	585	2,404	936	1,480	194	1,003	572	
	New-build completions in the logistics region, in '000 sqm (2011-2015)	182	638	86	262	65	508	555	356	894	654	952	899	405	243	360	77	534	454	409	303	466	299	1,280	604	688	41	582	294	
Demand score	Take-up in the logistics region, in '000 sqm (average 2011-2015)	48	156	36	71	38	338	207	194	314	186	545	302	108	62	200	23	283	134	196	103	141	147	545	134	231	22	238	57	
	Share of the letting take-up, in % (2011-2015)	23%	52%	52%	76%	48%	73%	56%	59%	75%	76%	63%	64%	61%	57%	68%	7%	53%	27%	68%	63%	72%	38%	67%	57%	53%	56%	45%	40%	
Industry demand in the logistics region (2011-2015, in %)	in the logistics & transport sector	37%	38%	34%	57%	62%	38%	60%	36%	34%	62%	55%	37%	61%	12%	52%	50%	43%	34%	48%	73%	36%	42%	50%	43%	43%	62%	45%	43%	
	in the trade sector	26%	52%	34%	34%	32%	43%	16%	53%	34%	22%	20%	25%	9%	63%	25%	48%	25%	36%	2%	5%	36%	28%	26%	34%	34%	5%	16%	17%	
	in the manufacturing sector	21%	10%	24%	8%	2%	10%	17%	5%	19%	13%	14%	22%	22%	5%	10%	0%	12%	24%	42%	8%	24%	14%	11%	15%	13%	33%	26%	26%	
	in miscellaneous	16%	1%	9%	2%	4%	10%	7%	6%	12%	2%	12%	16%	8%	20%	13%	1%	19%	6%	7%	14%	4%	16%	13%	8%	11%	0%	13%	13%	
Rent score	Prime rents in the logistics region, in euro (2015, in city*)	4.20	4.00	5.10	4.80	4.20	4.90	4.20	5.10	5.50	4.40	5.70	5.80	4.20	4.50	5.60	4.40	6.70	4.30	5.10	5.00	5.00	4.20	6.10	5.30	4.90	4.30	6.10	5.00	
	Average rents in the logistics region, in euro (2015)	3.20	3.00	3.50	3.80	3.30	3.90	3.20	3.80	4.50	3.70	4.70	3.50	3.20	3.40	4.10	3.30	5.10	3.40	4.40	3.60	3.60	3.30	5.10	4.10	3.50	3.00	4.60	4.20	
Investment demand	Investment activity in the logistics region, in '000 sqm (2011-2015)	32	449	42	128	200	700	634	645	1,125	1,329	1,144	617	401	171	734	20	621	182	334	787	580	438	2,196	380	526	58	388	247	
	Investment activity in the logistics region, in million euros (2011-2015)	21	241	31	69	100	443	399	357	798	618	939	450	244	107	637	3	641	135	212	420	374	276	1,267	340	401	50	339	177	
Yield score	Prime yield (net) in the logistics region, in % (2015, in city**)	7.40	7.60	8.10	7.60	8.90	5.50	6.40	6.50	5.60	6.10	5.40	6.00	6.70	7.50	5.60	9.00	5.35	7.50	6.60	6.70	7.60	7.50	5.45	8.00	5.90	7.00	5.70	6.90	
	Average yield (net) in the logistics region, in % (2015)	8.80	8.90	9.30	8.70	9.90	7.30	7.70	7.80	7.20	7.50	6.90	7.40	8.50	9.20	7.70	10.00	6.20	8.70	7.50	7.70	9.10	8.20	7.80	9.10	8.00	8.70	7.30	9.00	
Land score	Maximum land prices in the logistics region, in euro (2015, in city***)	120	110	195	150	115	150	132	280	320	125	210	200	90	150	155	65	1,300	150	320	275	310	85	460	340	170	145	680	190	
	Average land prices in the logistics region, in euro (2015)	85	65	115	120	80	95	62	90	240	70	145	120	60	100	130	40	620	85	250	165	195	70	315	265	120	75	460	125	
Regional score 1	Population in '000 residents (2015)	1,309	725	460	475	172	4,422	1,347	1,698	2,763	1,126	3,362	1,822	638	406	2,644	352	2,422	986	459	895	1,287	1,459	3,536	1,477	3,411	579	1,835	275	
	Gross value added, total, in billion euros (2014)	35.1	20.7	14.0	16.6	7.4	123.5	44.6	46.7	102.4	32.7	130.6	76.1	22.1	17.8	100.9	10.0	133.1	34.8	25.1	37.8	51.3	48.2	164.7	58.5	93.2	22.1	91.6	17.9	
	Gross value added, trade & transport, in billion euros (2012)	5.2	3.1	2.4	2.9	1.3	22.9	9.5	8.4	21.7	5.7	33.0	11.5	3.7	3.2	22.7	1.5	26.9	6.6	3.0	6.8	9.3	8.8	33.9	9.6	16.8	3.5	13.2	3.2	
Regional score 2	Gainful employment total (in '000) (2013)	738.7	453.7	262.0	289.3	133.6	2,218.5	766.7	826.9	1,551.9	663.4	1,937.4	1,117.2	400.4	311.5	1,499.1	203.9	1,619.1	614.2	406.9	620.2	829.8	824.2	2,287.1	881.0	1,568.0	388.6	1,211.3	295.8	
	Gainful employment, in trade & transport sector (in '000) (2012)	170.5	102.4	67.2	74.8	37.8	576.1	217.9	234.2	441.6	167.0	604.4	273.8	99.1	78.8	416.0	46.8	465.2	163.5	92.9	159.9	210.3	212.2	661.4	222.9	406.0	96.5	288.6	74.9	
	Insurable employment, total, in '000 (2012)	545.6	324.2	168.8	188.4	84.5	1,496.0	513.0	548.9	1,092.7	454.5	1,350.3	804.2	265.9	183.7	1,000.6	149.8	1,130.0	406.8	278.9	457.5	565.1	574.3	1,631.6	606.3	1,058.1	277.8	880.5	199.9	
	Insurable employment, in trade & transport sector, in '000 (2012)	125.3	74.8	43.3	51.7	26.0	416.3	151.6	150.9	308.6	122.1	447.8	195.6	64.0	50.4	294.4	35.2	349.8	108.2	58.2	119.6	147.9	143.8	495.9	157.5	263.7	63.1	210.1	53.2	
	The prime rent in the logistics region refers to:	* Dresden	* Jena	* Aachen	* Augsburg	* Fulda	* Berlin	* Bremen	* Dortmund	* Ratingen	* Leipzig	* Hamburg	* Wolfsburg	* Kassel	* Koblenz	* Cologne	* Magdeburg	* Munich	* Osnabrück	* Regensburg	* Nuremberg	* Karlsruhe	* Bielefeld	* Frankfurt	* Heidelberg	* Duisburg	* Saarbrücken	* Stuttgart	* Ulm	
	The prime yield in the logistics region refers to:	** Dresden	** Erfurt	** Aachen	** Augsburg	** Fulda	** Berlin	** Bremen	** Dortmund	** Düsseldorf	** Leipzig	** Hamburg	** Hanover	** Kassel	** Koblenz	** Cologne	** Magdeburg	** Munich	** Osnabrück	** Regensburg	** Nuremberg	** Karlsruhe	** Bielefeld	** Frankfurt	** Mannheim	** Duisburg	** Saarbrücken	** Stuttgart	** Ulm	
	The maximum price of land in the logistics region refers to:	*** Dresden	*** Jena	*** Aachen	*** Augsburg	*** Fulda	*** Berlin	*** Bremen	*** Dortmund	*** Düsseldorf	*** Leipzig	*** Hamburg	*** Hanover	*** Kassel	*** Koblenz	*** Bonn	*** Magdeburg	*** Munich	*** Osnabrück	*** Regensburg	*** Nuremberg	*** Pforzheim	*** Bielefeld	*** Frankfurt	*** Heidelberg	*** Mülheim an der Ruhr	*** Saarbrücken	*** Stuttgart	*** Ulm	





INTERIOR VIEW OF MODERN  
TYPE COLD STORAGE AREA  
(Source: Goodman)



# *TOMORROW'S LOGISTICS* REAL ESTATE

Which factors influence the evolution of logistics real estate? This chapter will summarise the findings of the previous chapter before interpreting them and deriving insights in an overall conclusion.

## SEVEN HYPOTHESES ON THE FUTURE OF LOGISTICS REAL ESTATE

The quantitative and qualitative analyses of the foregoing chapters provide an initial impression. Now is the time to take a closer look at the future. To this end, we asked the four interviewed experts and two of the four panels to respond to seven hypotheses pre-phrased by us: on the one hand, we asked the property developers who are familiar with the desires and needs of their clients, i. e. the tenants and owner-occupiers, and on the other hand the lenders who were also asked to bear in mind their clients, be they investors or owner-occupiers.

# 106 HYPOTHESIS #1:

## LOGISTICS FACILITIES ARE MOVING EVER CLOSER TO URBAN CENTRES OR METRO REGIONS.

Virtually three of four property developers polled are convinced that logistics facilities will keep moving closer to urban centres or metro regions. Some expect that technological advances will make it possible to install logistics functions even in urban areas of mixed use. Only a few believe that the quality of location will gain in significance in the coming years. However, great logistics sites are no longer limited to Germany's five leading logistics regions. According to the experts, the increasing degree of automation will boost the significance of locations in East Germany. The one prerequisite is convenient motorway access. Increasingly automated processes especially in the e-commerce sector make the criterion "availability of labour" less relevant. As a result, the human resources available in the above regions would be both sufficient and affordable.

Even 61% of the lenders agreed with this hypothesis. They consider the idea quite realistic that logistics real estate could increasingly be created in the vicinity of cities and urban agglomerations. More than one third of the lender panel were undecided, a higher percentage than was the case with the property developer panel.

**CONCLUSION:** Without a doubt, city logistics generates strong demand for logistics facilities, driven by robust B2B and B2C demand in the e-commerce sector. The logistics operations necessary to meet this demand will largely transpire in urban or peri-urban areas. The properties involved will generally have the character of auxiliary facilities.

**ALEXANDER MAI, DREES & SOMMER:**

"Multi-tier logistics concepts or logistics networks will continue to operate both more remote sites and local ones that are relevant for the last-mile supply. Sites located in the suburbs of cities will supply a network of small supply stations downtown."

These small-scale supply stations are not available at this time but are still in the brainstorming phase. The peri-urban logistics tier is in turn based on the large centralised hubs that will continue to be necessary. The same goes for logistics processes and thus for logistics real estate within the framework of industrial production. Going forward, it will become ever more important for remote locations to have adequate access to the labour market. Other prerequisites that will keep gaining in significance in the wake of digitisation and the evolution of Industry 4.0 includes broadband internet connectivity and an uninterrupted energy supply. So there is no general answer to this hypothesis yet.

Fig. 76 HYPOTHESIS #1: VIEW OF THE PROPERTY DEVELOPER PANEL

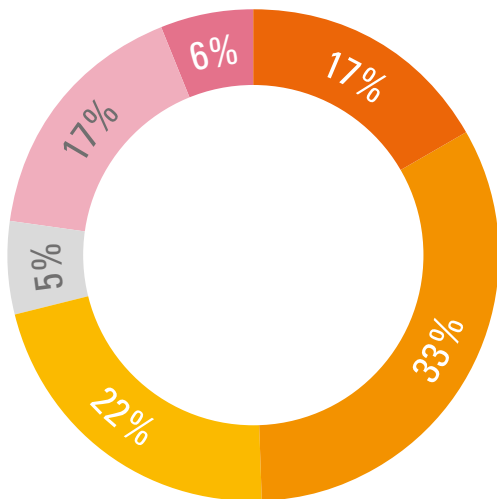
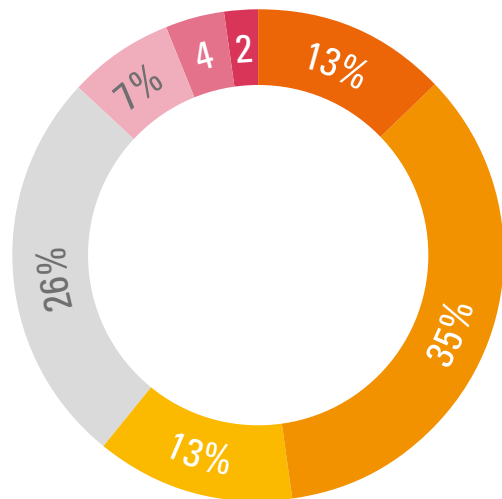


Fig. 77 HYPOTHESIS #1: VIEW OF THE LENDER PANEL



■ STRONGLY AGREE     
 ■ AGREE     
 ■ SOMEWHAT AGREE     
 ■ NEUTRAL



## HYPOTHESIS #2:

*LOGISTICS PROPERTIES KEEP GETTING SMALLER IN SCALE, AND DEMAND FOR ASSETS LARGER THAN 15,000 SQM IS INCREASINGLY IN DECLINE.*

Basically the one things that the two interviewed panels agreed on was that you cannot say anything about this hypothesis without knowing the situation at hand. Among the property developers, 45% disagreed with the hypothesis to varying degrees, but comparatively strongly. Just 12% signalled consent. Opinions were also divided among the lender panelists. One in three experts, however, agreed with the hypothesis, whereas one in four begged to differ.

**CONCLUSION:** This hypothesis is closely connected to the first hypothesis, and has no general answer. The definitive factor is the site of a given warehouse and the position it has within the supply chain. Generally speaking, logistics assets tend to be smaller the closer they are to the city centre.

**DR. WALTHER PLOOS VAN AMSTEL, PROFESSOR FOR SUPPLY CHAIN MANAGEMENT AND CITY LOGISTICS:**

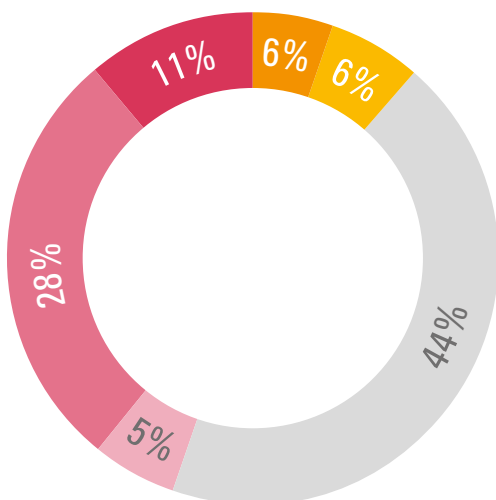
*“This hypothesis calls for a differentiated reply. City logistics assets in an urban environment rarely have a footprint as large as 15,000 sqm. E-fulfilment facilities of Zalando, Docdata or Wehkamp in the Netherlands, by contrast, easily have a floor area of 100,000 sqm or more. Either property type serves a different purpose.”*

Due to the increasingly complexity of automation and intralogistics – meaning the logistics in-house processes – it is safe to assume that peri-urban transshipment warehouses will experience a downscaling trend. This is also suggested by the accelerating turnover rate, which means that the processing time per parcel will decrease and require less logistics space.

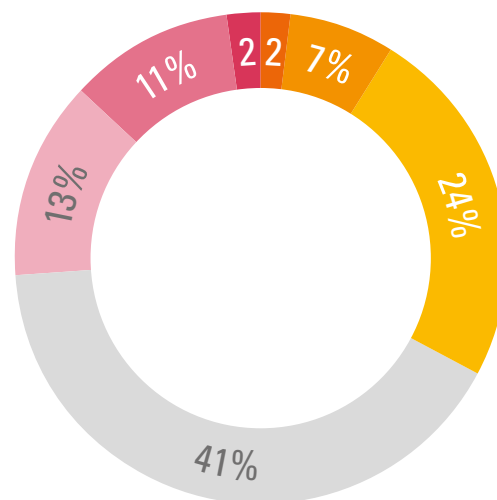
Principally speaking, much the same can be said for several types of warehouses, including large-scale production logistics. Inversely, facility dimensions in the automotive sector keep getting larger. Given the wide variety of car models and the corresponding space requirements for spare parts supply, the trend is obviously here to stay.

That being said, there is also a segment of midfield logistics warehouses. Here, the need for storage areas used for long-term storage shows a downtrend. Assets that represent distribution properties more than anything else will undergo progressive automation and a further increase in turnover. The segment of midfield warehouse assets will shrink slightly.

**Fig. 78 HYPOTHESIS #2: VIEW OF THE PROPERTY DEVELOPER PANEL**



**Fig. 79 HYPOTHESIS #2: VIEW OF THE LENDER PANEL**



SOMEWHAT DISAGREE
  DISAGREE
  STRONGLY DISAGREE

# 108 HYPOTHESIS #3:

## LOGISTICS ASSETS WILL MERGE WITH LIGHT MANUFACTURING FACILITIES TO FORM A NEW "HYBRID PROPERTY" TYPE.

While the provision of value-added services on mezzanine levels does not make a given warehouse a hybrid property, it does point in that direction. No less than 66% of the property developer believe that logistics and manufacturing facilities will eventually merge, while another 17% agree tentatively with the hypothesis. An 11% fraction of the panel disagrees – but does so quite emphatically.

Representatives of the lender side considered the hypothesis plausible as well. More than half of the lenders find the accelerated emergence of hybrid properties conceivable. One on five respondents were unable to say, and nearly 30% disagreed with the assumption to various degrees.

**CONCLUSION:** Many of the polled experts consider a hybrid property combining production and logistics a plausible idea. For them, technological advances open up all sort of opportunities. Given certain circumstances, such mixed forms may well emerge. The general trend, driven by the pressure to save time and money, is toward consolidation.

**PROF. DR. NICO ROTTKE, EY:**

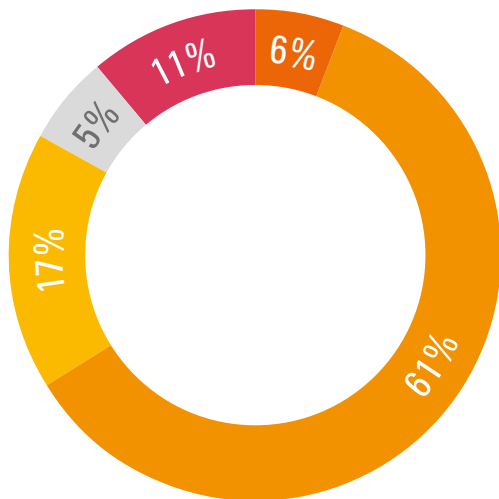
"It's a clear yes. While it may take a while yet, the processes and tasks involved in production, distribution and trade are merging to be accommodated in a new type of property."

**ALEXANDER MAI, DREES & SOMMER:**

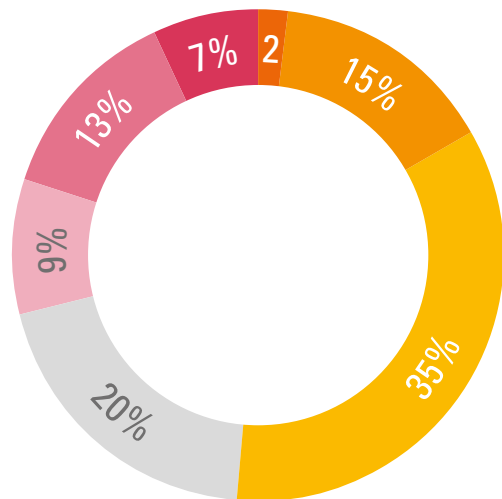
"Yes, we are beginning to see this with increasing frequency. Especially the industry gravitates toward the outsourcing of services."

Here, a lot depends on how big and progressive a given industrial business is. While some conglomerates still think of it as the distant future and may never consider it, Industry 4.0 can create thrilling opportunities for more dynamic entrepreneurs.

**Fig. 80 HYPOTHESIS #3:**  
VIEW OF THE PROPERTY DEVELOPER PANEL



**Fig. 81 HYPOTHESIS #3:**  
VIEW OF THE LENDER PANEL



■ STRONGLY AGREE     
 ■ AGREE     
 ■ SOMEWHAT AGREE     
 ■ NEUTRAL

## HYPOTHESIS #4:

### LOGISTICS OPERATORS ARE MOVING AWAY FROM OWNER-OCCUPANCY IN FAVOUR OF RENTAL PROPERTY.

Property developers seem generally inclined to agree, and will continue to do so in the future. As long as the monetary policy of the ECB keeps building finance rates low, the owner-occupier ratio will remain high – it is not least for this reason that nearly 30% of the property developers disagree with this hypothesis.

Two thirds of the lenders, who focus more on the capital market, agreed with the hypothesis. Their argument is that property ownership fails to make economic sense for a service provider whose business is not part of the real estate value chain. In the lenders' opinion, the share of owner-occupied logistics real estate will steadily decline in the future. A minority of only 22% dismissed the hypothesis.

**CONCLUSION:** There are many reasons to believe that the owner-occupied logistics property is in decline. Logistics operators, specifically those in online retailing, are generally moving away from the owner-occupancy model. Instead, the number of providers, including e-commerce vendor, who let or sublet logistics facilities is on the rise. As part of the trend, e-fulfilment centres often become multi-tenant properties.

**ALEXANDER MÖLL, HINES IMMOBILIEN:**

*"Affirmative, because we are seeing a clear focus on the respective core competence of the tenants in an environment of intensifying competition. As far as I can see, assets that are not part of the core business but tie up liquidity will therefore be taken off the balance sheets of these companies."*

At least for listed companies it is becoming increasingly important not to tie up their capital in real estate – especially not if they have a high number of foreign shareholders and use the IFRS accounting standard. A company could lose in stock market value if a major share of its capital was invested in real estate.

But the current interest environment in particular makes it unlikely that owner-occupied logistics real estate will cease to play a role altogether. For some market participants, certain strategic aspects speak against it. Having the planning competence can make property ownership a sensible proposition because it brings more flexibility. For this reason, owning strategic facilities outright and renting all other facilities is a model that works quite well for many companies.

Fig. 82 HYPOTHESIS #4:  
VIEW OF THE PROPERTY DEVELOPER PANEL

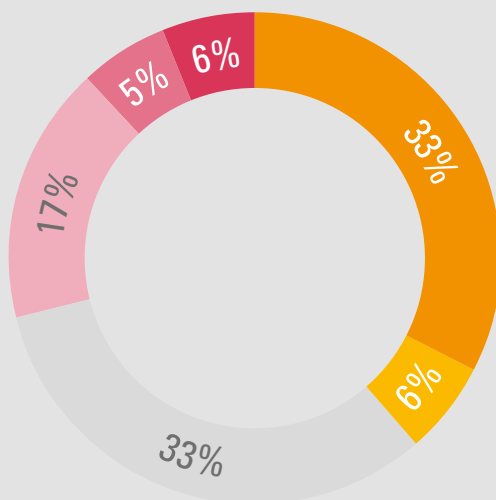
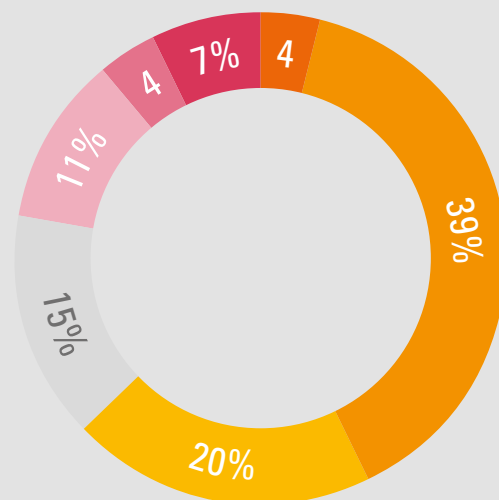


Fig. 83 HYPOTHESIS #4:  
VIEW OF THE LENDER PANEL



SOMEWHAT DISAGREE

DISAGREE

STRONGLY DISAGREE

# 110 HYPOTHESIS #5: MULTI-STOREY LOGISTICS PROPERTIES WILL EXPAND THEIR MARKET SHARE EVEN IN GERMANY.

Property developers, who returned an overall consent of 67%, consider it a possibility that logistics real estate could increasingly expand vertically, too, and that multi-storey facilities could establish themselves on the German market as well. But none of them fully agreed with the hypothesis – and none rejected it out of hand. Lenders took a much more sceptical view. Only one in three considered multi-storey warehouses a realistic alternative for Germany, and 22% of these showed no more than cautious agreement. Almost 30% did not wish to commit themselves, and nearly 40% disagreed with the hypothesis.

**CONCLUSION:** Companies willing to build logistics facilities find the increasing land shortage challenging. The stated goal of the Federal Government to minimise soil sealing in Germany is exacerbating the situation, as is the fierce competition with other asset classes, especially in urban areas. For this reason, property developers that confront this issue on a daily basis see this as a possible solution. Multi-storey warehouses could ease the land shortage. Their feasibility has already been demonstrated in other countries, such as Hong Kong. There are even a few specimen in Germany, albeit with a limited number of floors.

Buildings of this type would be quite spectacular, but its critics worry that they could be difficult to implement. For one thing, the construction costs will be substantially higher, and these

would have to be apportioned to the tenants. Given the high cost sensitivity of logistics operators, their tolerance for additional burdens is very limited, so that the implementation of such a scheme would be possible only in exceptional cases. It needs to be remembered that logistics properties do not have to be located in one exact spot, and that logistics players have some latitude in their choice of location. The short cut-off times in German logistics reduce the significance of proximity, so that there should always be an affordable alternative to a multi-storey warehouse. On top of that, local development plans often impose maximum building heights, so that municipalities would have to amend their zoning codes. The chances of obtaining a planning permit become slimmer yet when you consider how hard it is to obtain one even for regular warehouse.

**DR. WALTHER PLOOS VAN AMSTEL, PROFESSOR FOR SUPPLY CHAIN MANAGEMENT AND CITY LOGISTICS:**

*“The majority of logistics processes are organised on the ground level. The growing throughput in the logistics sector more or less cancels out any demand for vertically structured logistics warehouses. With this in mind, I am inclined to disagree.”*

All things considered, multi-storey warehouses would present the solution to specific scenarios. But their development density will probably be limited due to the associated problems.

Fig. 84 HYPOTHESIS #5:  
VIEW OF THE PROPERTY DEVELOPER PANEL

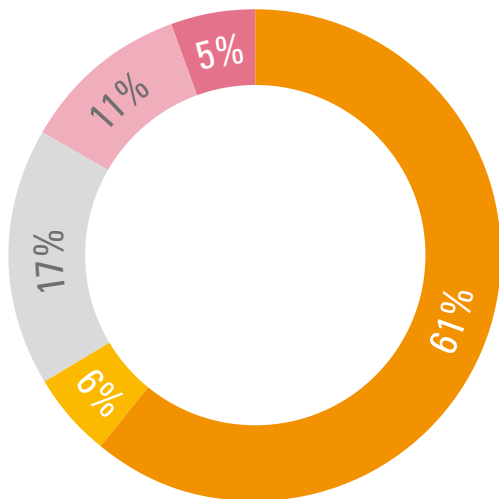
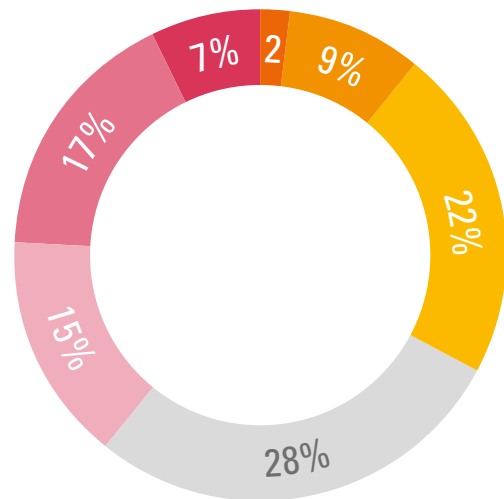


Fig. 85 HYPOTHESIS #5:  
VIEW OF THE LENDER PANEL



■ STRONGLY AGREE     
 ■ AGREE     
 ■ SOMEWHAT AGREE     
 ■ NEUTRAL

## HYPOTHESIS #6:

*ENTIRELY NEW BUILDING TYPES AND LOCATIONS WILL GAIN IN PROMINENCE, E. G. LOGISTICS FACILITIES BRIDGING MOTORWAYS*

Several floors could be an option, but entirely new logistics property concepts probably not – less than one third of the property developer panel agreed with this hypothesis. One in three respondents could not say, whereas the rest of the panel was inclined to disagree.

Analogously, the majority of polled lenders consider it an unrealistic idea that entirely new building types will establish themselves. The functional, rectangular warehouse will remain the gold standard in logistics architecture. Only 29% of the respondents agreed cautiously that entirely new building types are conceivable.

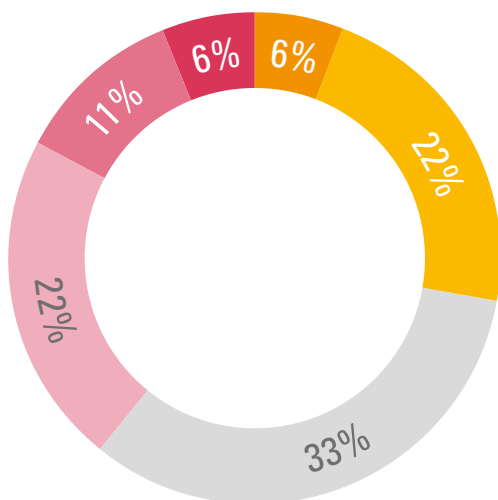
**CONCLUSION:** Assets of this type are realised here and there, but remain the exception or else a publicity stunt.

**PROF. DR. NICO ROTTKE, EY:**

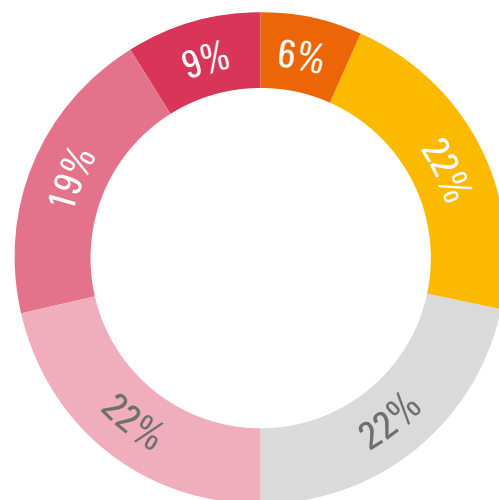
*“They would certainly qualify as beacon projects and sales arguments. But in my eyes they cannot be justified in purely functional terms. So I disagree from a real estate economic point of view.”*

Most stakeholders put a premium on functionality, and this is a requirement that all property concepts convincingly satisfy. Costs and constraints under building law discourage the notion of a broad-based feasibility. New concepts must always coincide with reasonable cost structures. But we need to remember that as recently as 20 years ago nobody bought their books or nappies on the internet.

**Fig. 86** *HYPOTHESIS #6:*  
*VIEW OF THE PROPERTY DEVELOPER PANEL*



**Fig. 87** *HYPOTHESIS #6:*  
*VIEW OF THE LENDER PANEL*



SOMEWHAT DISAGREE

DISAGREE

STRONGLY DISAGREE

# 112 HYPOTHESIS #7:

**WE WILL SEE A SHARP INCREASE IN BROWNFIELD DEVELOPMENTS, WHEREAS GREENFIELD DEVELOPMENTS WILL BECOME THE EXCEPTION.**

The high consent in regard to multi-storey properties could be explained by the growing shortage of available greenfield land. So property developers overwhelmingly agreed with this hypothesis. The lender panel also agreed with a majority of 57%. However, the rate of consent is much lower. Over one third was more or less undecided. But disagreement was negligible in either group.

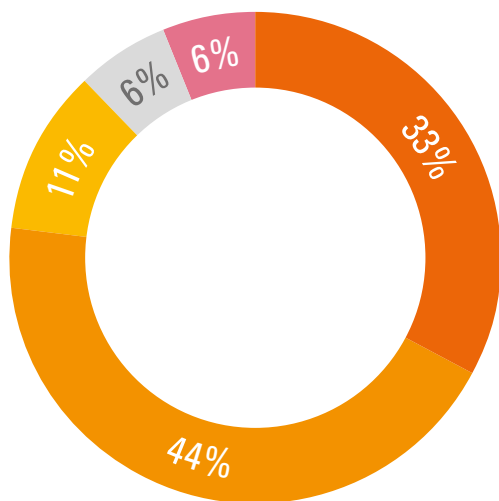
**CONCLUSION:** Another way to handle the land shortage is to fall back on so-called brownfields. The practice has already become quite common, as last year's survey determined. But it also revealed that brownfield site conversions are more feasible in some places than in others, and that, accordingly, everything depends on the case at hand. Ultimately, it comes down to market forces: Logistics real estate is built wherever it is needed. And whatever type of floor space is available will be used. Against the background of the increasing shortage of land, however, brownfield will keep gaining in significance. The drawback of brownfield solutions is that

due to their historically explained size and their proximity to residential areas, brownfield solutions can often meet small space requirements only. Located primarily in inner-city sites, they are rarely zoned as industrial area that would permit multiple-shift operation. While brownfield developments will indeed become more important, their importance is subject to the availability of regeneration sites and the building fabric of a given property or the quality of a given plot. That being said, the demand for greenfield sites will remain high.

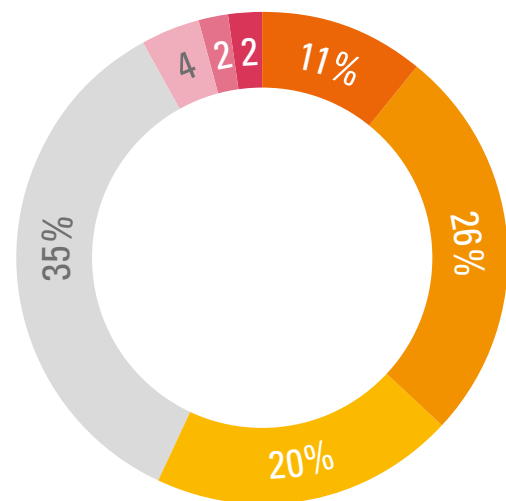
**ALEXANDER MÖLL, HINES IMMOBILIE:**

*"In line with a sustainable management of our natural environment, we should by all means try to find alternative uses for disused or even contaminated brownfield sites before sealing more greenfield land. Ultimately, however, the question will be settled by demand, because there is simply not an unlimited supply of brownfields, and because not everyone can use the available site to advantage."*

**Fig. 88 HYPOTHESIS #7:**  
**VIEW OF THE PROPERTY DEVELOPER PANEL**



**Fig. 89 HYPOTHESIS #7:**  
**VIEW OF THE LENDER PANEL**



■ STRONGLY AGREE     
 ■ AGREE     
 ■ SOMEWHAT AGREE     
 ■ NEUTRAL  
■ SOMEWHAT DISAGREE     
 ■ DISAGREE     
 ■ STRONGLY DISAGREE

# SUMMARY OF HYPOTHESES: THE EVOLUTION OF LOGISTICS REAL ESTATE

Will the currently active drivers, such as technological advances and shifting consumption patterns (the keywords being Industry 4.0 and e-commerce), along with other mega trends disruptively change the ways in which we handle storage and distribution? This calls, first of all, for a clarification of the term “disruptive.” In this context, the term signifies that a life cycle has been suddenly cut short and rendered obsolete by some sort of change. This will certainly not be the case with the logistics warehouses currently in use. Logistics real estate as “tangible asset” will be around for a long time to come. But even now, digitisation already has a disruptive effect on certain processes inside logistics warehouses. It is a trend that will intensify going forward.

**ALEXANDER MÖLL, HINES IMMOBILIEN:**

*“If I knew with any amount of certainty, I would surely tell you. But our world has become so quick-paced, and we are still in such an early stage of this (r)evolution that, in my opinion, we should bide ourselves in patience until we have unambiguous information on the subject. Take a look at the market leaders: Amazon is experimenting with or thinking about its ‘Dragon Boat’ project, and others are pursuing similar ideas. So I’m quite sure that we will see a trend emerge in the near future; but I don’t see it yet.”*

**DR. WALTHER PLOOS VAN AMSTEL, PROFESSOR FOR SUPPLY CHAIN MANAGEMENT AND CITY LOGISTICS:**

*“The throughput rate in the warehouses will dramatically increase. In order to make this possible, the degree of process automation will rise considerable. Logistics management system of much greater efficiency will be deployed to this end. These processes could arguably be called revolutionary. But ‘disruptive’ is a very strong term that has been overused. In regard to the transport system or city logistics, we may interpret them as supplements pointing this way.”*

So it is reasonable to assume that the logistics warehouses of the next five to ten or even 15 years will not look much different than today’s logistics warehouse. The exterior will remain unchanged except for details. In this sense, the development should be thought of as a “gentle evolution” rather than a revolution or even a disruptive change. The changes affect primarily the inner values of warehouses, meaning their intralogistics or warehouse management systems.



# 114 WHICH QUALITIES OF A LOGISTICS WAREHOUSE WILL GAIN IN IMPORTANCE?

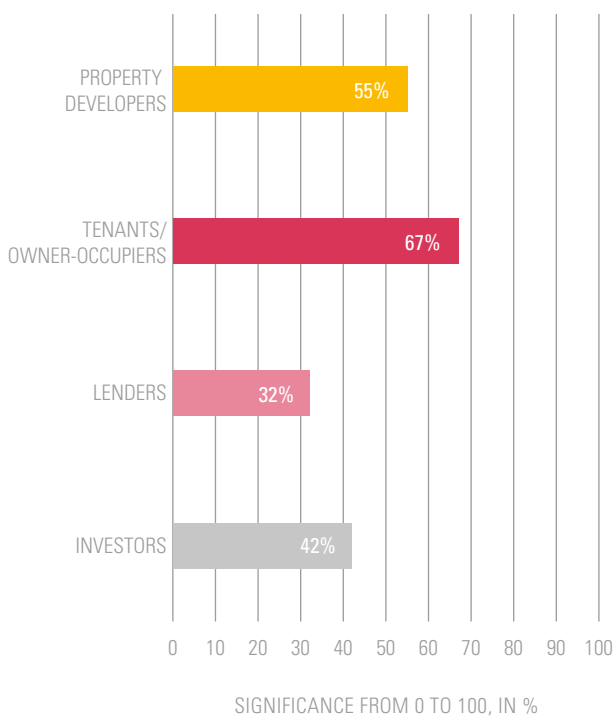
The major changes of the future will concern the warehouse interior above all. But what will they look like? To find out, we polled the panels of property developers, tenants/owner-occupiers, investors and lenders. Panelists were asked to project the significance of various fit-out features or qualities for the next five to ten years. The universe of each panel's opinions was calculated into a figure to make the panel findings mutually comparable. The scale we used ranged from 0 (no significance) to 100 (great significance).

The share of mezzanine space, e. g. in the e-commerce sector or for value-added services, is considered most significant by 67% of the tenants/owner-occupiers in their overall assessment. Property developers take a similar view, with roughly 55% of the panelists attributing a slightly elevated significance to mezzanine levels. By contrast, this aspect appears to play merely a subordinate role for lenders and even more so for investors.

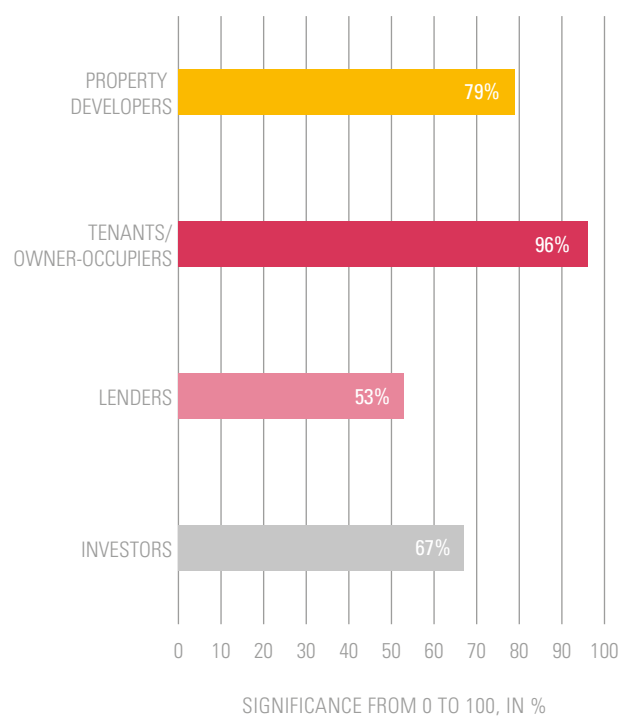
**ALEXANDER MAI, DREES & SOMMER:**

*"As it is, the e-commerce sector already requires much more floor area on the mezzanine level than it used to in the not too distant past. This is true both for the transshipment warehouses of CEP service providers and for the fulfilment centres of logistics service providers. However, we are not aware of such an elevated demand in the majority of pure warehouse properties."*

**Fig. 90** SHARE IN MEZZANINE FLOOR SPACE



**Fig. 91** HIGH-SPEED INTERNET ACCESS, MULTIPLE REDUNDANCY





Against the background of growing digitisation, this aspect of the fit-out quality is rated as highly significant by all panels. Respondents generally agreed that high-speed internet access or redundant cabling should be in place to increase the security of supply in the event the network of any single provider is down. Especially tenants and owner-occupiers attach great importance on an uninterrupted data line, arguing that tomorrow's logistics warehouse will need an uninterrupted and fail-safe network to handle the order processes in the e-commerce sector, and for the internal WLAN to control the intralogistics or communication with the transport operators.

As far as the technical building services go, several panels more or less agree that these will keep gaining in significance. Tenants and owner-occupiers once again attributed the highest significance to this quality, returning a score of 78%. They assume that pure storage will steadily decline in importance, that logistics properties will have an increasing throughput, and that certain production stages will frequently be integrated. Lenders take a similar view, and returned a comparable high score of 71%. The answers of investors and property developers were slightly less affirmative.

Fig. 92 *TECHNICAL BUILDING SERVICES*

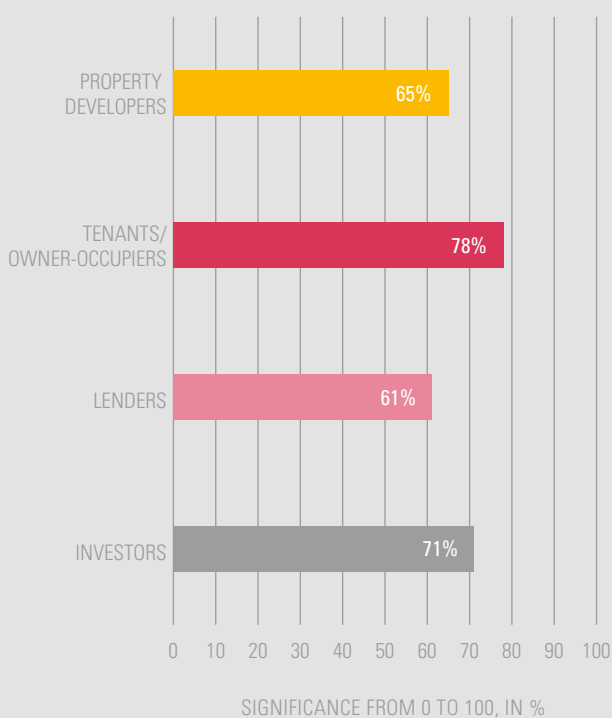
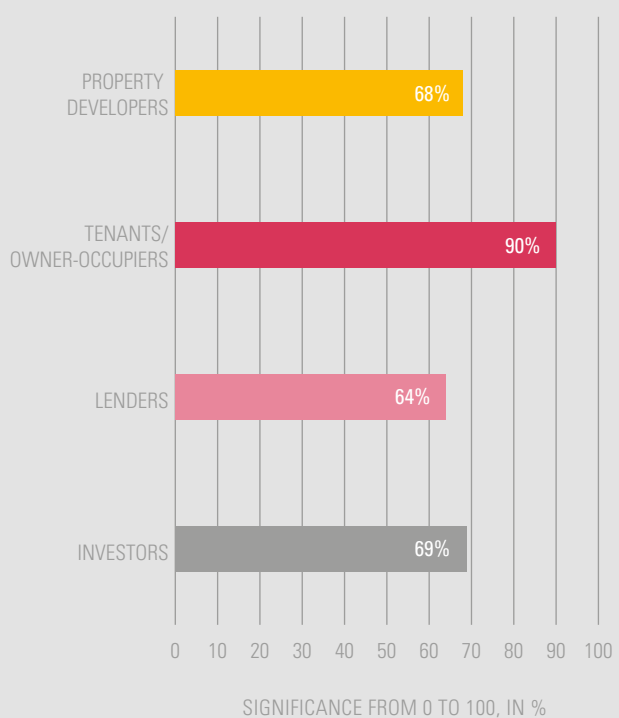
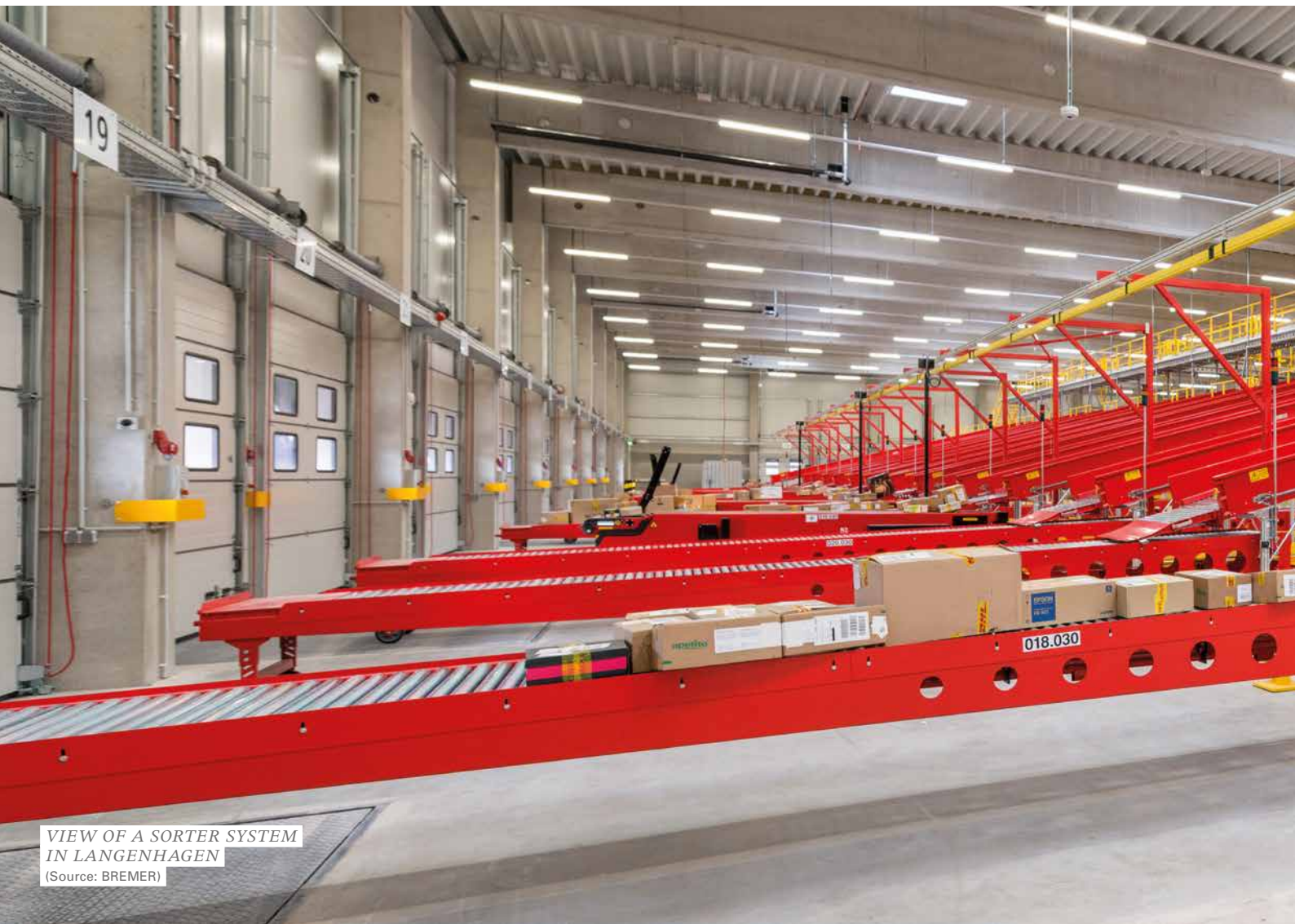


Fig. 93 *OPTIMISATION OF ENERGY CONSUMPTION*



Optimising their energy consumption, e. g. through measures such as motion-activated LED lights or natural lighting, is playing an increasingly important role for tenants/owner-occupiers who wish to reduce their service charges. In fact, nine out of ten respondents in this group attributed a high significance to this aspect. The other panels found the aspect nearly as significant, their responses clustered in a bracket of 64% to 69%. As previously discussed, tenants, owner-occupiers and investors expect optimisations to be cost-neutral for them.

As discussed above, energy optimisation is gaining in importance. However, the respondents cared less about documenting the fact for the outside world in the form of a green-label certification. The aspect returned midfield scores between 40% from investors to 53% from property developers. In individual cases, a certificate can by all means be relevant, e. g. for companies pursuing a CSR policy and seeking to substantiate the carbon-neutral type of transport operation they use. This is most often the case with owner-occupiers, but rarely with tenants who relocate more frequently. The motive of property developer for obtaining a green label is to increase their chances to sell.



VIEW OF A SORTER SYSTEM  
IN LANGENHAGEN  
(Source: BREMER)



Fig. 94 GREEN LABEL CERTIFICATIONS

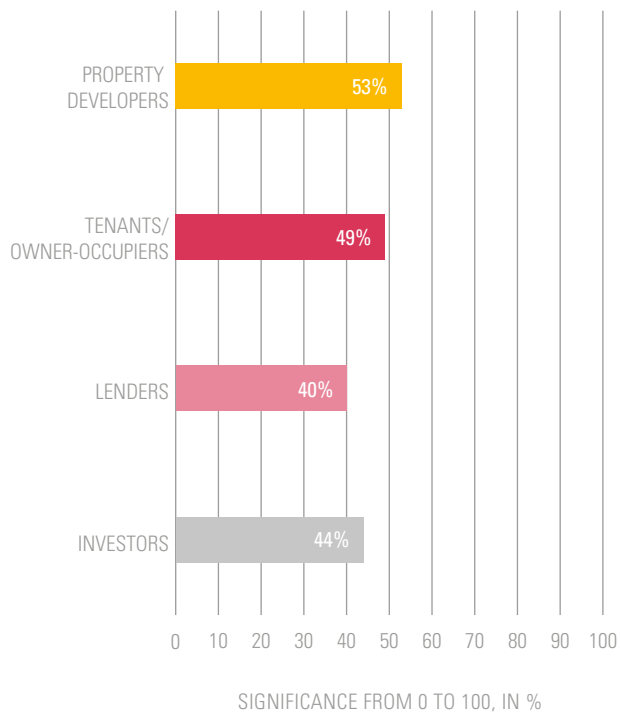
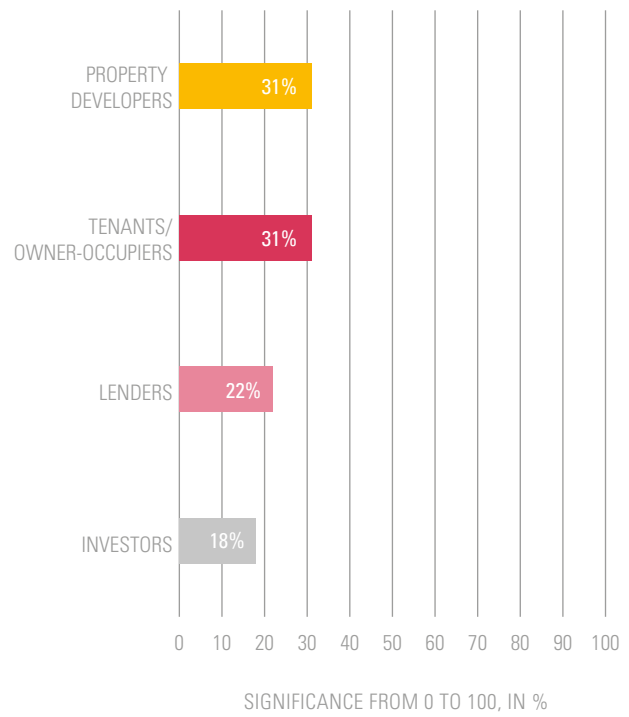


Fig. 95 HIGH-END ARCHITECTURAL AESTHETICS



The respondents cared little about the aesthetics of warehouse architecture. Property developers and warehouse occupiers returned the highest significance ratings – which makes sense because they build or operate the buildings. The lowest ratings for this aspect came from lenders. Tomorrow's warehouses will be optimised for functionality. The only reason to choose a high-end design for a warehouse would be to expedite the planning application process.

Lenders and investors position themselves unambiguously with ratings between 80% and almost 90% in regard to the significance of flexibility during the next five to ten years. The warehouse of the medium-term future is definitely expected to have alternative use potential and ideally to offer a certain reversibility of use as well.

The aspects of alternative use potential and reversibility of use have also attained elevated or high significance for tenants/owner-occupiers as well as for property developers, although not quite to the same degree as the first two groups mentioned. Respondents highlighted the growing importance of multi-functionality, meaning the option to adjust the use according to need, e. g. by switching from manual conven-

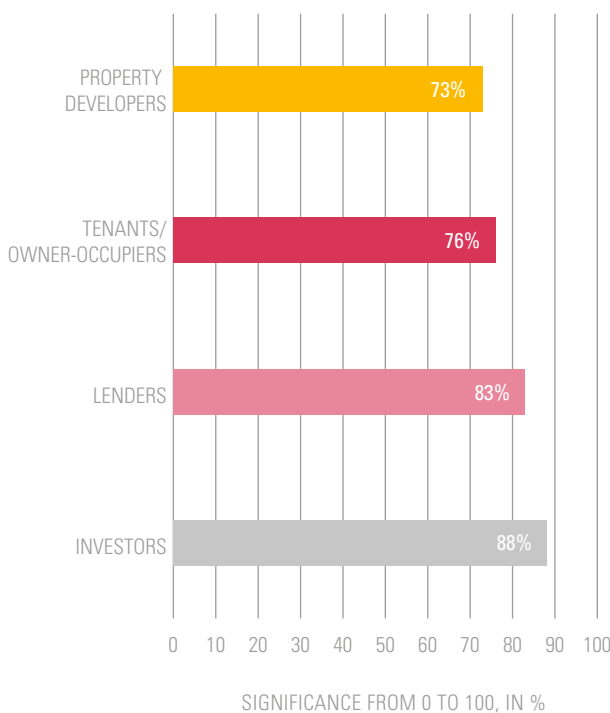
tional activities using walking platforms all the way to fully automated high-bay racking. In the context, it was also noted that strict fire prevention and protection regulations represent an adverse factor for flexible use options.

**ALEXANDER MAI, DREES & SOMMER:**

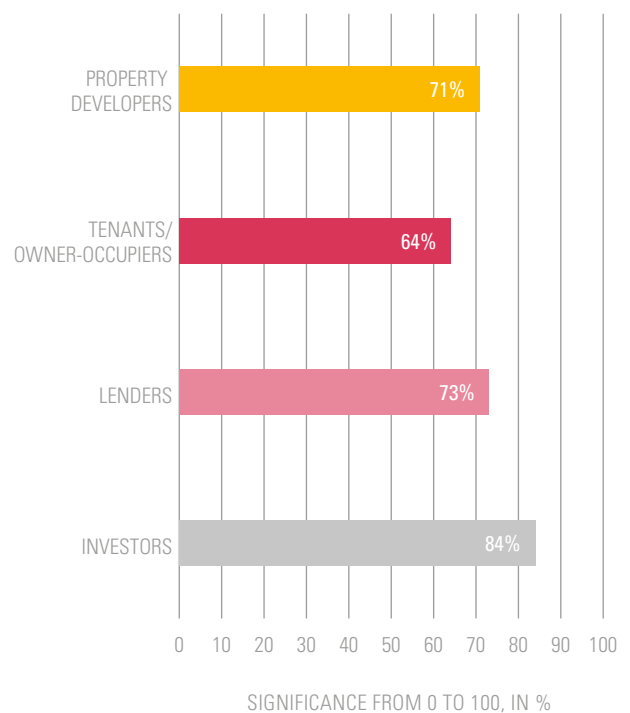
*"In the past, every user built their own warehouse to purpose, whereas today's warehouses integrate alternative use options to such an extent that they would accommodate virtually any tenant. Naturally, this was accomplished not least because of the investors' and lenders' catalogues of requirements. But the world keeps turning. And it is turning fast. For companies, be they tenants or owner-occupiers, this means that they need to respond very flexibly to shifting market conditions. It is common knowledge that a property is immobile and that a site is fixed in place. Yet these two principles are being questioned. Concepts to raise facilities in modular forms and making them modifiable on short notice have far advanced.*

*The planned concepts would permit the implementation of alternative use potential and reversibility of use at a much lower cost than before. By the converse argument, this means that even companies who believed their owner-occupied property*

**Fig. 96 ALTERNATIVE USE POTENTIAL, REVERSIBILITY OF USE**



**Fig. 97 MULTI-TENANCY CAPABILITY**



was the only one that could offer them the required degree of flexibility can now opt to rent. The ideas behind this are actually not new. But the concepts never got off the ground due to cost reasons.”

Also highly rated, though not quite as emphatically as the alternative use potential, is the future multi-tenancy capability of logistics real estate. The factor returned an elevated or high significance rating from panels across the board, even if the percentages varied.

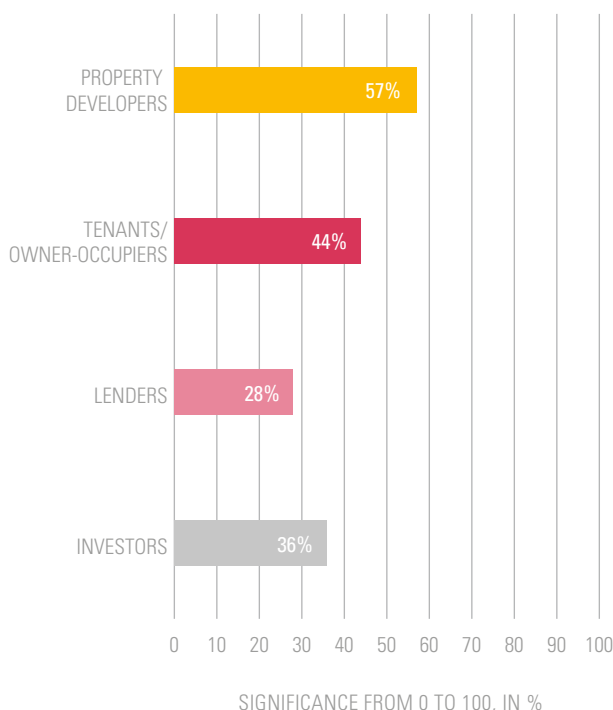
The need for multi-tenancy capability was given particularly strong ratings by the lender panelists. Most lenders expect that future warehouses should have the capacity to accommodate several tenants in different sections of the warehouse, and to scale their floor area in size and quality according to tenant requirements. The lowest rating came from occupiers this time. This group with its large constituency of industrial owner-occupiers prefers single-tenant properties. Their reservations are motivated mainly by security concerns, and were supplemented by calls for corresponding concepts, e. g. in accordance with VdS protection class C.<sup>9</sup>

The general expectation going forward is that consumers will increasingly order groceries through online channels. This would increase the demand for fresh food logistics. It is yet too early to infer as much from the survey findings – none of the panels attaches a high significance to the factor. The highest rating for its future importance came from the property developers. The responses returned by tenants/owner-occupiers are understandable, because only those who actually require cold storage facilities due to their business model will give this aspect a high significance rating.

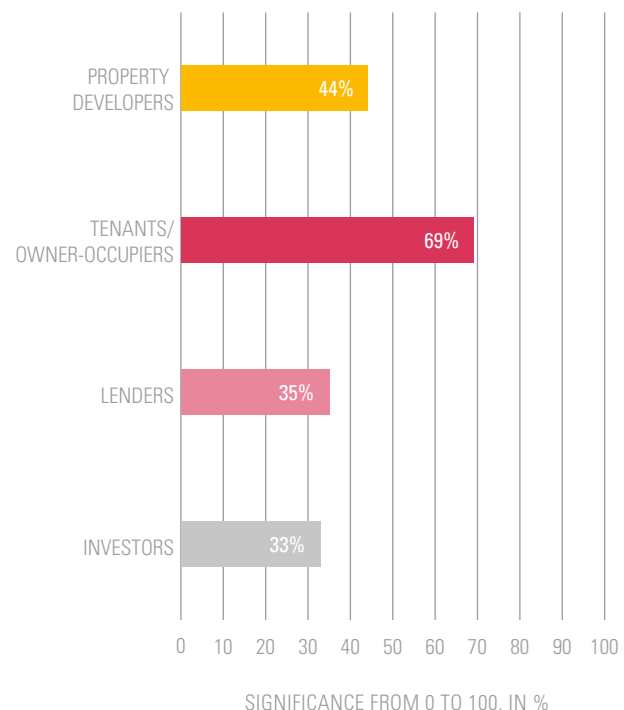
Customised building layouts are practically the opposite of standardised warehouses. A custom warehouse takes the specific requirements into account that an incoming owner-occupier quotes for a warehouse. The past decade, which was paced by the requirements of lenders and investors, evolved a trend toward standardisation in order to ensure optimal property repositioning options. That is why these two panels rate the future need for custom building layouts as limited. Tenants and owner-occupiers, by contrast, wish to implement their needs as flexible as possible.

<sup>9</sup>For details, see the glossary at [www.logistikundimmobilien.de](http://www.logistikundimmobilien.de)

**Fig. 98 RISING AVAILABILITY OF REFRIGERATED STORAGE SPACE**



**Fig. 99 CUSTOM BUILDING LAYOUTS**



## THE FUTURE OF LOGISTICS REAL ESTATE

The quantitative analyses of the markets and the polls among market participants showed that the short- to medium-term future of logistics real estate will more or less resemble the status quo. It is only in the long run that property types are likely to see major changes and to become more differentiated.

But the tightening regulatory requirements and the rising expectations of industry players and consumers need to be met by warehouses in the short term as well. In their poll responses, occupiers stressed the following three points above all:

### › FLEXIBILITY:

The panel of respondents agrees that future logistics real estate must be characterised by advanced variability of use. This includes the potential expandability of a given logistics warehouse.

### › ENVIRONMENTAL SUSTAINABILITY:

Despite great cost sensitivity, environmental sustainability is becoming more and more important for logistics warehouses, too. Warehouses are expected to meet ever tighter thermal insulation standards for buildings. The use of renewable energies is on the rise. Other features mentioned by respondents in this context includes drainage and use concepts such as cisterns for service water or infiltration systems. In the outdoor area, per-

meable surfaces, e. g. paved areas for parking lots, will become ever more important, as will the use of solar energy generated on site for e-mobility, e. g. for proprietary charging stations be it for the company car pool or staff-owned vehicles. These aspects will tie in with concepts for the storage of electric energy that is generated on site and intended for the night-time operation of a given logistics property. Hot water also increasingly provided by the same in-house means.

### › INFRASTRUCTURE REQUIREMENTS:

Linking logistics warehouses to infrastructure facilities is gaining in importance. This includes, in addition to transport connectivity to motorways for distribution purposes, public transportation links, e. g. for commuting staff. Being connected to fibreglass media or similar will also become more important. Finally, access to human resources is considered a key factor.

### ALEXANDER MAI, DREES & SOMMER:

*"The shift in warehouse construction is well under way and continuing steadily. In the process, standards keep being reviewed, and sometimes lead to new approaches that in some cases can by all means be of highly innovative character. But that is not to suggest that the shift will be disruptive. The majority of future logistics warehouses will strongly resemble today's specimen."*

## REAL ESTATE MARKET: FROM E-FULFILMENT CENTRE TO MICRO-HUB – NEW FACILITY TYPES EMERGING

For some years now, take-up as well as completions and investment volumes have been high. Mega-trends, changed consumption patterns and new technologies influence warehouse development. This has predictably raised the construction standards for warehouses. The standardisation and progressing evolution of logistics warehouses is reflected in an incremental development. As a result, today's warehouses already meet many of the increased requirements. Does that mean that the logistics warehouse of the future already exists? Or will the logistics business need different building shapes in the medium and long term?

**PROF. DR. NICO ROTTKE, EY:**

*"The digital transformation in all walks of life will also subject logistics real estate to changes. In the long term, the areas of production, distribution and trade will merge in a single building. This is already becoming obvious in the finishing steps of the value chain that are carried out in logistics warehouses. Also performed now are after-sales services like repairs and warranty services. In other words, logistics real estate keeps evolving, with e-fulfilment centres suggesting first innovations. What we are looking at is a fundamental structural shift. We are still in a relatively early stage, but in the medium term this will have definitive ramifications for the systemic connection between production, distribution and consumption, and thus for the real property as well."*

### **SPECIALISED E-FULFILMENT CENTRES**

It has been often said and is well known: e-commerce is booming and continues to be a main driver. The buildings that are raised these days, however, are intrinsically "standard logistics facilities." In order to increase the usable area, it has become common practice to put in several levels, on which modular racking systems are installed. Developers or investors have the option to remove or dismantle these installations later on, and to declare the asset a standard logistics facility suitable for alternative use. Basically, though, a standard logistics facility is not what e-commerce operators actually need. They always require structural or non-structural alterations that tend to be paid for by the operator. For instance, they will often set up data centre units for the administration of their digital user accounts or photo studios to take professional pictures of their merchandise for their online shops.

If the e-commerce industry sustains its current momentum, e-commerce operators will sooner or later start wondering why the facilities are not built to purpose for e-commerce in the first place. If they were, such premises would enable the operators to go live much sooner. But it would in turn raise the question how suitable such a facility would be for alternative use. Accordingly, standards will have to be defined to enhance the reletability of such facilities to other e-commerce vendors. It is the only way to make this type of specialised e-fulfilment centres marketable.

Other types of real estate are subject to comparable processes and necessities, e. g. transshipment warehouses. The so-called mechanised delivery sites of DHL did not use to be marketable assets for investors until recently because the cross-docking facilities were considered too small or too specific to suit any other operator. Today, both institutional and risk-averse investors will gladly add such assets to their portfolios.

### **HYBRID PROPERTIES COMBINING PRODUCTION, DISTRIBUTION AND CONSUMPTION**

As discussed above, neither the polled experts nor the various panels can imagine that entirely new building typologies are waiting in the wings. All stakeholders agree that the focus of the coming years will be on an evolution of small-scale assets. In the long run, however, hybrid properties could conceivably serve several functions. One of the options mentioned is the merging of department store and logistics property on the urban perimeter. Here, the warehouse would fulfil the main logistics function, and end customers would pick up their online orders much in the manner of a drive-through. Also under discussion is direct shopping, but this will take a considerable amount of time given the red tape involved in German retail licensing.

Equally conceivable are properties that blend production and logistics. First signs of such a trend are already apparent, as the expert panel noted, too.



## **A GENERIC PROPERTY TYPE MARKED BY A MAXIMUM IN FLEXIBILITY**

Implementing the hybrid use models outlined above so that several different types of use share a single property puts the idea of a “generic property” principally within reach. At the core of this concept is a module-based property concept. Tenants requiring more floor space may add modules to their premises, sometimes on several floors. Inversely, they may opt to reduce their footprint. In this case, they would vacate excess modules. Once relocating all of the modules becomes an option, it would qualify the current key characteristic of real estate, its immovable nature.

Such a property would always meet the needs of its present occupier, because the building envelope may be modified any time. This idea more or less reflects the requirements profile that the panel of polled experts quoted for the logistics property of tomorrow. It is supposed to have a high variability of use and flexible expandability. The warehouse of the future needs to give its occupier breathing space, in a manner of speaking. Rerletting such a property would be facilitated by the option to quickly adapt it to changed requirements.

But it will be years yet before such assets will come on-stream. One of the existing obstacles, for instance, are the fixed technical building services that do not always lend themselves to flexible adjustments. This includes even data centre units, which are becoming increasingly important both for production and logistics operations. Another factor that stands in the way of the innovative design is German building law. A planning permit would either have to list all possible scenarios, or an option to modify permits quickly would have to be introduced.

## **LOGISTICS REAL ESTATE AS A SERVICE – FLEXIBLE STORAGE IN A SHARED WAREHOUSE**

Flexibility is the key to success for most logistics operators. In e-commerce, it is not the company with the best price that will prosper, but the one with the speediest delivery. But the planning, building and operating of logistics real estate is based on long periods of time. Merging both worlds is of the essence. But it has been accomplished in other industries: Selling proprietary products on physical data carriers has given way to offering dynamically scalable cloud solutions.

Principally speaking, logistics real estate as a service is exactly what logistics operators need – the option to check into and check out of warehouse units like hotel rooms, depending on the current needs. Alternatively, an operator could sublet currently unused units to other users. The concept has its analogy in co-working spaces for flexible free-lance professionals, but in the case of warehouse units, the roles of the various stakeholders have yet to be finalised.

## **CITY LOGISTICS ACT AS CATALYST TOWARD A NEW BUILDING TYPOLOGY**

City logistics is the field most conspicuously influenced by the currently active drivers. In addition to new means of transportation, the search is on for new building typologies. The sector is currently in a brainstorming phase. An example for a far advanced model are micro-hubs.

## **MICRO-HUBS IN CITY LOGISTICS**

**DR. WALTHER PLOOS VAN AMSTEL, PROFESSOR FOR SUPPLY CHAIN MANAGEMENT AND CITY LOGISTICS:**

*“In city logistics, you need to take a layered view of the city. While the outer layer on the city periphery or in the suburbs takes advantage of solutions such as the mechanised delivery sites, there are no property concepts of long-term viability for the inner-city yet. CEP service providers have therefore begun to set up ‘mini hubs’ that can serve an area inside an 800-metre radius, e. g. out of a shipping container. A network of such mini-hubs may eventually cover all neighbourhoods of a given city. This solution is modular and mobile, on the one hand, but does not operate with sustainably secured locations, on the other hand.”*

**ALEXANDER MAI, DREES & SOMMER:**

*“As the issue of end-customer delivery becomes more pressing, city logistics concepts for the last mile gain in significance. Here as elsewhere, small modular solutions are being field-tested. The concepts have not advanced very far yet. Conceivable options also include larger units raised in solid construction that integrate self storage pre-fab structures or parcel lockers for CEP logistics.”*



## CONSOLIDATION CENTRES (WHITE LABEL HUBS)

To cope with the dense traffic that e-commerce causes in inner cities, another building type comes into play that has been discussed in the city logistics business for decades but has never been implemented on a broad basis: the consolidation centre. These provider-neutral or “white-label” hubs on the urban periphery are open to all CEP service providers, enabling them to pool their transports in a shared means of transportation. This would bring down the number of redundant or empty transports; in the best case, outbound vehicles could bring back returns or even waste material or similar from the city.

**DR. WALTHER PLOOS VAN AMSTEL, PROFESSOR FOR  
SUPPLY CHAIN MANAGEMENT AND CITY LOGISTICS:**

*“Consolidation centres require the interaction of town planners, CEP service providers and customers. Every one of them would have to surrender a piece of their sovereignty. None of the players integrated have so far been fully prepared to take such a far-reaching step. But as the need for action becomes more urgent, the pressure to implement it is growing. So it is by all means conceivable that we will see the emergence of such ‘white label hubs’ within the next five years.*”

*In a way, these would represent multi-tenant facilities. However, it would not be very novel, because this is exactly how e-fulfilment properties, e. g. those of Amazon or docdata, operate already. They also represent ‘multi-party’ logistics centres, where each sub-tenant is assigned a certain section in the warehouse. The sub-tenants get to take advantage of services Amazon offers in the e-fulfilment area. This eliminates the need for the service recipients to owner-occupy their properties. Since providers of e-fulfilment services operate entire networks of large to very large sites spread across Europe, they are in a position to offer a uniform service level at attractive rates. It is safe to assume that 10 years from now a mere 20 companies will cover around 90% of this market.”*



*“The shift in warehouse construction is well under way and continuing steadily. In the process, standards keep being reviewed, and sometimes lead to new approaches that in some cases can by all means be of highly innovative character. But that is not to suggest that the shift will be disruptive. The majority of future logistics warehouses will strongly resemble today's specimen.”*

ALEXANDER MAI, DREES & SOMMER

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# CONTACT AND CREDITS

## SYNDICATE PARTNERS

### **Berlin Hyp AG**

Carla Seidel  
Budapester Straße 1  
10787 Berlin, Germany  
Phone: +49 30 25 99-91 64  
Mail: carla.seidel@berlinhyp.de

### **BREMER AG**

Michael Dufhues  
Grüner Weg 28-48  
33098 Paderborn, Germany  
Phone: +49 52 51 770-0  
Mail: m.dufhues@bremerbau.de

### **bulwiengesa AG**

Tobias Kassner  
Wallstraße 61  
10179 Berlin, Germany  
Phone: +49 30 27 87 68-23  
Mail: kassner@bulwiengesa.de

### **Goodman Group**

Christof Prange  
Peter-Müller-Straße 10  
40468 Düsseldorf, Germany  
Phone: + 49 211 49 98-0  
Mail: christof.prange@goodman.com

### **Savills Immobilien Beratungs-GmbH**

Ingo Spangenberg  
Hardenbergstraße 27  
10623 Berlin, Germany  
Phone: +49 30 72 61 65-165  
Mail: ispangenberg@savills.de

## SCIENTIFIC PROCESSING, DATA HANDLING, AND EDITING

### PROJECT MANAGEMENT

Tobias Kassner  
Phone: +49 30 27 87 68-23  
Mail: kassner@bulwiengesa.de

### PROJECT ASSISTANCE

Marcel Schwerin  
Julian Truxa

## CONCEPT & DESIGN

### **elevenfifteen GmbH**

Melanie Bromeis  
Magdalenenstraße 54  
20148 Hamburg, Germany  
Mail: hallo@elevenfifteen.de  
elevenfifteen.de

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