

Marketing Material*

November 2019 / Research Report

LAST HOUR LOGISTICS

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Last Hour Logistics

The demand for urban logistics facilities is unabating as occupiers reconfigure supply chains to meet fast delivery. But increasingly to deliver on the promise of fast delivery, it's not the distance that matters but more so the time; a concept we have coined the "Last Hour". But where should occupiers locate, particularly in a context where rents are accelerating and supply is limited, and where should investors focus? Our analysis, conducted jointly with the location and customer analytics specialist, CACI, has sought to map the locations with the highest online spend potential in the United Kingdom and Germany within a 60 minute drive time. We have overlayed this with analysis on rents and land values to unearth those locations where occupiers can find relative value and where investors could well benefit from potential rental outperformance.

The ugly duckling of real estate

For years the logistics sector was the ugly duckling of real estate. A vital part of the economy, logistics rarely elicited excitement. A cog in the machine, a necessary but dreary part of the supply chain, logistics dwelled deep in the shadow of the glamorous worlds of retail and office. The performance of the real estate was equally uninspiring. Solid income but easily replicable. High yielding but with little rental growth. Rarely underperforming, rarely outperforming. Today the ugly duckling has become a beautiful and powerful swan.

Logistics is now the darling of the industry. For the past five years, the performance, and perhaps more importantly, the perception of the sector has been transformed. While certainly not the sole reason, the catalyst for this is clear; the growth of e-commerce. This change is clearly evident in the investment market. Today industrial and logistics properties account for close to a fifth of all Europe commercial transactions, up from around 12% at the start of the decade.¹ With this, yields have fallen and performance has surged. According to INREV, European logistics has far outperformed the market average over the past five years, recording annual fund level returns of close to 15%, well in advance of office and retail, and even outperforming the highly favoured residential sector.²

Outperformance but not everywhere

Over the coming years we continue to expect the logistics sector to be one of the top performing parts of the European real estate market. However, the double-digit returns experienced over the past five years are unlikely to be sustained. With less room for further yield compression, we expect performance to be driven by occupier fundamentals rather than capital markets – opening up scope for greater divergence in performance between the most and least sought after locations.

Indeed, over the past few years we have already seen this divergence, with urban locations substantially outperforming the market average.

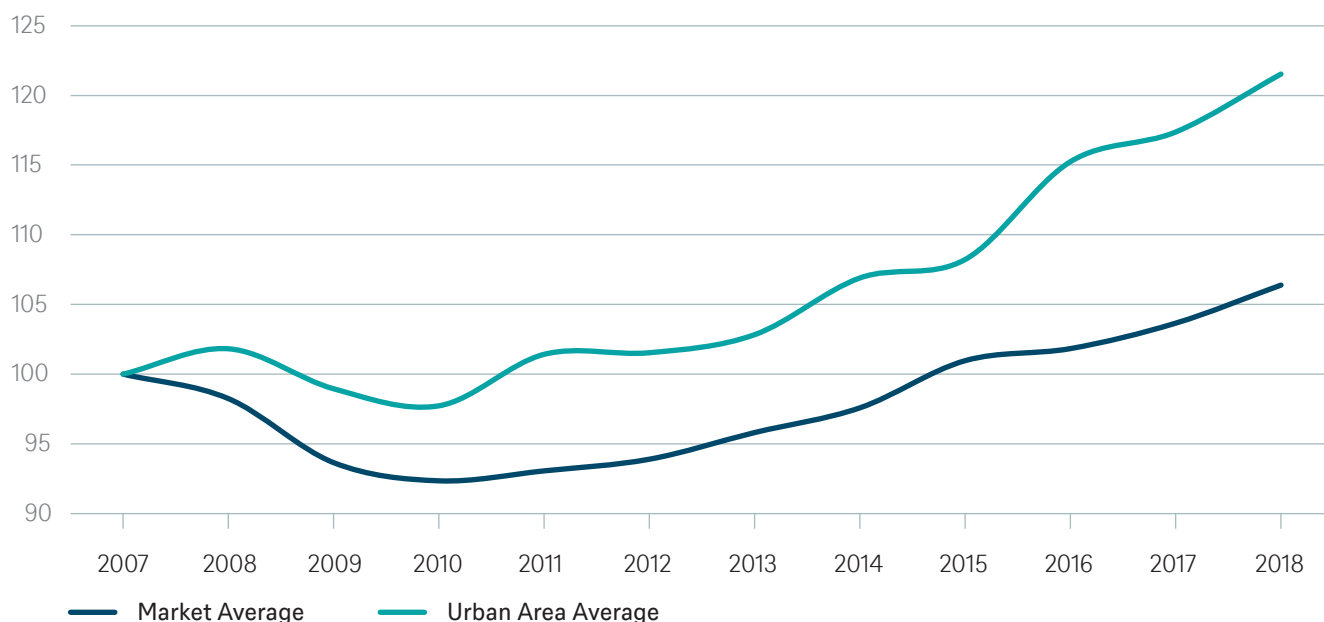
We're also conscious that the risk of oversupply remains a persistent threat for the sector. Strong demand and low levels of development have substantially reduced logistics vacancy in recent years. However this does not take away from the fact that in many cases logistics facilities can be built quickly, at relatively low cost and in places fairly free from land constraints.

Not only are returns likely to moderate, the outperformance of the sector certainly cannot be guaranteed over the

¹ Real Capital Analytics, August 2019

² INREV, June 2019

RENTAL GROWTH INDEX (2007 = 100)



Source: DWS, PMA, July 2019.

Note: Based on Antwerp, Brussels, Lyon, Paris, Berlin, Dusseldorf, Frankfurt, Hamburg, Munich, Warsaw, Birmingham, London, Manchester

long-run, and indeed in certain locations there will almost certainly be underperformance. Despite this, the segment is benefitting from structural drivers, compensating for cyclical factors which should sustain long-term performance. Nonetheless it is therefore important that we understand the factors driving the future location decisions of logistics occupiers.

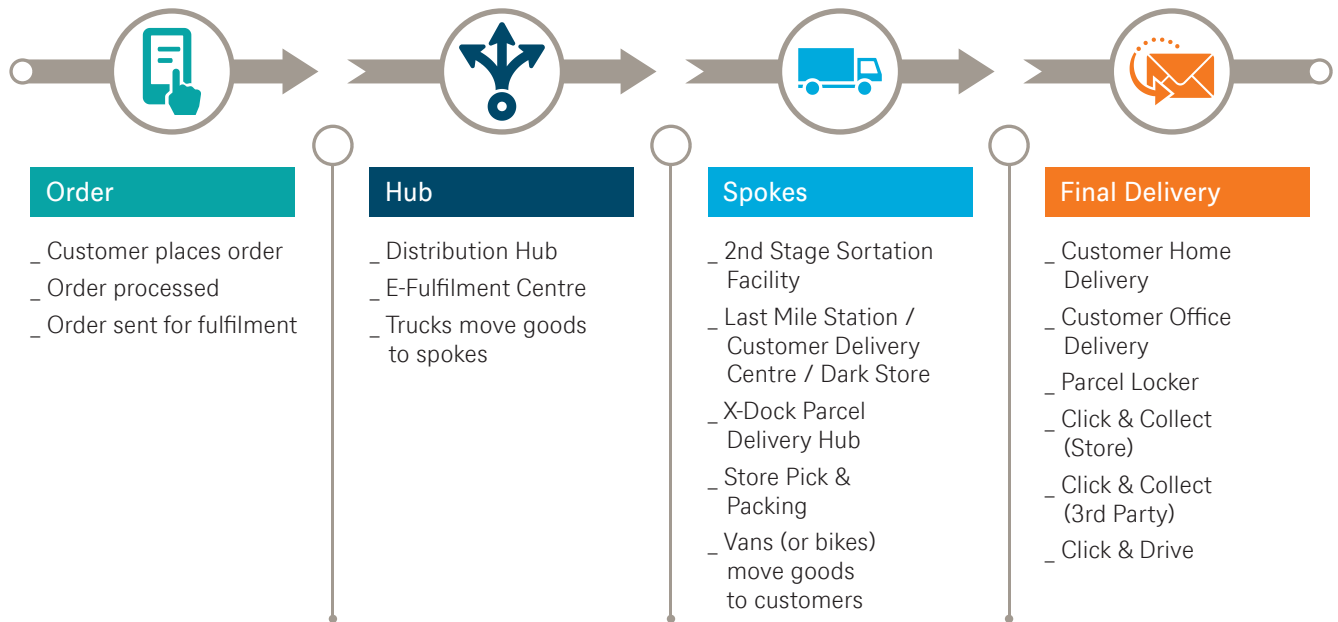
Changing consumer expectations

Consumer preference is the bedrock of the logistics sector. Whether it be fulfilling retailer store networks, or delivering direct to home, the way people shop has a huge bearing upon the location decisions of logistics operators.

Over the past decades the way people shop has been transformed by the growth of e-commerce, with almost a fifth of all U.K. retail sales now going online. Not only has this been driven by competitive pricing, the convenience of online shopping is a key component of this growth. This desired convenience is increasingly manifest in an expectation of same and next day delivery. A trend which survey evidence suggests will only intensify.

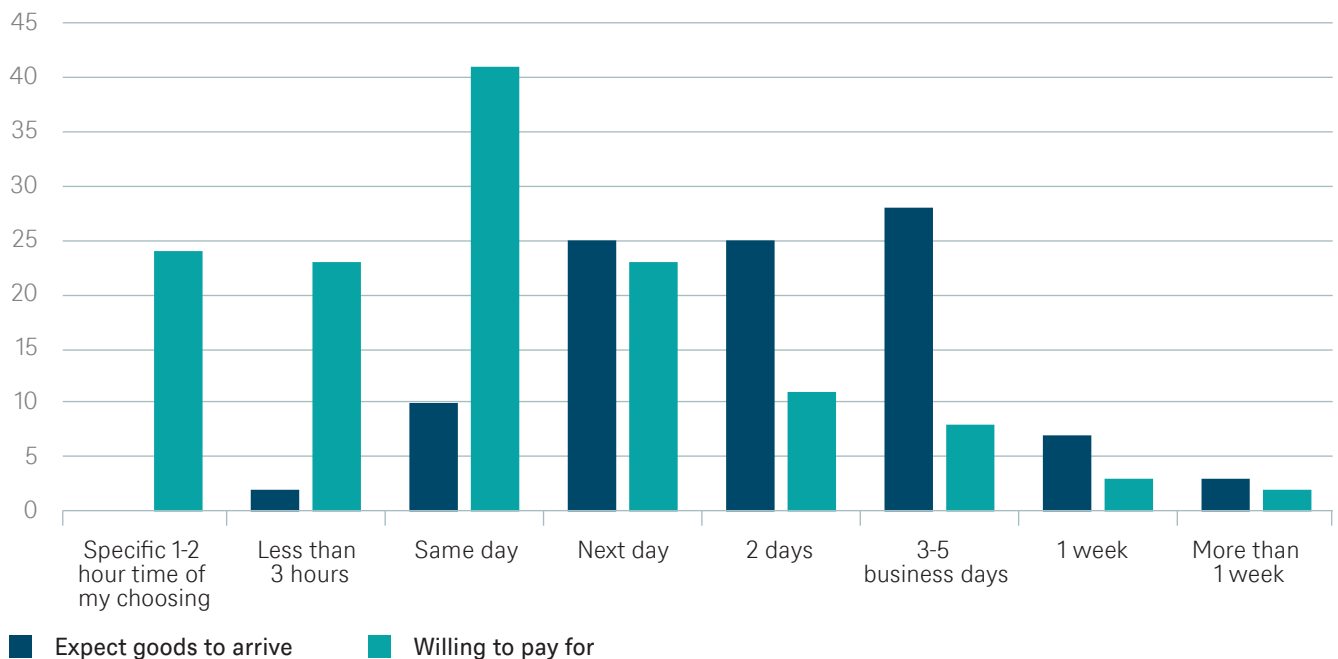
Some retailers, particularly the largest pure play online retailers, are already responding to the challenge of faster delivery. They are reconfiguring supply chains, opening new urban logistics facilities while also trialling multiple points of delivery including click & collect, parcel lockers and home / out-of-home deliveries.

THE ONLINE DELIVERY JOURNEY



Source this as DWS, October 2019

DELIVERY PREFERENCES, GLOBAL SURVEY %



Source: PWC Global Insights Survey, 2018

Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not a reliable indicator of future returns.

The cost to serve

Meeting this demand for faster delivery is challenging and costly – particularly for smaller retailers, e-commerce companies and parcel operators. Operators must find a balance between maximising the number of potential customers with the cost of serving their needs. In almost all cases, the bulk of these costs are fuel and labour, with real estate rents tending to be only a small fraction of the total.

While thin operating margins are likely to present an impediment to strong rental growth, there is clear evidence that operators will pay a significant premium for locations that significantly reduce overall costs – particularly fuel costs. As of today, this would suggest that shorter travel distance to the maximum number of customers should be a key determinant of location decisions.

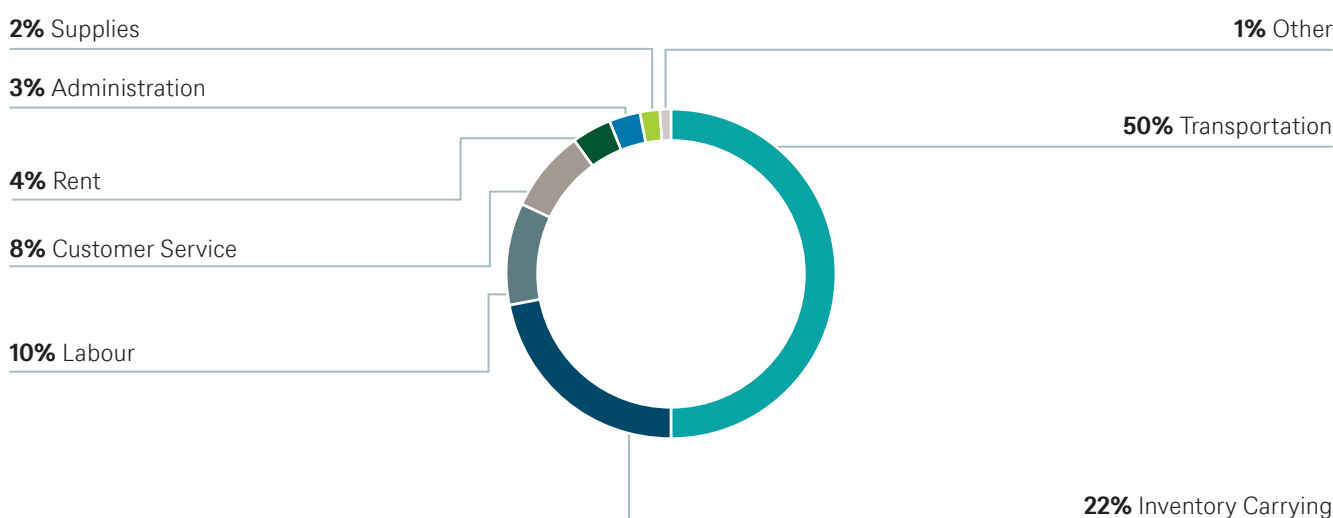
a logistics facility should help to lower labour costs, reducing the need to be located close to large pools of low cost employees, perhaps the bigger change will be within the vehicles. For example, electric vehicle fuel costs are estimated to be 75% cheaper than the current petrol equivalent.³ We expect these cost savings to have a material impact on the location of logistics operations.

Lower fuel costs and eventually autonomous vehicles may open up more peripheral fulfilment locations. However, on balance we expect the bigger impact will be on urban locations, enabling logistics operators to both pay higher rents and to fulfil home delivery ever more quickly.

Changing technology

Looking forward we expect that technological improvements to automation and electric vehicles will alter the balance of costs for logistics operators. While automation within

BREAKDOWN OF LOGISTICS COSTS, %



Source: Establish, Inc/HWD, Grubb & Ellis Global Logistics, Cushman & Wakefield, January 2019

³ British Gas, September 2018

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Last Mile to Last Hour

Growing online sales, changing consumer expectations and the support of technology should see urban logistics facilities sustaining increased demand for the foreseeable future.

But not all urban locations are the same, and where these facilities are located is important. While retailers and logistics operators have struggled with the Last Mile of fulfilment, we expect focus to shift from delivery distance to delivery time. From the “Last Mile” to the “Last Hour”.

We expect this shift to benefit three types of “Last Hour” locations:

- 1 Last Hour Multi-Nodal:** Well-connected hubs or microlocations with good motorway or arterial road accessibility enabling access to a wide catchment servicing a number of towns and cities across a dense urban region such as the North West of the U.K. or the Rhine Ruhr.
- 2 Last Hour Metropolitan:** Locations predominantly serving a wide catchment across a large metropolitan area but typically sit outside the urban area albeit still enable users to reach large populations within an hour drive time.
- 3 Last Hour Urban Infill:** These are locations which enable fast home delivery but sit within urban areas, often inside the outer ring roads and are competing with alternative land uses such as residential.

It is therefore important that we find a methodology to appraise geographical locations, particularly the number of online consumers that can be served over a short period of time. While we have explored this in previous papers, presenting examples such as Warrington in the North West of England, these were based on our knowledge of the market but were not backed up by quantitative analysis.

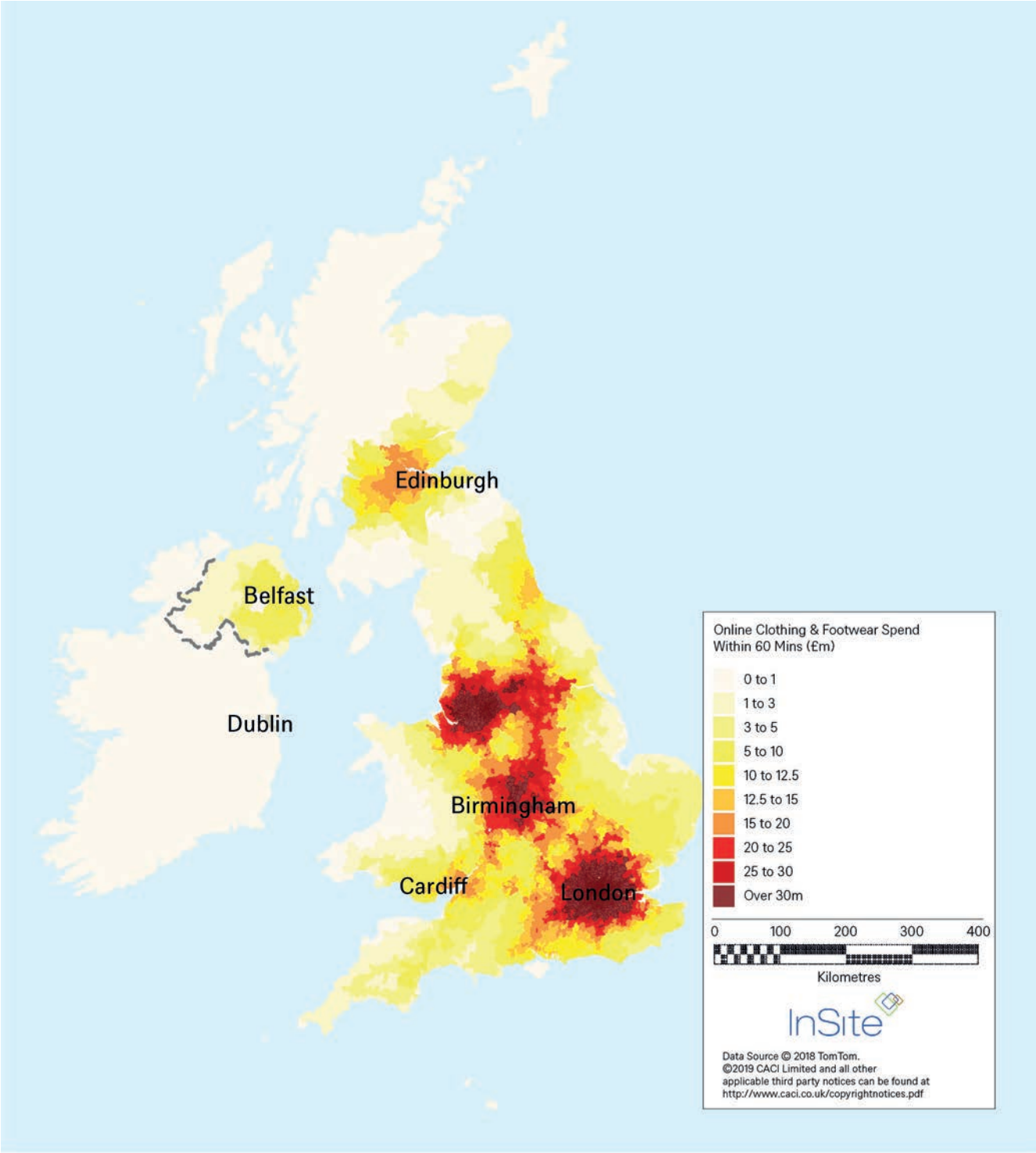
To improve upon this DWS has worked closely alongside location and data specialist, CACI. With their extensive experience in location planning and customer analytics, CACI fully mapped the level of online spend within a one hour drive time from any postcode location in the United Kingdom and Germany.

This sort of analysis is commonplace in the retail sector, with most large retail schemes undertaking a catchment analysis to understand the level of potential customer spend. This study can be considered to be a reverse catchment analysis. Rather than customer sales available to a shopping centre, here we are showing the amount of online customer spend that could be delivered to within a one hour journey time from a logistics location.

Source: CACI, DWS, August 2019

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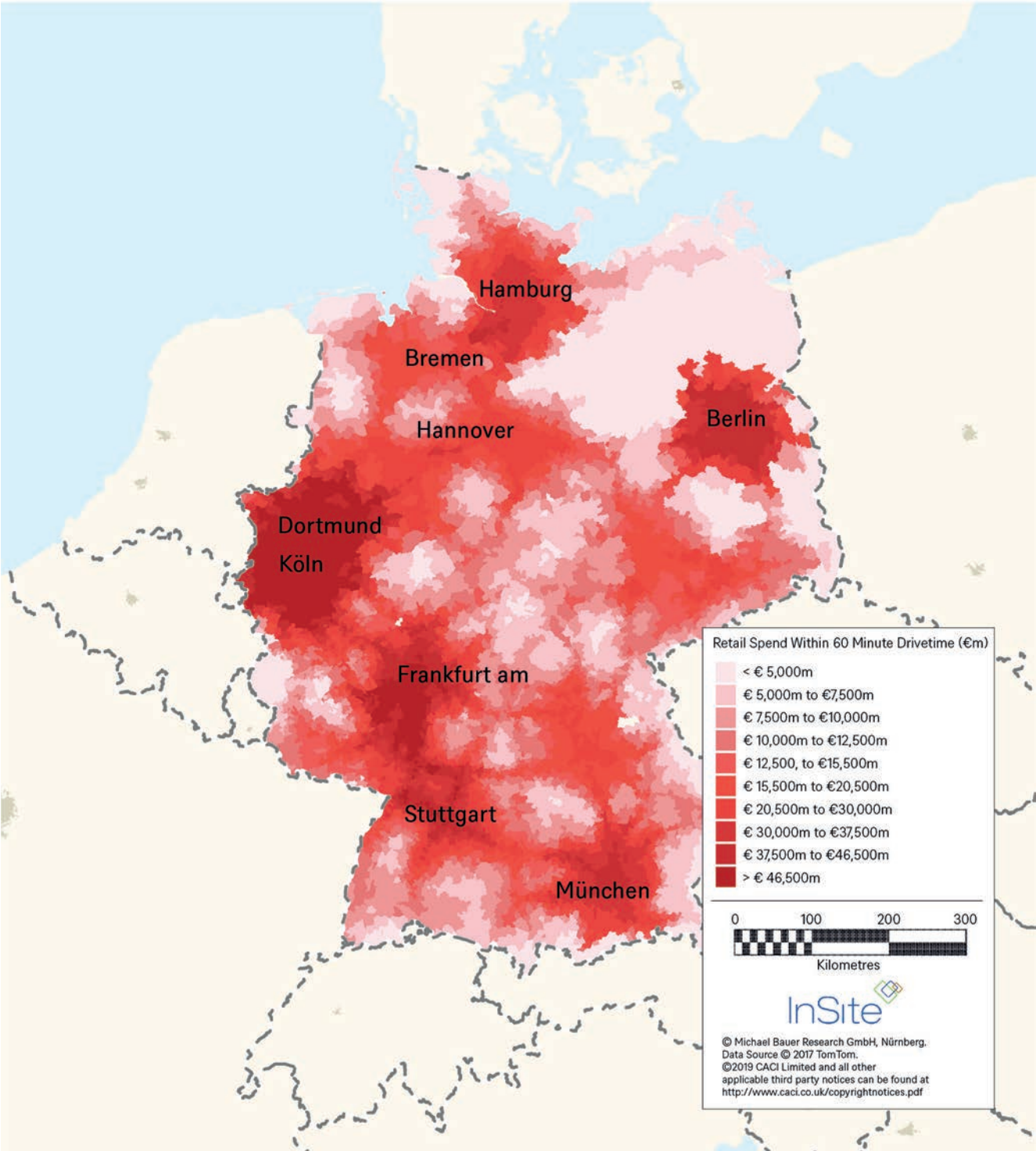
MAP OF ONLINE CATCHMENT SPEND WITHIN 60 MINUTE DRIVE TIME, UNITED KINGDOM



Source: CACI, DWS, August 2019

Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not a reliable indicator of future returns.

MAP OF ONLINE CATCHMENT SPEND WITHIN 60 MINUTE DRIVE TIME, GERMANY



Source: CACI, DWS, August 2019

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The results were far better than we expected. Many of the postcode locations with the highest online spend potential (excluding Central London where there is little availability of industrial and logistics sites) stood broadly on existing industrial and logistics sites.

Regional Spend

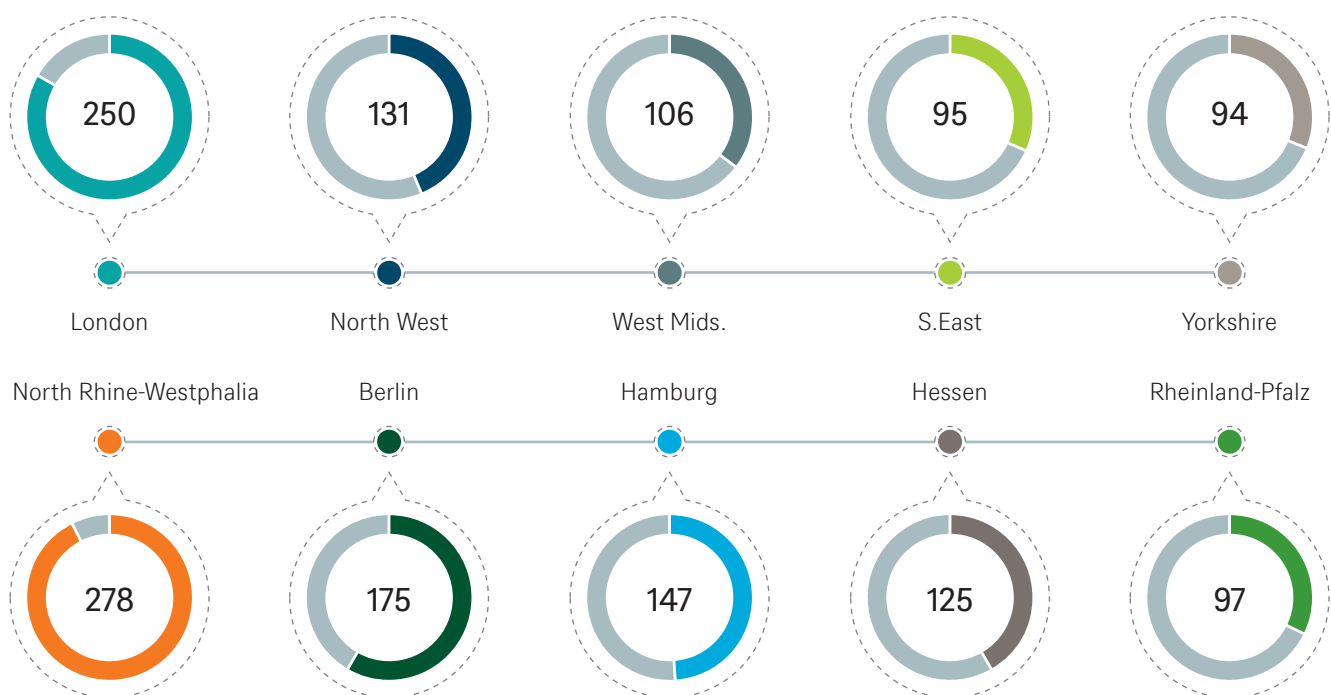
Perhaps unsurprisingly, one hour access to online spend in the United Kingdom was on average highest in London. But also the densely populated regions of the Midlands and the North West, typically characterised by the proximity of a number of small to medium sized towns and cities anchored by a large regional city to each other, also see strong potential for online retailing.

In the more polycentric German market, the North Rhine-Westphalia region stands out. Average access to online spend throughout the state is almost three times the national average. This is particularly the case in the large urban agglomeration to the west of the state, characterised by a number of cities such as Cologne and Dusseldorf in close proximity to each other. Beyond North Rhine-Westphalia, the Federal states of Berlin, Hamburg and Hessen also see average access to online sales in advance of the national average.

However in both countries these regional averages hide a huge amount of detail. Within almost every U.K. region and German federal state there are locations with one hour access to spend that is well in excess of the national average, and locations with access to almost no spend.

AVERAGE ONLINE SPEND WITHIN A ONE HOUR DRIVE TIME INDEX (100 = National Average)

Out of 300



Source: CACI, DWS, August 2019

Note: Average across postcode areas within the region / federal state

These ranges are highlighted in the chart below.

RANGE OF ONLINE SPEND WITHIN A ONE HOUR DRIVE TIME INDEX (100 = National Average)

London	S.East	East	N.West	W.Mids
292	260	247	209	181
174	4	6	3	6
250	95	88	131	106
Westminster	Uxbridge	Waltham Abbey	Denton	Sutton Coldfield

North Rhine-Westphalia	Hessen	Baden-Württemberg	Rheinland-Pfalz	Bayern
464	269	266	253	205
15	17	9	5	4
278	125	91	97	68
Dusseldorf	Zwingenberg	Ladenburg	Mainz	Stockstadt

■ Max
■ Min
■ Average

Source: CACI, DWS, August 2019

Note: Average across postcode areas within the region / federal state

Again on this basis, the dominance of London is clear. Not one postcode area within the capital has access to spend which is less than 75% above the national average.

In the regions bordering the capital, despite access to spend close to the national average, places such as Uxbridge in the South East and Waltham Abbey in the East of England are also in line with the London average.

The relatively small range between London postcodes is also important. With only a 20% difference between the maximum and the average level of spend, this suggests that there could be room for a greater rental convergence across the capital.

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Beyond London we also find locations with very high levels of spend. Denton to the east of Manchester, Leicester, Sutton Coldfield and Huddersfield are all locations where spend is between 75% and 100% above the national average.

In Germany, the importance of North Rhine-Westphalia is again clear to see. However, unlike London, the federal state has a much greater range across postcode areas. Dusseldorf sits at the top of the hierarchy, with Hassels in the south east of the city the postcode area recording access to online spend almost five times the national average. However, we also see similar levels of access from Dortmund over to Duisburg, and then all the way down to Cologne.

On one hand while this suggests huge potential demand for fulfilment centres in the area, it also highlights potential supply risk given the relatively large number of locations, including less densely built areas, which could service the agglomeration. In the other federal states, the location with the greatest access to online spend tends to be situated close to one of the big cities, although in Hessen and Baden-Württemberg, the area south of Frankfurt and north of Stuttgart looks well situated to serve both metropolitan areas.

National Coverage

The next stage of the analysis was to determine the number of these Last Hour facilities required in order to capture differing levels of national spend.

Not only would this analysis help with portfolio optimisation, with the vast majority of retailers looking to service customers nationwide, it was important to see whether meeting Last Hour expectations would be prohibitive.

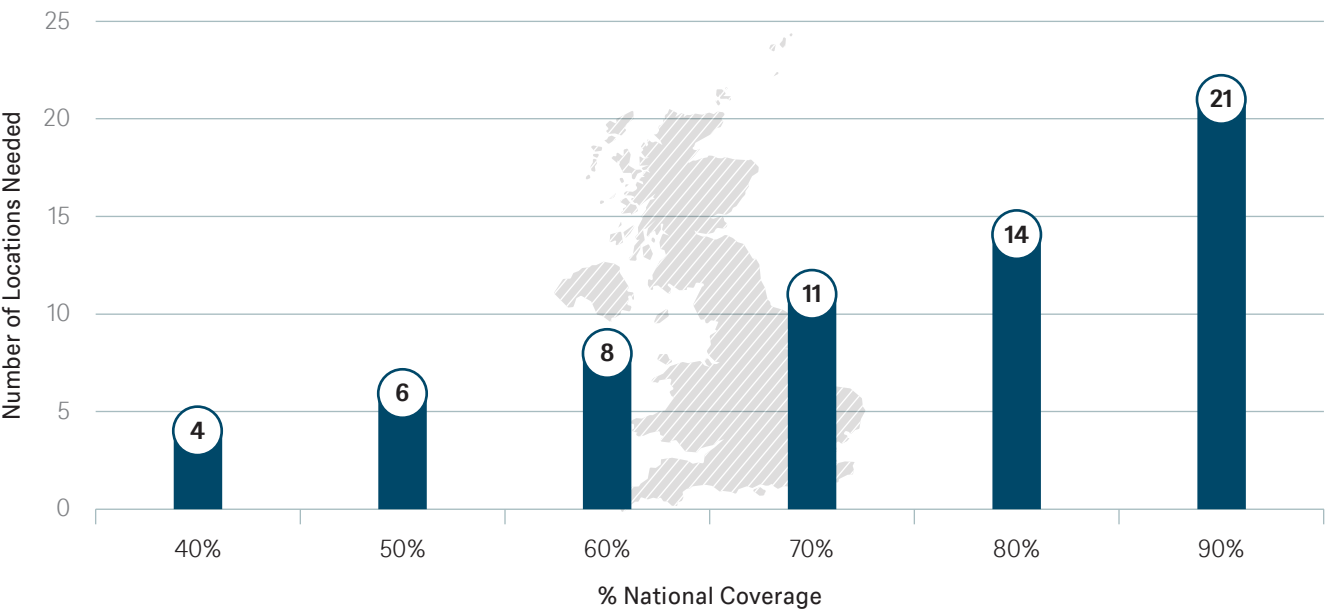
CACI found that in order to be within an hour drive time of half of all online sales, a logistics operator would require six facilities in the United Kingdom and seven in Germany.

Perhaps unsurprisingly the next 40% of sales is more difficult. To capture 90% of online spend within an hour drive time, logistics operators would on average need to be in 21 markets in the United Kingdom and 19 locations in Germany.

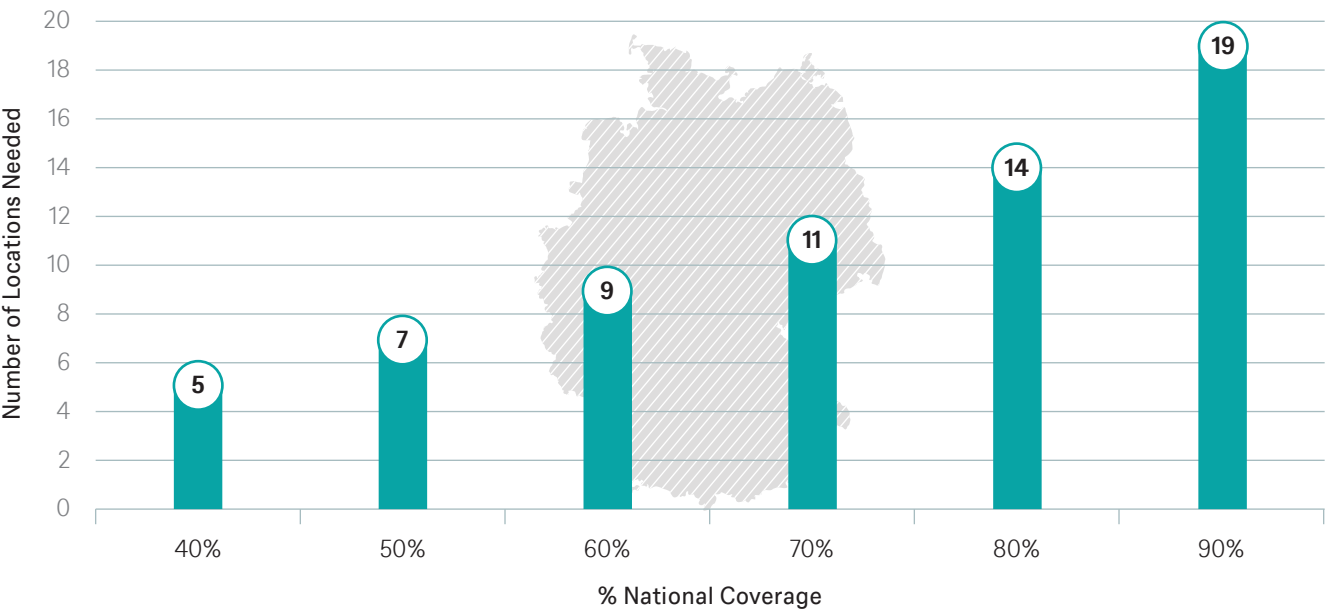
While a relatively large number of locations, on the face of it this number does not look prohibitive for the likes of the big third party logistics operators.

NUMBER OF LOCATIONS REQUIRED TO GAIN COVERAGE

United Kingdom



Germany



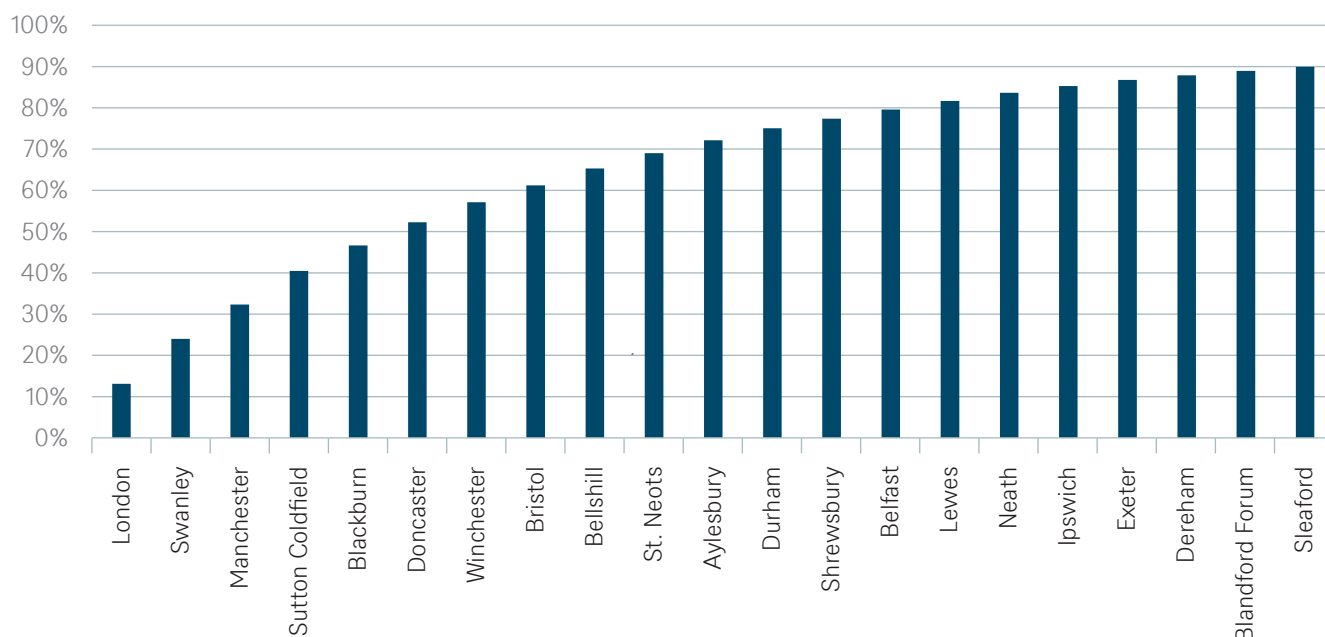
Source: CACI, DWS, August 2019

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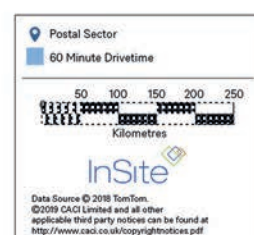
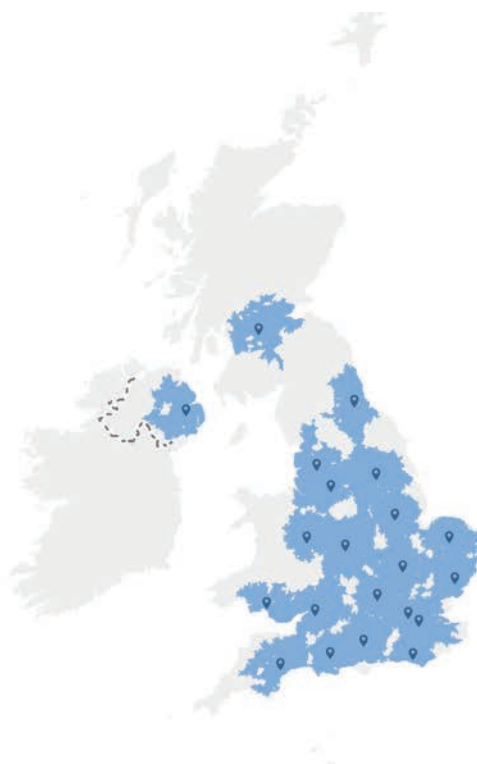
This approach can assist both tenant business strategies in addition to site selection, and below we outline an example of where these locations are in the United Kingdom and Germany.

WHERE ARE THE LOCATIONS IN THE UK?

Cumulative Access to UK Online Spend Within an Hour



90% of spend covered
from 21 locations

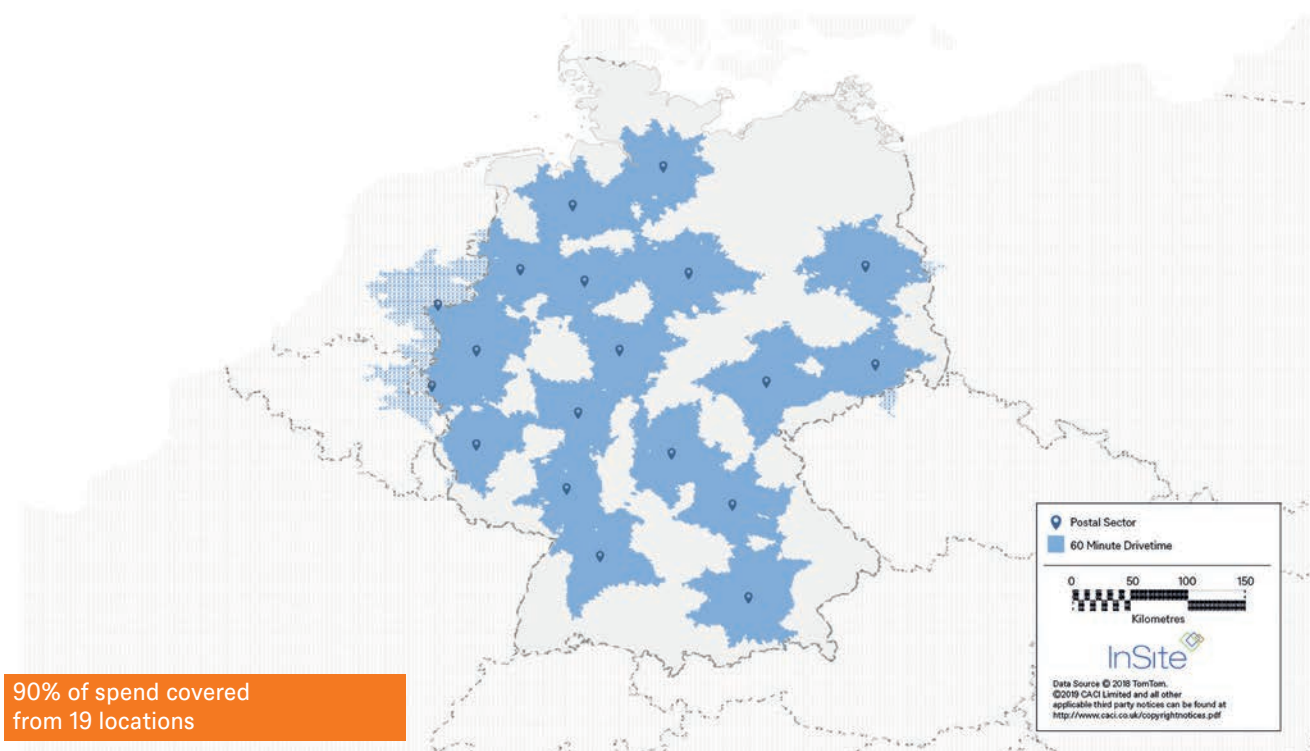
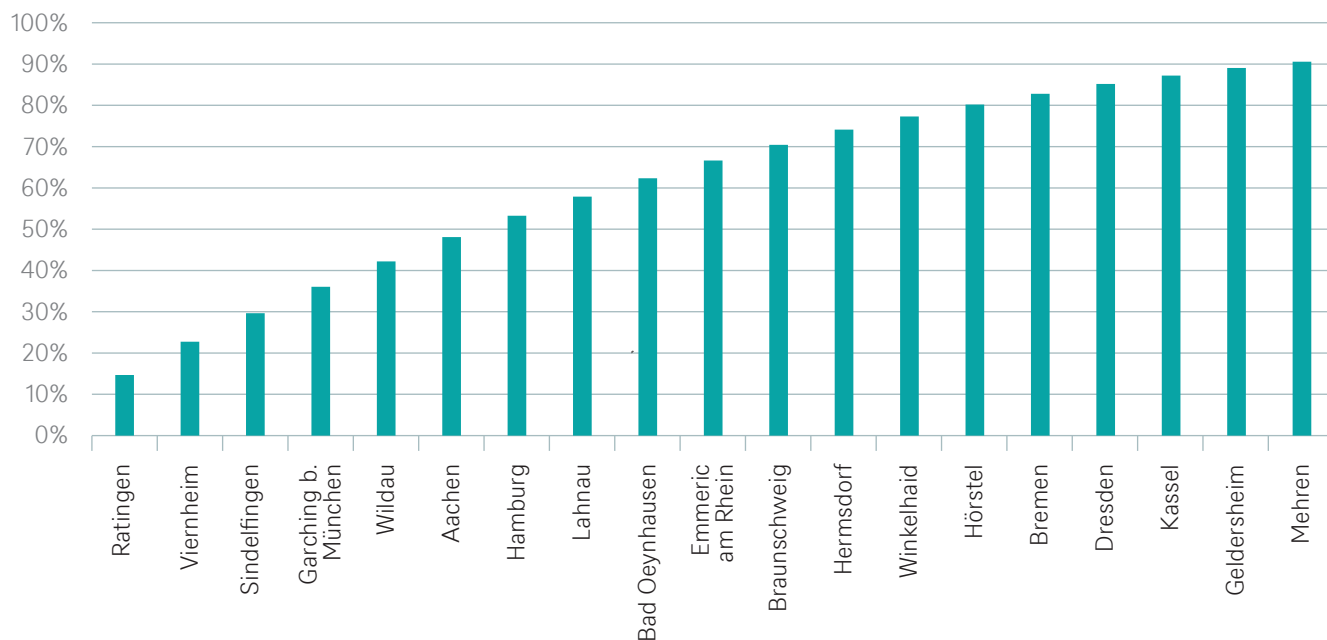


Source: CACI, DWS, August 2019

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WHERE ARE THE LOCATIONS IN GERMANY?

Cumulative Access to German Online Spend Within an Hour



Source: CACI, DWS, August 2019

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Relationship with rents

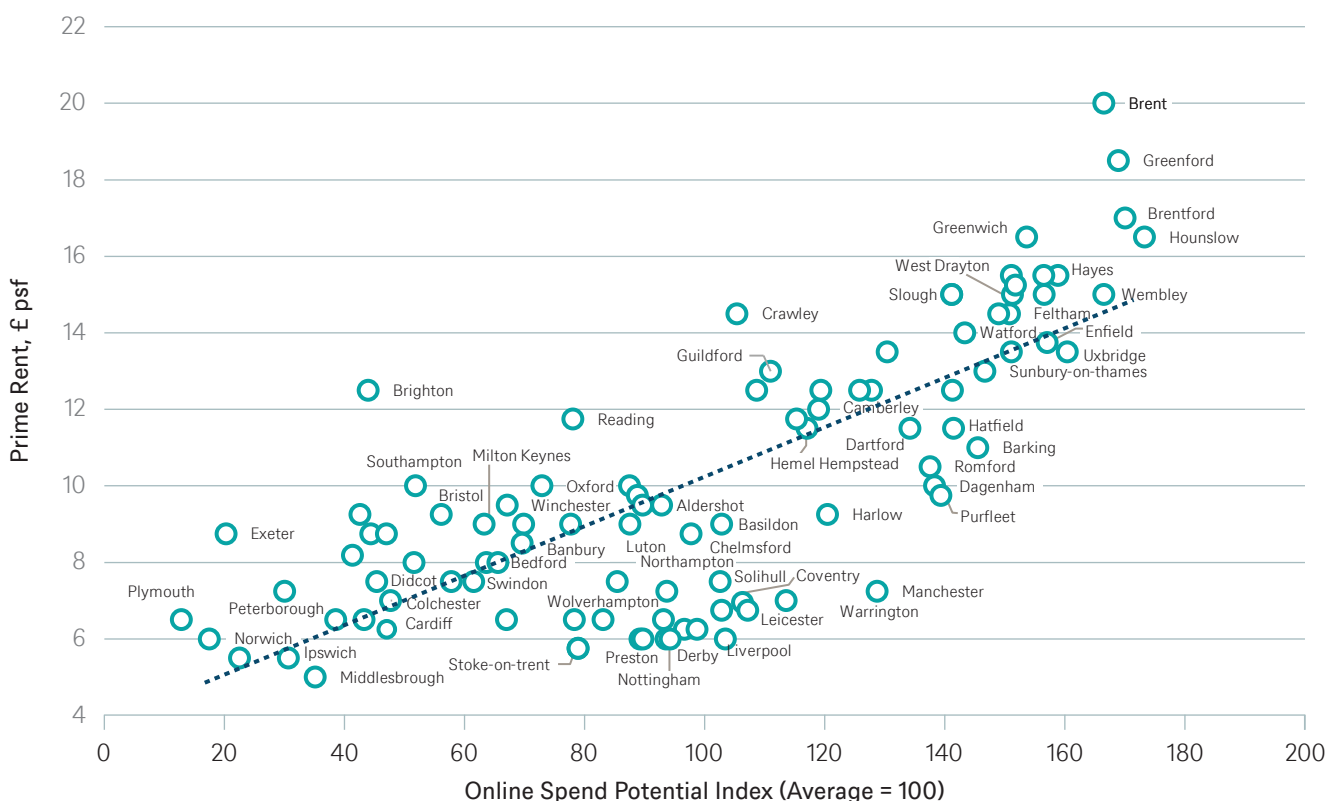
While identifying spend was an interesting exercise, land and rental values in some of the largest catchment areas are likely to be prohibitively high for the vast majority of occupiers. In addition, in places such as London's Westminster, where land value are in excess of £1,000 per square foot, there is almost no discernible stock of sufficient scale and size for institutional investors. In these instances, this catchment analysis has less of a practical application.

It is therefore important to cross-check the estimated level of online spend with current rental levels. We did this across 97 established logistics markets in the United Kingdom and 127 in Germany.

This approach helped us to identify locations with both relatively high access to online spend and lower occupational costs. This information is important to both occupiers looking to optimise their supply chain and investors seeking out locations with the potential for higher than average future demand and potential for rental growth.

Looking at the chart below there seems to be a fairly close relationship between online spend and prime industrial rents in the United Kingdom. However, we caution against drawing this conclusion. It's more likely that the alternative land use, particularly residential, is the dominant factor here. As such, the densely populated areas of London and the South East record both high levels of spend potential and high rents.

UK ONLINE SPEND INDEX (Average = 100) AND PRIME RENTS, £ PSF



Source: Colliers, CACI, DWS, August 2019

Note: Average across postcode areas within the region / federal state

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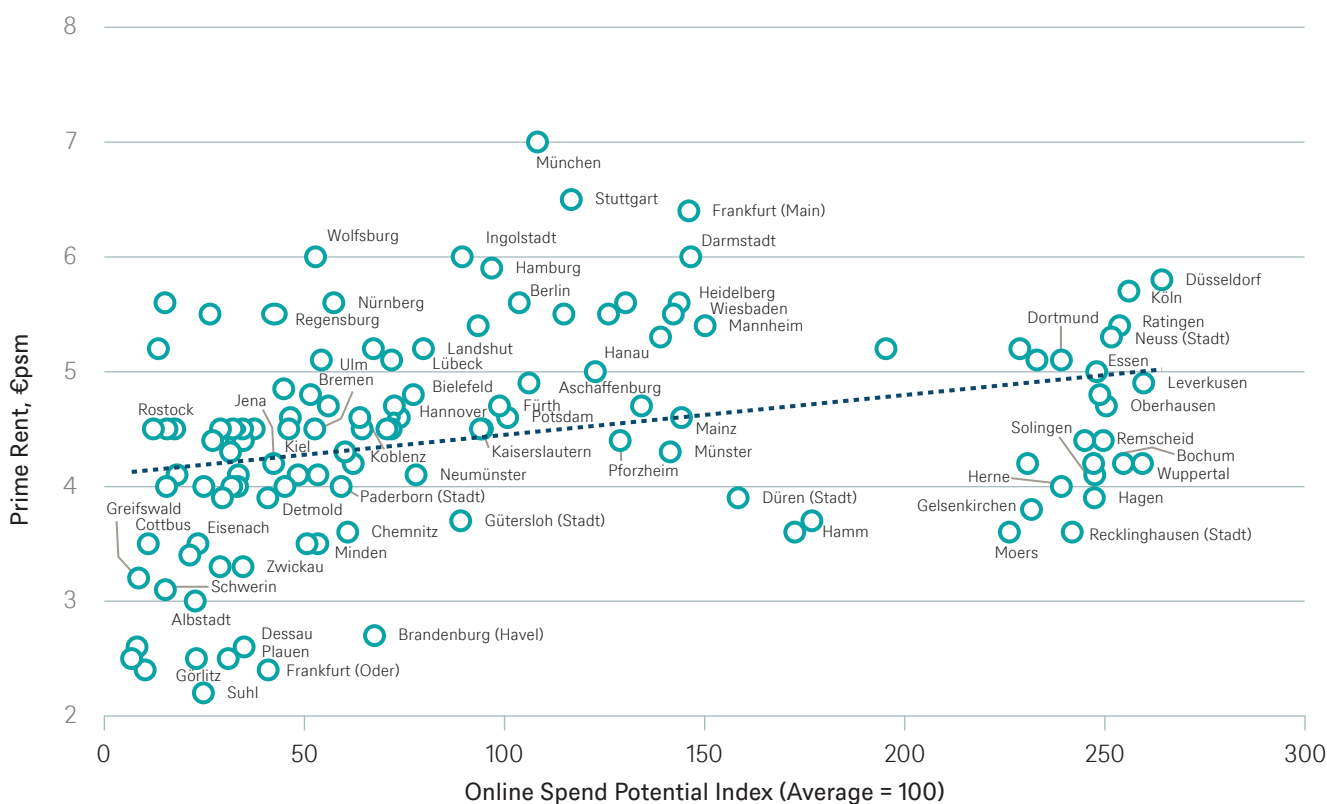
However, this does not take away from the fact that as online spend and demand for fast delivery continue to grow, those locations offering high levels of accessibility alongside more affordable rents should be relatively well positioned to benefit.

What becomes evident is that there are a number of locations in London and the South East, mainly concentrated in and around East London which look attractive on this measure. Furthermore, locations in the Midlands, the North West and Yorkshire also look relatively under-rented in comparison to their online spend potential.

In Germany the relationship between access to online spend and industrial rents is less clear. This perhaps reflects the polycentric structure of Germany in addition to exceptionally high road density and close proximity between cities in places such as North Rhine-Westphalia. What stands out is that parts of North Rhine-Westphalia, despite commanding an exceptionally high level of online spend potential, sees prime rents well below the €6 per square metre per month mark, while rents are well below in a number of locations in this region relative to the prime locations of Dusseldorf and Cologne.

In the rest of the country, there is perhaps a slightly stronger relationship between rents and spend potential but as we stated in the outset, the alternative land use factor here is likely to have more bearing in respect of rental variation.

GERMANY ONLINE SPEND POTENTIAL INDEX (Average = 100) AND PRIME RENTS, € PSM



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Implications for the London logistics market

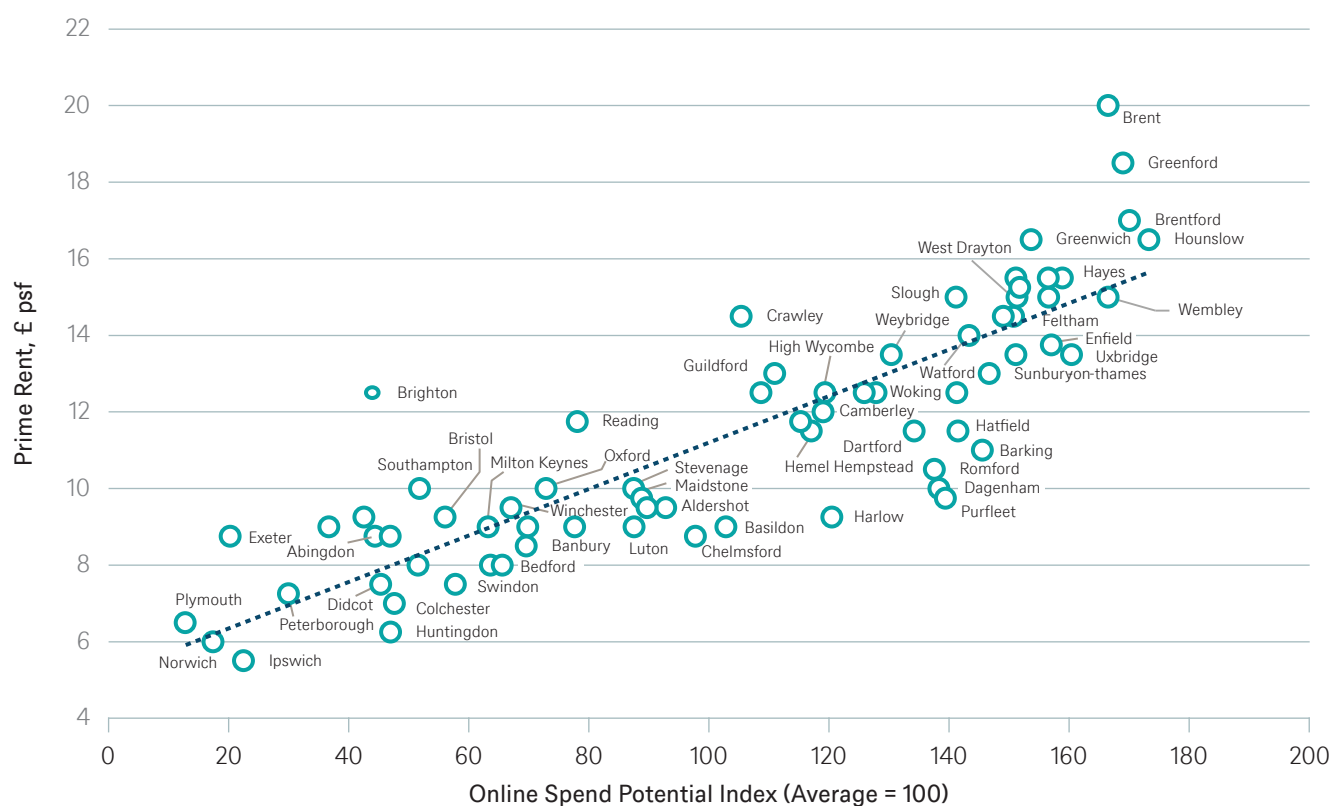
While Inner London commands some of the highest spend potential, there are very few opportunities here given higher residential land values. However there are some locations where industrial stock can still be found. Take for example the Bromley-by-Bow area in the London Borough of Tower Hamlets, one of the top locations in the country to capture online spending. Here, Sainsbury's operates a dark store while Amazon is undertaking last mile deliveries from its site in Prologis Park.

However most of the investible stock resides beyond Inner London. And based on our analysis, what strikes us is a clear East / West divide. As we see from the chart below, the message is quite clear in London and the South. Most of the

prime, recognisable locations sit in the West such as the likes of Park Royal and Greenford, with dense and well established logistics use and excellent road accessibility.

However there are a handful of locations in East London and the South East which provide both high levels of access to online spend within an hour drive time but with relatively lower prime rents.

ONLINE SPEND POTENTIAL INDEX (Average = 100) VS PRIME INDUSTRIAL RENT £PSF, LONDON & SOUTH



Source: Colliers, CACI, DWS, August 2019

Note f = Forecast. There is no guarantee the forecasts shown will materialise.

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The likes of Purfleet (where Ocado is reportedly in talks to sign on a 300,000 square feet pre-let at Segro Logistics Park Purfleet), Barking, Dartford, Romford and Dagenham look good value on this measure. For example in Barking access to online spend is just 10% below that of Park Royal, but prime rent levels are at a 45% discount. Similarly while spend potential is about 20% lower, prime rents are almost at half the level of Park Royal in the likes of Romford and Dagenham.

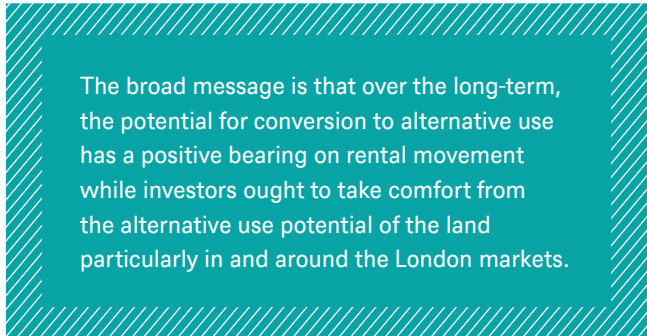
In these East London markets, it is unsurprising that we already see large occupiers, 3PLs, parcel delivery operators, retailers, grocers and pure-play retailers. For example in Barking, Amazon was ultimately unsuccessful in its pursuit to acquire Barking Power Station in order to build a four storey distribution centre. Further east, while perhaps not capturing the same degree of online spend, but still well above average, Basildon and Chelmsford also look good value with prime rents around the £9 per square foot mark.

The analysis also suggests that there are some under-priced established locations in North and West London where rents look good value. The likes of Uxbridge (which regionally sits in the South East) and Enfield capture a large spend potential that are not too dissimilar to nearby Greenford and Park Royal (3-5% below) but at a prime rent discount of 30% to this location.

Land constraints

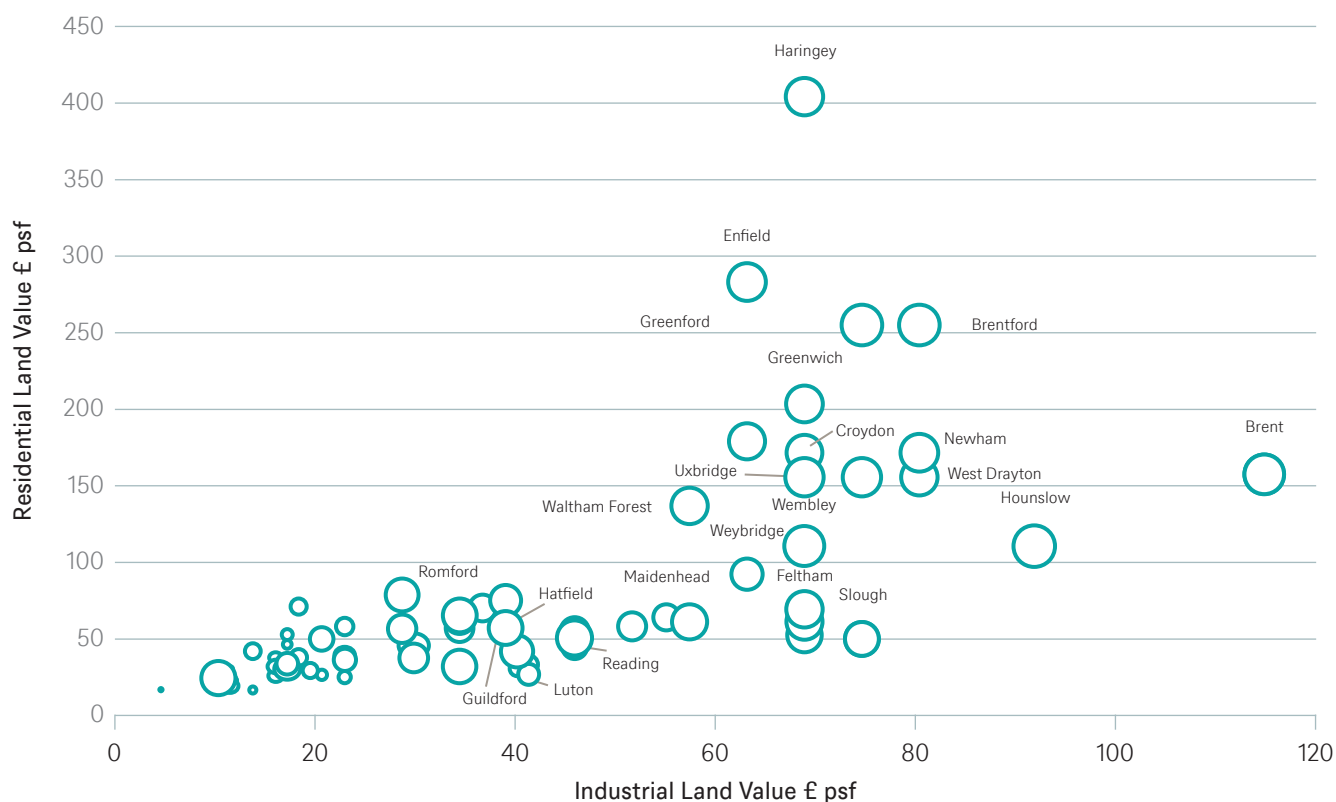
As we highlighted in our previous European Urban Logistics paper, most London boroughs have seen significant loss of industrial land in recent decades as the pressure from housing has led to a shrinking of industrial space. This reduction in stock and increased demand for urban industrial has propelled rental growth. And of course, some land values have grown faster in relatively more desirable locations from a house building and residential perspective, perhaps accounting for some of these significant rental differences between East and West London.

But increasingly we are seeing residential developments in former industrial sites in non-West London locations with schemes such as Barking Riverside and Meridian Water in Enfield. This is unsurprising as we see many instances in London where residential land values are significantly above industrial, particularly in locations closer to Central London or in the more affluent West London boroughs.



The broad message is that over the long-term, the potential for conversion to alternative use has a positive bearing on rental movement while investors ought to take comfort from the alternative use potential of the land particularly in and around the London markets.

INDUSTRIAL VS LAND VALUE £PSF



Size of the bubble represents online spend potential

Source: Colliers, VOA (end-17 figures), CACI, DWS, August 2019

Note: f = Forecast. There is no guarantee the forecasts shown will materialise.

Of course industrial rents are also pressured upwards by competition between multiple industrial space end-users such as trade counters and wholesalers, food producers, manufacturers and quasi-office / storage & archiving users.

The story for London is mainly an East-based one. Tenants can access high spend levels with relatively cheap rents from a number of East London locations. With vacancy tight in East London at 3.6%⁴, it is unsurprising that rent growth is accelerating across these markets. While we may see some moderation, we anticipate rent growth to still remain well above inflation going forward here.

Edge of London

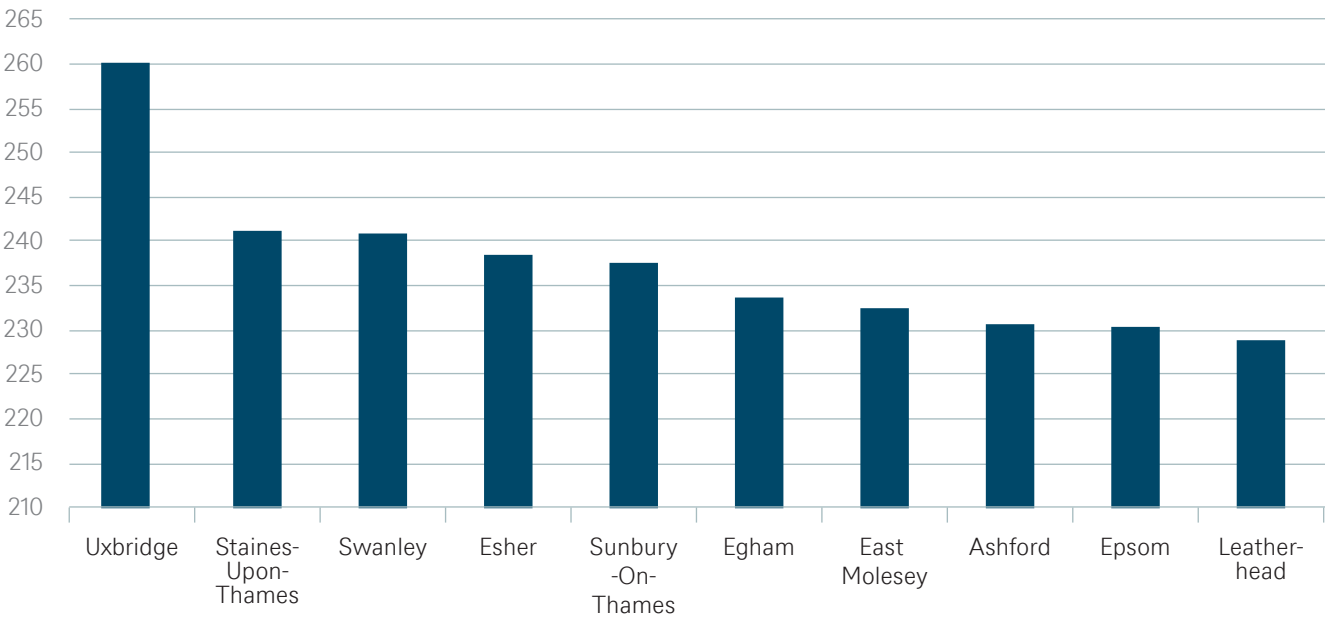
This lack of land is likely to push more logistics operators to the edge of the capital, and while greater access to land does increase the threat of future new supply for investors, some South East locations such as Aldershot, Harlow, Hatfield and Luton do look attractive as Last Hour Metropolitan locations.

In particular Hatfield stands out, where online spend potential is in line with the established Slough market but with prime rents which are 23% cheaper. Indeed, Ocado, the online grocer, and Yodel with a cross-docked parcel sortation facility are both located within the Hatfield Business Park.

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MAX ONLINE SPEND INDEX WITHIN 60 MINUTE DRIVE TIME, SOUTH EAST & EAST (National Average = 100)

South East



East



Source: CACI, DWS, August 2019

Note: f = Forecast. There is no guarantee the forecasts shown will materialise.

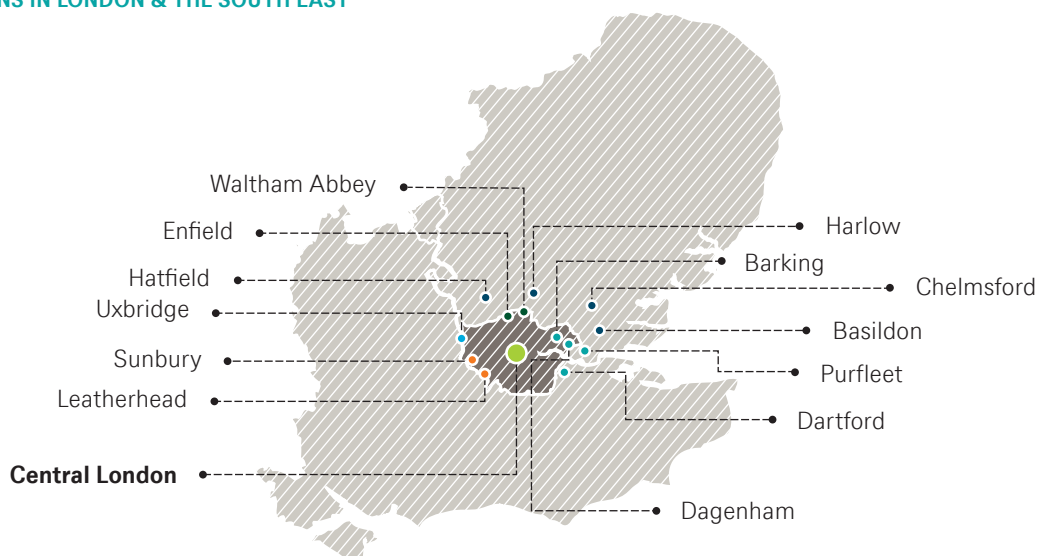
⁴ Gerald Eve, June 2019

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All in all, this analysis suggests that London and the surrounding areas are likely to present a large number of compelling investment opportunities.

Below we outline those markets where we see the greatest value and potential for rental growth.

TOP LOCATIONS IN LONDON & THE SOUTH EAST



Source: DWS, August 2019

Regional United Kingdom

Moving beyond London and its surrounding areas, this analysis also suggests that the likes of North West Birmingham, Greater Manchester, parts of Lancashire and West Yorkshire are well positioned to be multi-nodal Last Hour logistics locations.

Served by excellent road connections with a number of towns in close proximity to each other, we find high levels of online spend potential across the top locations in these markets.

In Manchester, while Trafford Park in the west would be considered the prime location, in fact it is the area to the east such as Denton and Ashton-under-Lyne which rank as locations with the most favourable online spend potential. The area here is an industrial hub. While most of the occupiers here are related to trade and industry, the likes of DPD, the parcel delivery operator, can be found at the Alliance Industrial Estate in Denton.

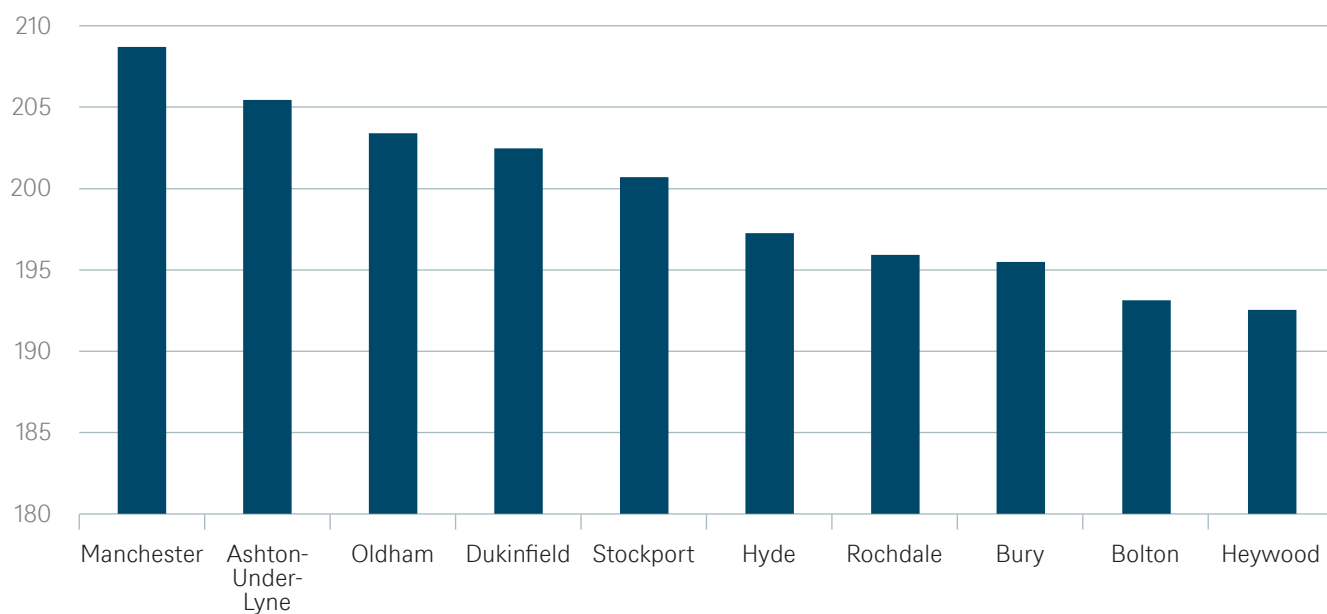
Bolton where the difference in terms of spend potential captured is only 7% below the top location in the North West, has seen the establishment of Logistics North where the likes of Amazon, Aldi and Whistl are located. While prime rents are similar, average rents in Bolton offer a 17% discount to that of Trafford Park.⁵

⁵ CoStar, August 2019

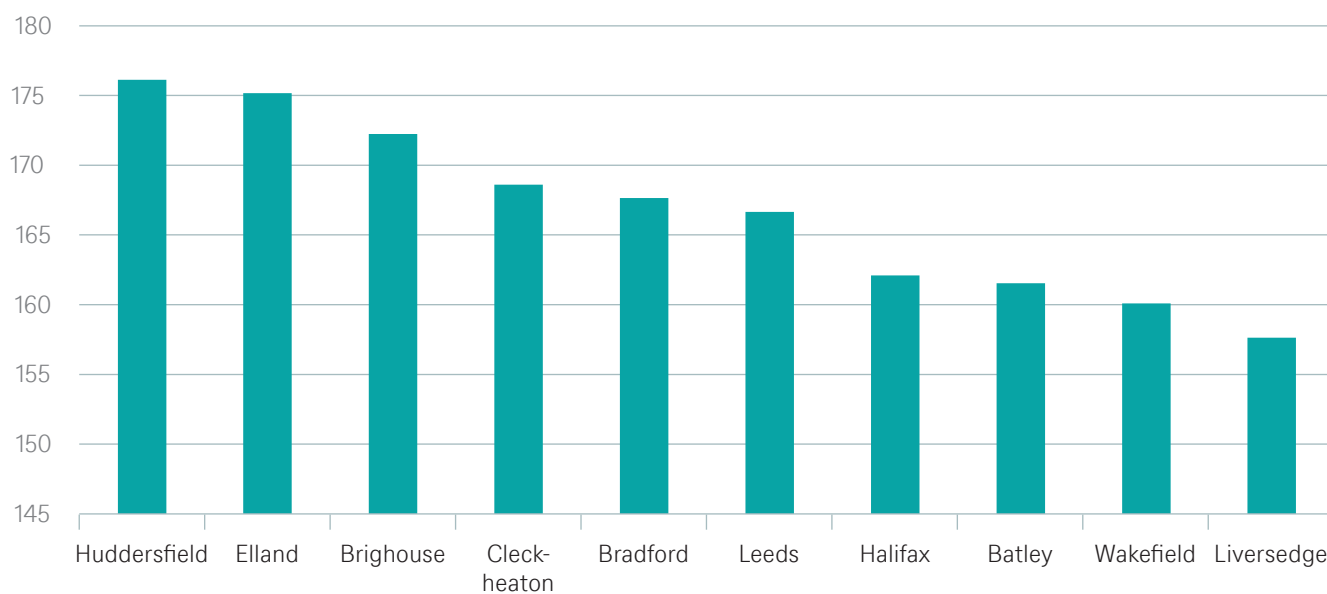
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MAX ONLINE SPEND INDEX WITHIN 60 MINUTE DRIVE TIME, NW & YORKSHIRE (National Average = 100)

North West



Yorkshire



Source: CACI, DWS, August 2019

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In Yorkshire, it was perhaps initially surprising that the postcode location to the north-west of Huddersfield has the highest one hour access to spend potential. However the location sits on the M62 within 15 minute drive to Huddersfield and Halifax and within 25 minute drive to Leeds and Bradford. Furthermore, Sheffield and Manchester can be reached within an hour. In nearby Brighouse, which also ranks highly we find Hallmarks Cards, Clipper Logistics and Pass the Parcel located within an industrial estate.

Furthermore, on this measure more online spend can be captured from the highest ranked location in Bradford than that in Leeds. What is interesting to note is that on an average rent basis, Bradford offers a 20% rental discount to Leeds while vacancy rates are also lower in Bradford at 1.6% relative to the 3.8% vacancy rate in Leeds.⁶

In the Midlands, the location with the highest spend potential is Sutton Coldfield where Prologis Business Park, a location from where the highest spend potential in the West Midlands can be accessed. This is followed by the Hams Hall National Distribution Park. Here the likes of DHL, Kuehne & Nagel, Europa Worldwide, Sainsbury's and The Works are located.

A similar picture emerges in the East Midlands. Ashby Park in Leicester stands as one of the highest rated locations enabling easy access into Derby, Nottingham, Leicester and the north East suburbs of Birmingham.

In Hinckley, the second highest online potential location in the East Midlands, a Tesco distribution centre and a DPD Crossdock facility is present. Furthermore, the likes of Nottingham, Northampton and Derby also stand out in terms of online spend potential.

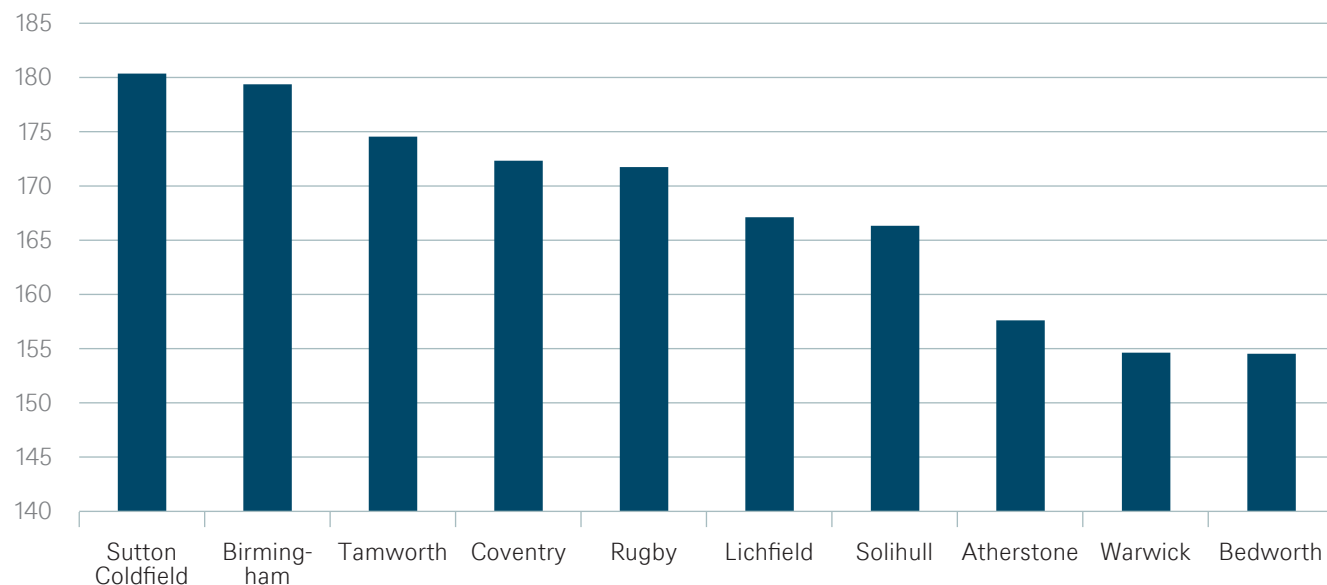
It is worth noting that while some of these top ten Midlands locations are considered national distribution locations, benefitting from excellent road accessibility, they are also suited for multi-nodal Last Hour logistics operations. Indeed this competitive tension between occupiers seeking these locations for Last Hour uses and occupiers requiring national distribution could well generate competitive tension and place pressure upwards on rents.

⁶ CoStar, August 2019

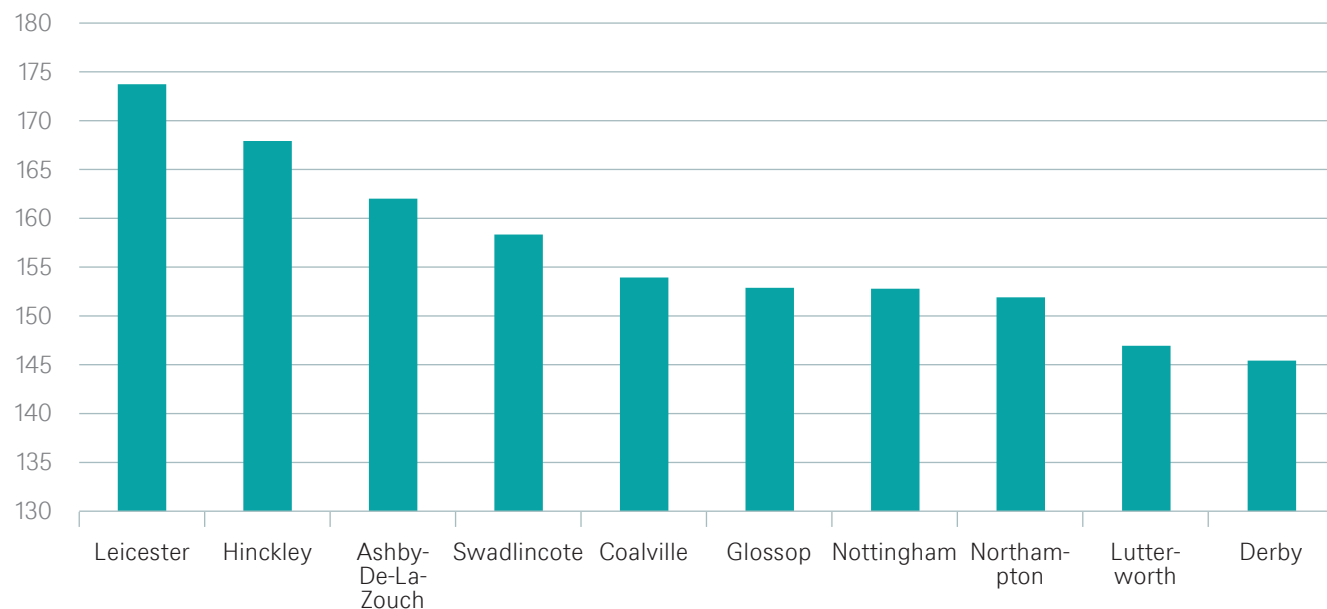
These regional locations also look favourable when contrasted to rental values.

MAX ONLINE SPEND INDEX WITHIN 60 MINUTE DRIVE TIME, MIDLANDS (National Average = 100)

West Midlands



East Midlands

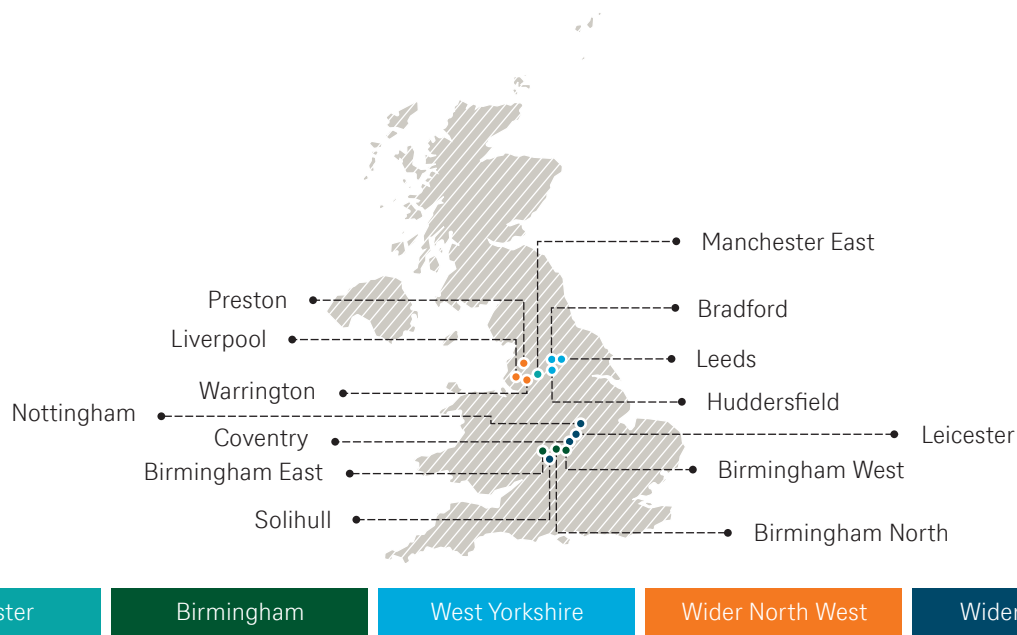


Source: CACI, DWS, August 2019

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Outside of these top locations we have outlined, there are also towns and cities such as Warrington, Preston, Wolverhampton and West Bromwich where rents relative to their online spend potential also look attractive.

TOP LOCATIONS IN THE REST OF THE UK



Source: DWS, August 2019

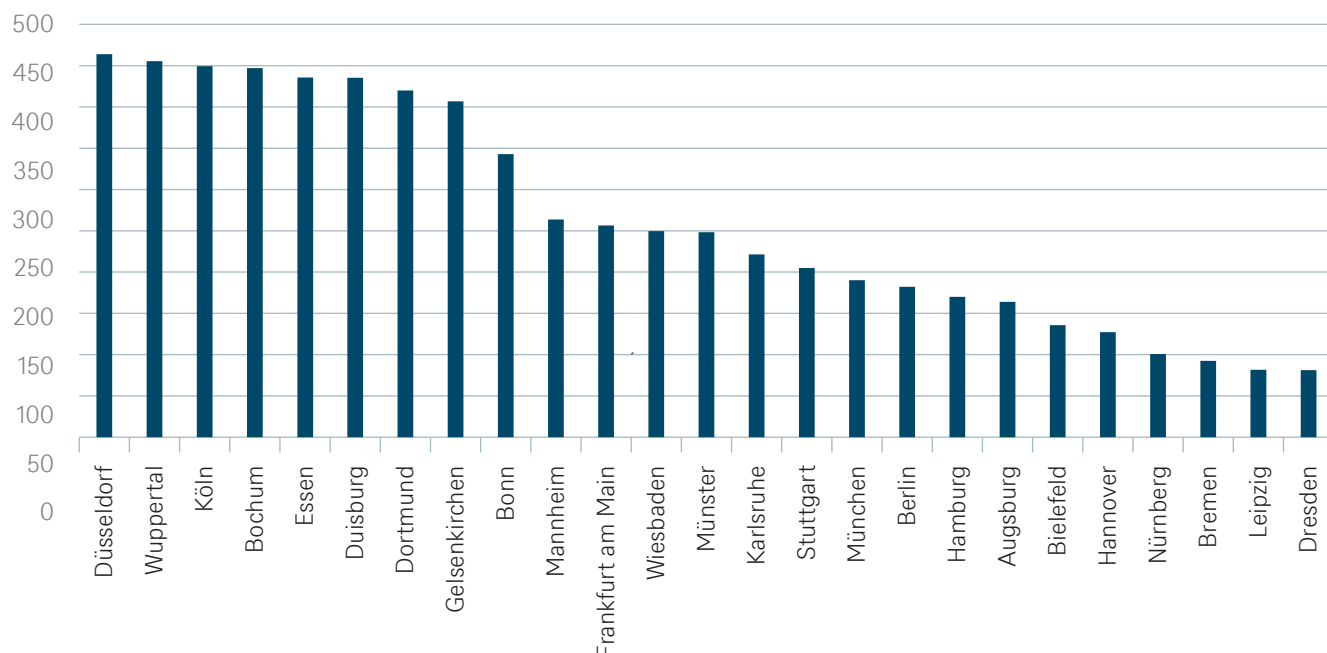
Implications for the German logistics market

The story perhaps is not as clear cut in Germany as it is in the United Kingdom mainly reflecting the polycentric nature of the German market. The top ten locations in Germany are dominated by the North Rhine-Westphalia (NRW) region. Here, the online spend potential sits well above the national average, reflecting the density of these markets and its suitability to online retailing.

While multiple locations can serve the wider region, densely populated locations should still remain in favour.

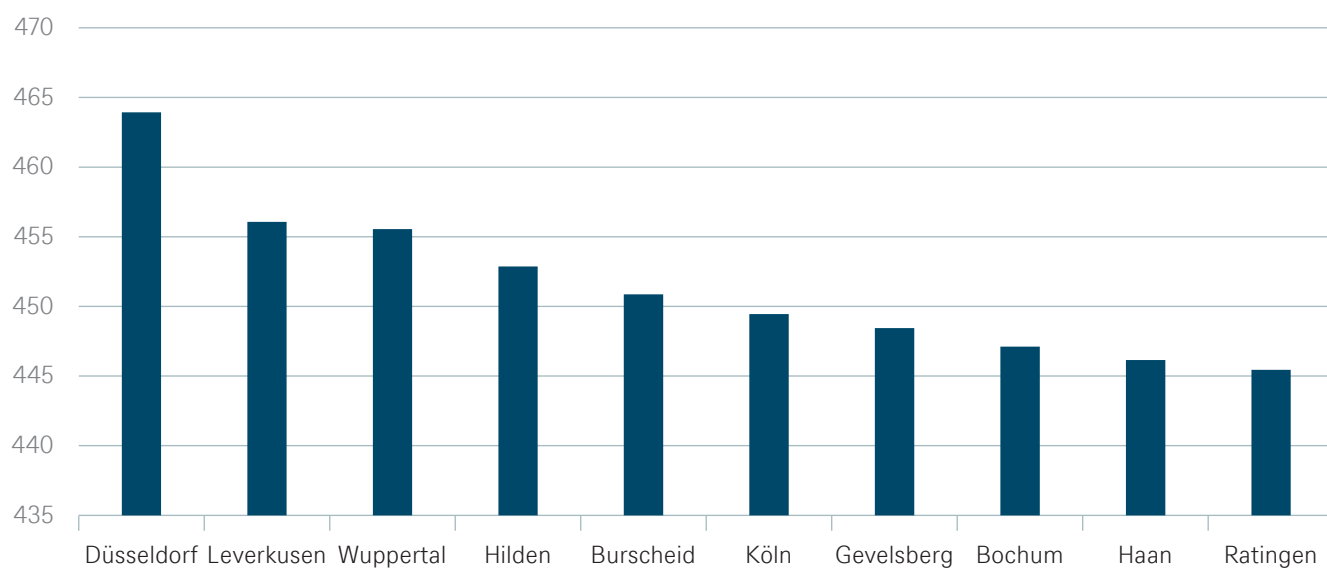
It will take time for new locations to open up while the move towards ever shorter delivery times will necessitate continued proximity to urban areas for some occupiers.

Online spend potential is still high in the likes of Frankfurt, Munich, Berlin and Hamburg albeit these markets capture much lower spend relative to the NRW region.

MAX ONLINE SPEND INDEX WITHIN 60 MINUTE DRIVE TIME, TOP 25 CITIES, GERMANY (National Average = 100)


Source: CACI, DWS, August 2019

As we touched on, the highly dense North Rhine Westphalia federal state sees little variation in spend with just a 4% differential between Düsseldorf (the highest ranked location in the state) and Ratingen (the 10th post town location).

MAX ONLINE SPEND INDEX WITHIN 60 MINUTE DRIVE TIME, TOP 10 POST TOWNS, GERMANY (National Average = 100)


Source: CACI, DWS, August 2019

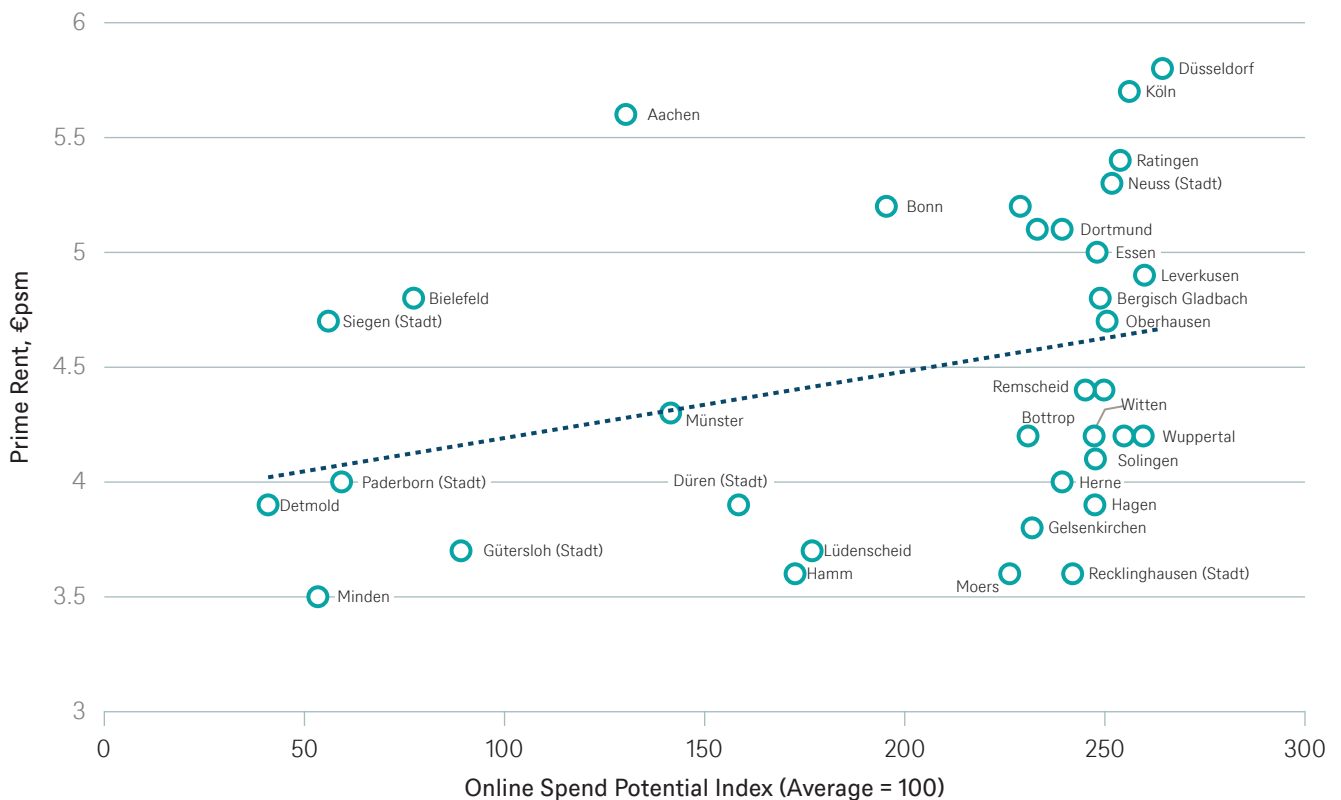
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Some locations where land values are lower, such as Remscheid in North Rhine-Westphalia, but still command relatively high levels of online spend potential, could become future Last Hour logistics hubs. Recklinghausen, to the north of Herne commands a catchment spend potential which stands at just 8% below that of Dusseldorf yet prime rents are 40% below and land values are a fifth.

In any case, key metropolitan centres such as Dusseldorf and Cologne will still likely remain in favour and could in fact see greater potential. Here the transport and fuel cost reduction could enable tenants to pay higher rents to remain in the best locations, particularly if they wish to deliver more quickly.

While maybe not on the radar of occupiers today, these locations could open up longer-term. As self-driving electric trucks reduces transport costs and warehouse automation reduces the need for workforce access, some occupiers seeking to reduce rent costs could consider these locations.

ONLINE SPEND INDEX (Average = 100) VS PRIME INDUSTRIAL RENT €PSM, NORTH RHINE WESTPHALIA



Source: BulwienGesa, CACI, DWS, August 2019

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Beyond North Rhine-Westphalia, the relationship between prime rents and spend potential does seem to increase albeit still not to the same level as observed in the United Kingdom.

The analysis suggests that there are locations such as Mainz, where the likes of GEFCO and Kuehne & Nagel are present, where a similar spend can be reached within an hour to the likes of nearby Frankfurt but with prime rents almost 30% less. But we also see significant land availability here too.

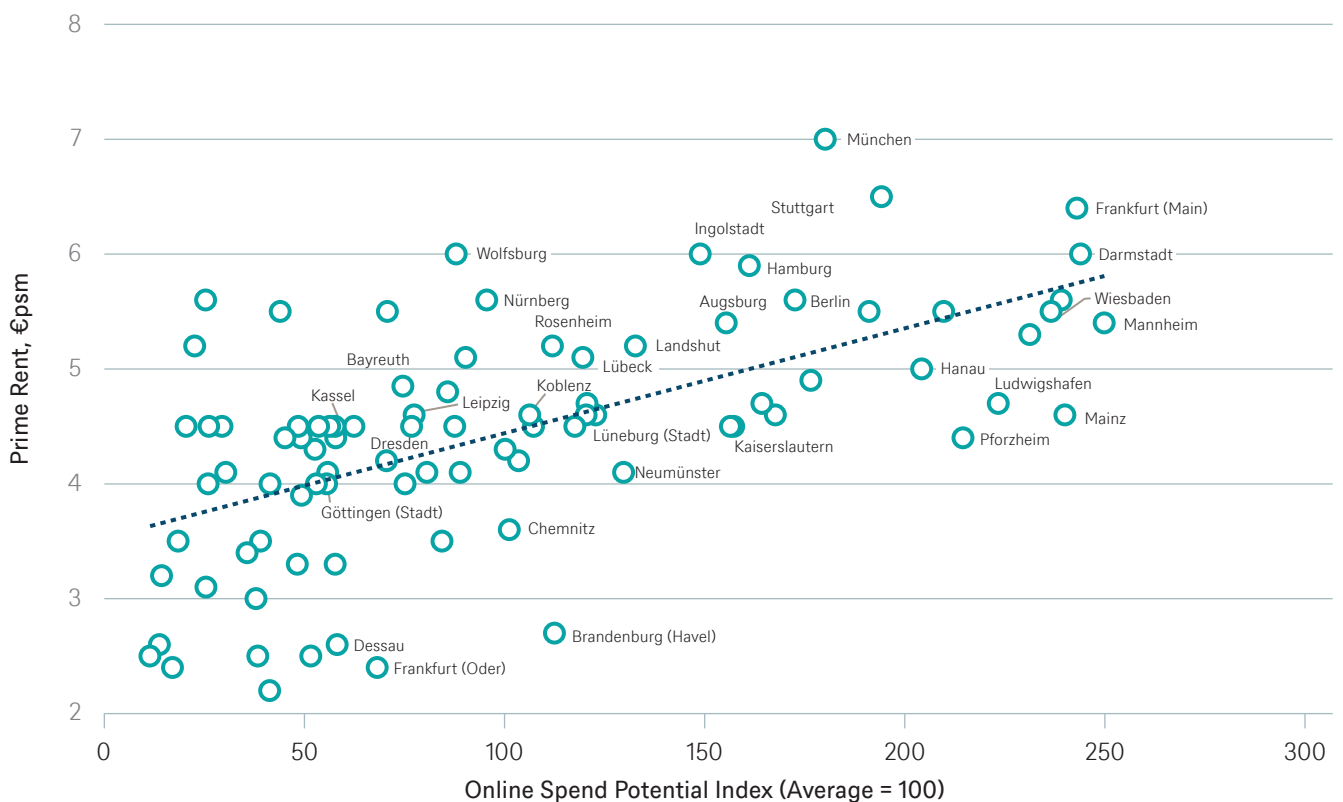
This is a similar story with Ludwigshafen to the south of Frankfurt. This location, to the west of Mannheim and Heidelberg has a high level of online spend potential given the proximity to these towns as well as to Frankfurt and Darmstadt, but with rents well below the latter.

The risk in terms of land availability that exists in the German “Last Hour” market is clearly evident. While the location benefits from excellent accessibility and is in close proximity to a number of medium and large sized towns and cities, it sits in a location with plentiful land nearby.

A combination of a lack of constraints in terms of where to build along with a number of such locations available to choose from presents tenants with choice. However occupiers do consider such locations with Amazon operating a 60,000 sqm fulfilment centre in nearby Frankenthal.

Another example of such a location we see is Pforzheim in the federal state of Baden-Württemberg. This “Last Hour” location sits in between Stuttgart and Karlsruhe, reachable within an hour, while the towns of Baden-Baden, Heidelberg and the suburbs of Mannheim are also within reach.

ONLINE SPEND INDEX (Average = 100) VS PRIME INDUSTRIAL RENT €PSM, GERMANY EXC NORTH RHINE WESTPHALIA



Source: BulwienGesa, CACI, DWS, August 2019

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This location has higher spend potential than Stuttgart while rents are about 30% below. Amazon opened an 110,000 sqm fulfilment centre in Pforzheim in 2012. With rents much lower in such locations and with construction costs rising, we think these submarkets can be relatively defensive given their lower rents, benefitting from a base effect, despite risk of competition. However we expect a flatter rental growth profile relative to more urban locations.

In more urban locations, we think the reduction in operational costs due to technology could support occupier propensity to pay higher rents, particularly in those locations that facilitate rapid customer deliveries within 30 minute purchase to delivery timeline.

Implications for German investment

We think investors should consider “supply constrained” Last Hour locations such as Pforzheim where rents are low, providing a “base effect” defensive cover. These locations stand to benefit once technological change makes time over distance a more important factor. We caution against underwriting strong rental growth but we expect such locations to offer favourable yield premiums.

The existence of viable alternative locations suggests that future rent growth could be lower in weak micro locations within cities such as Dusseldorf, Frankfurt and Stuttgart. However the best micro locations suited to enable even faster deliveries to customers could see rental outperformance.

With prime assets expensive in Germany, investors seeking value ought to consider high online spend potential locations with significant rental discounts to established hubs. Of course, the key risk is land availability and investors should take into account local market factors in this respect.

The likes of Recklinghausen and Herne along with nearby Gelsenkirchen, Bochum and Witten (all to the west of Essen) in the NRW region look attractive. These locations offer relative pricing and rental discounts to that of Dusseldorf and Cologne in this region while capturing similar levels of online spend potential. Indeed in between Herne and Bochum we see the likes of DHL with a cross-dock parcel delivery facility, Amazon and Lidl already present.

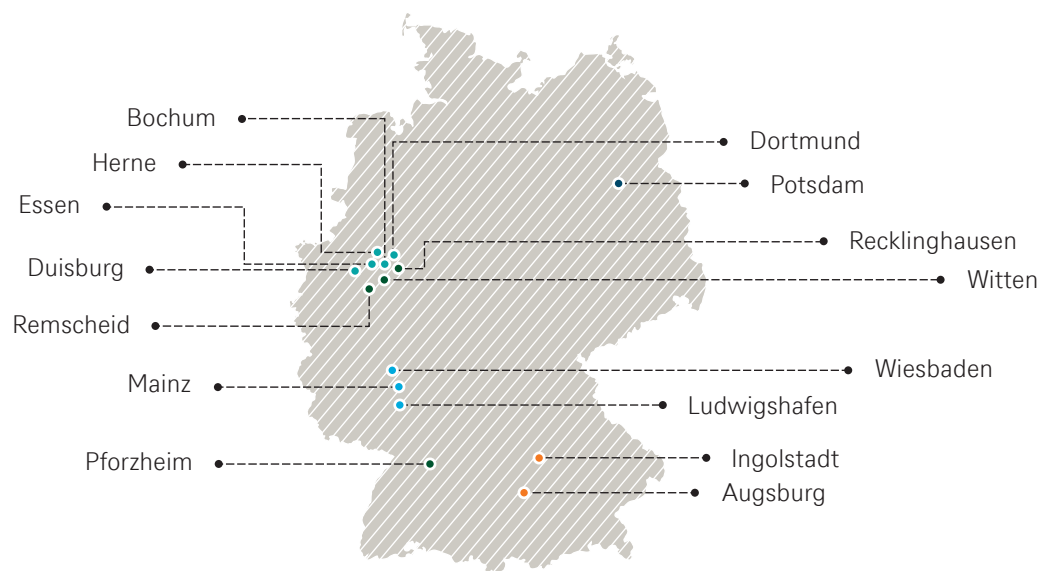
As technological change reduces transport costs associated with distance, we expect some of these locations to find favour long-term from occupiers, placing gentle upwards pressure on rents in these locations. But we don't expect significant “alternative land use” pressured rental growth given that tenants face choice and land is still available.

Beyond the NRW region, the likes of Mainz and Ludwigshafen which fall within the Rheinland-Pfalz region but are in close proximity to Frankfurt look interesting. With rents low, these locations could benefit from base effects, increased lack of space in established urban locations and their relatively large online spend potential.

Within Hessen, the likes of Darmstadt and Wiesbaden, despite fairly high rent levels, look good value compared to Frankfurt albeit capture a similar level of spend. Similarly in the Bayern region, rents are already quite high but the likes of Augsburg and Ingolstadt capture fairly high spend while rents are relatively cheaper than Munich proper.

While prime locations in the south-eastern part of Berlin look pricey, rents in well-connected locations for example in the south-west towards Potsdam are about 18% cheaper while pricing offers a large discount despite very similar levels of online spend potential within 60 minutes.

TOP LOCATIONS IN GERMANY



Established NRW

Base Effect

Wider Frankfurt

Greater Munich

Berlin Beneficiary

Source: DWS, August 2019

Summary

Our analysis with CACI has unearthed the locations required to attain partial or full online retail spend coverage to deliver within one hour, the most optimal locations at a granular postcode required to undertake fast delivery across the UK and Germany and identified those locations in the UK that look mispriced relative to rents and land values. Here investors could unearth relative value, whether to undertake speculative development, partner on a forward funding basis or find redevelopment plays in locations with long-term residential land value uplift potential.

As we mentioned in the outset, this analysis can be replicated across delivery windows (30 minutes to 4-6 hours) and can

be undertaken for different online spend categories, such as grocery, which should support occupiers to determine as a first step where they can locate most optimally. Of course route optimisation, site viability and total operating costs would be further considerations in addition to a forensic approach to assessing micro location factors.

Beyond this, firms ought to still consider fundamentals such as business competition, the cost to serve, margin implications and moving costs. Investors should not forget property fundamentals such as local occupier conditions, supply threats, municipal regulations and taxes, infrastructure development and the impact of technological change.

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