IPF Research Programme

Chopping Shopping? Implications of Retail Structural Change on Sector Allocations

DECEMBER 2019

MAJOR REPORT

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Report

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Chopping Shopping? Implications of Retail Structural Change on Sector Allocations

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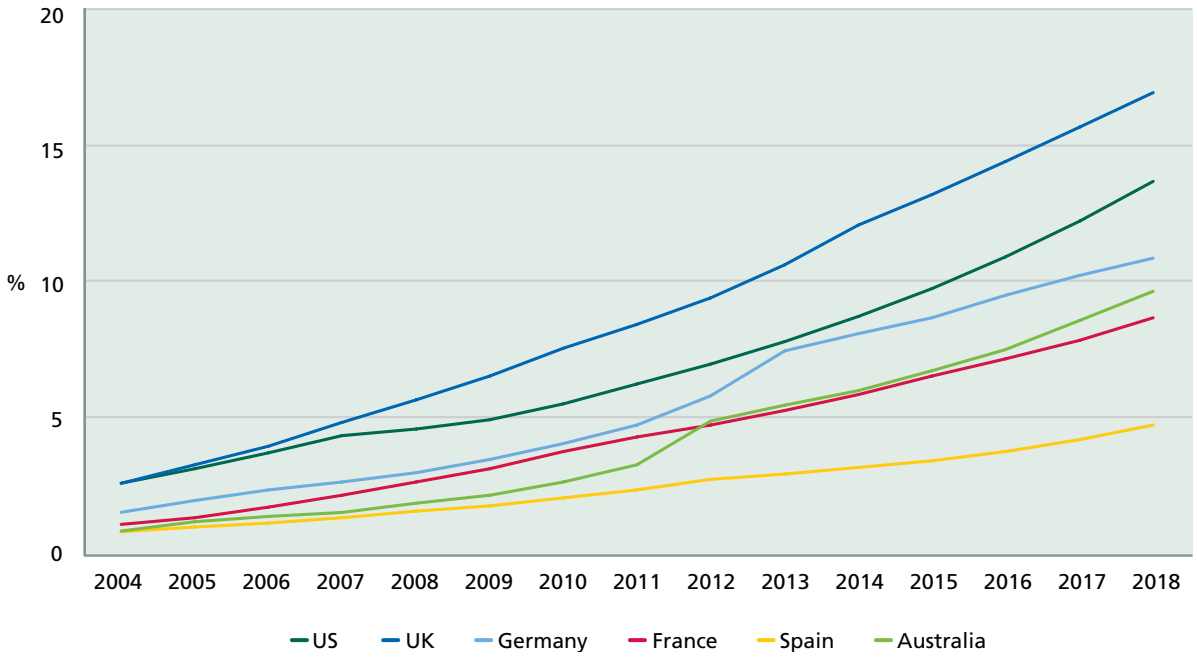
Retail real estate has traditionally been seen as an attractive investment class. Historically it has provided superior returns, long term stability and growth of income. It has also preserved residual value, allowed for diversification and enhanced the scope to deploy substantial capital in a single transaction. Nonetheless, with the emergence of e-Commerce and the slow recovery from the Global Financial Crisis (GFC), some of these attributes for the key international markets are no longer replicable through new investments in retail.

This report analyses trends in the retail market and retail real estate investment performance to identify implications of e-Commerce for property investment allocations to the retail sector. It provides high-level directions as to whether other property sectors could be an alternative to retail.

Retail Market

Since the early 2000s the retail market has undergone substantial change, driven to a large extent by e-Commerce cannibalising bricks-and-mortar retailing. Internet retailing is growing at a steady pace (see Figure 1.1), infiltrating more and more retail categories. These trends are expected to continue driving a reduced demand for physical retail transaction space in all markets, with the possible exception of Australia. Retailers have responded by streamlining their property portfolios and reducing footprint. However, retail sales for certain retailers are arguably falling below a sustainable level. In the UK in particular this has recently manifested in a number of retailers falling into administration.

Figure 1.1: Internet Retail Sales versus Total Retail Sales, 2004-2018



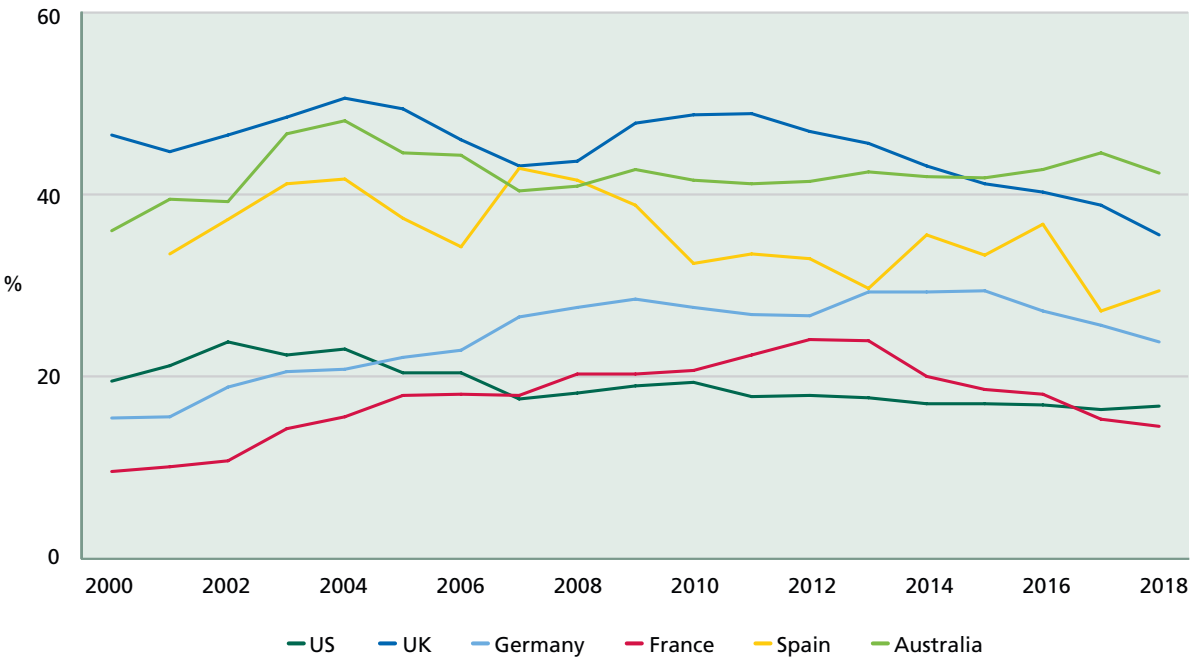
Source: Euromonitor (2019)

1. EXECUTIVE SUMMARY

Retail Investment Market

The average allocation to retail by portfolios within professionally managed real estate investment differs by country. By the end of 2017, retail's share of real estate investment portfolios ranged from between 15-20% in France and the US to around 40-45% in the UK and Australia. Despite the widely discussed challenges facing the retail sector, the allocation to retail real estate across institutional and large-scale investors has been reasonably resilient. However, in recent years the share of retail is declining in the UK from a high base and to a lesser extent in France and Germany (as shown in Figure 1.2).

Figure 1.2: Share of Retail in Total Real Estate Investment, 2000-2018



Source: Based on MSCI (2019)

This research identified some systematic changes, suggesting that the expected impact of retail decline on retail investment may be delayed or that the institutional/large-scale investors included in the MSCI sample so far have been able to respond reasonably well to the changes in the retail market. Key changes include:

- In the UK, a gradual shrinkage in retail allocation has been seen since 2011 (from an almost 50% share within portfolios down to less than 40%), with net gains in investments in non-mainstream sectors;
- Total returns from retail across all analysed countries have fallen and are now below the market average and seem to be stable or slowly falling both in absolute terms and relative to other mainstream sectors; and
- Transaction activity post-GFC has substantially reduced to a lower but stable level suggesting longer holding periods and a cooler transaction market.

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Projections

Modelling used in this study (as shown in Figure 1.3) suggests that, between 2018 and 2030, there is potential for the allocation to retail real estate to reduce materially, particularly in the US and UK. Under the base case scenario, the size of the retail property investment sector is projected to fall by 22% and 11% in the US and UK respectively, while an accelerated adoption of e-Commerce results in larger projected falls of 33% and 21% respectively. However, assuming a slower adoption of e-Commerce results in the UK seeing no reduction. Furthermore, other countries, such as Australia and Spain, are projected to see smaller impacts and may actually see growth. Careful consideration must be made with respect to type of merchandise, scheme type and specific characteristics of the catchment area.

Figure 1.3: Projected Total Changes in Capital Value, 2017-2030

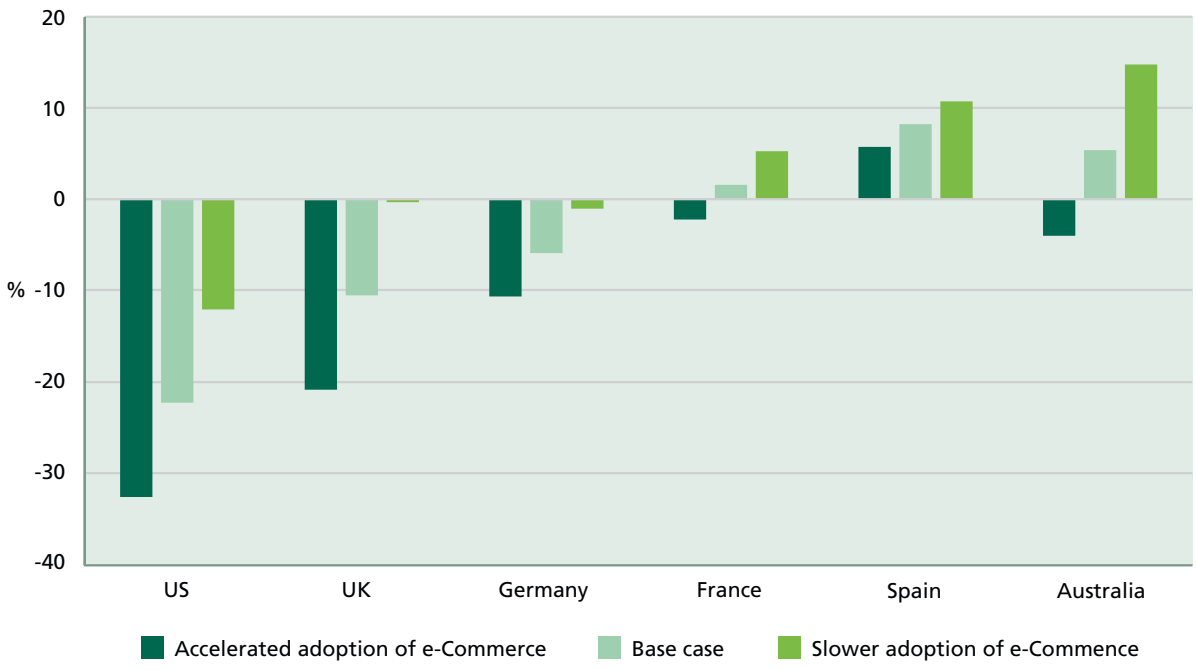

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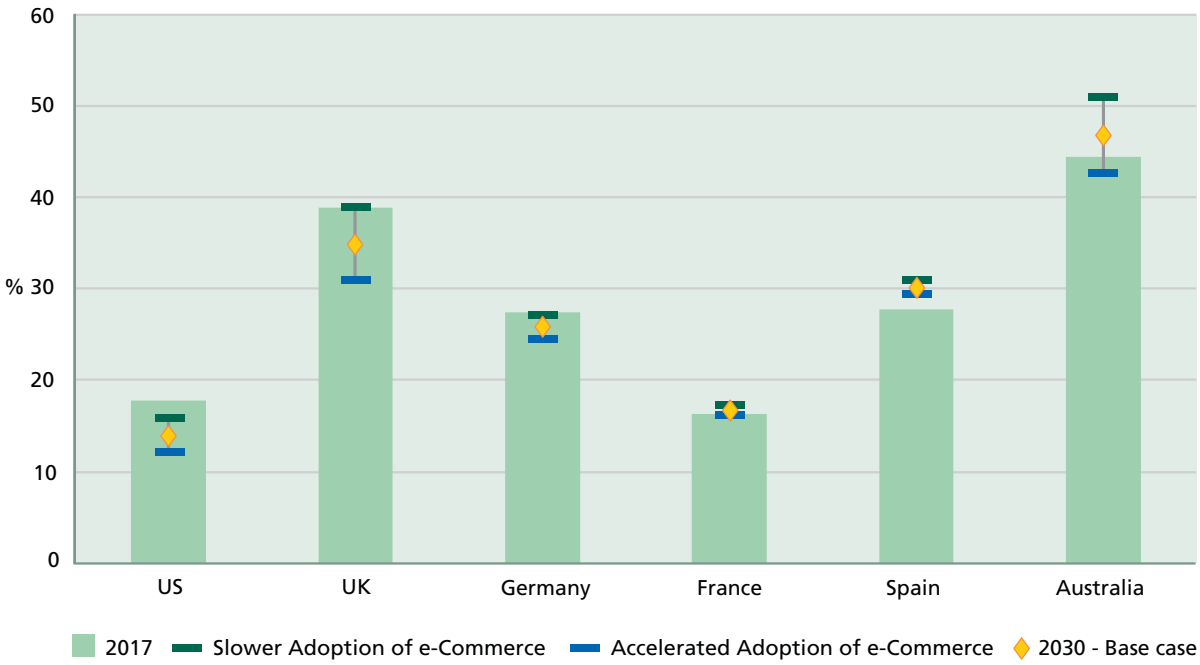
Figure 1.4 provides details of changes to retail real estate investment allocation assuming no changes to the total real estate investment market size.

Figure 1.4: Scenario Comparison – Allocation to Retail Real Estate Investment, 2017 versus 2030



Future implications

To maintain acceptable investment performance from retail assets within an institutional real estate portfolio, a key consideration will be the evaluation of the long-term potential of individual retail schemes and their ability to respond to changing consumer needs. These decisions will result in:

- Proactive redesign/upgrade of remaining schemes; and
- Repurposing of surplus retail space (where suitable alternative uses are viable).

Retained schemes will need to change to provide experiential space with far less conventional retail space and more space for other (often more flexible) uses, suited to catchment population.

Surplus or redundant assets, depending on location, may be converted to other uses. For some investors, that may mean a transition from core towards core-plus and value-add strategies for assets. However, within the existing portfolios the appropriate moment for conversion may be some time in the future because in many cases the existing retail use may continue for quite some time to reflect the highest and best use of the property vis-à-vis other uses. Changes to existing schemes are likely to take time and the market adjustment may be delayed resulting in a temporary reduction in profitability of retail real estate investment. Trade-offs

1. EXECUTIVE SUMMARY

will be required, e.g. shorter and more flexible leases, potentially smaller individual real estate asset values and more complex management.

Some investors may choose to dispose of their retail assets and redeploy the capital. While the other mainstream property sectors (offices and industrial) may be the beneficiaries of such reallocation, exposure to other less traditional sectors is also likely to rise. In particular, the following uses may be deemed as attractive alternatives to retail property allocation going forward:

- Logistics and fulfilment, including urban warehouses;
- Healthcare; and
- Accommodation, including student, retirement and aged care and hotels.

Neither the surviving retail schemes nor the alternative uses will provide the same investment attributes as retail property investments have done in the past. No specific alternative real estate sector is expected, therefore, to drive money out of the retail sector, although some may benefit disproportionally in the short term.

It is also possible that a proportion of capital leaving retail property investments will need to be deployed outside of the property market, into other asset classes such as equities, bonds or wider infrastructure. As the retail real estate supply is deemed to reduce, the size of total real estate investment market may also change. This research is limited to an exploration of the MSCI samples, which represent players proactively managing their real estate portfolios. The size of the total real estate investment market was therefore not considered within the scope.

2. INTRODUCTION

Context of the Research

Technological advancement, the emergence of the internet as a marketplace, growing competition, shifts in consumer tastes and preferences, accelerated globalisation of the retail sector and wider economic uncertainties and challenges have been driving major changes in retail. The most significant impacts of these changes are seen on the design of new schemes, regeneration of existing ones and on the changes to the logistics sector.

Such changes require re-evaluation of real estate investors' strategies and possibly a redefinition of retail investment assets. The central research question is, therefore, in line with the evolution of the retail sector: should investors remain loyal to retail assets, historically a highly profitable strategy, or should they focus on other market segments? If so, which segments should they choose? The aim of this research is to gain an understanding of what (if any) impact the changes in retail have had on allocations to the sector within major institutional real estate investment portfolios and to investigate what future portfolio allocations might look like.

Research Objectives

The report addresses the following three objectives:

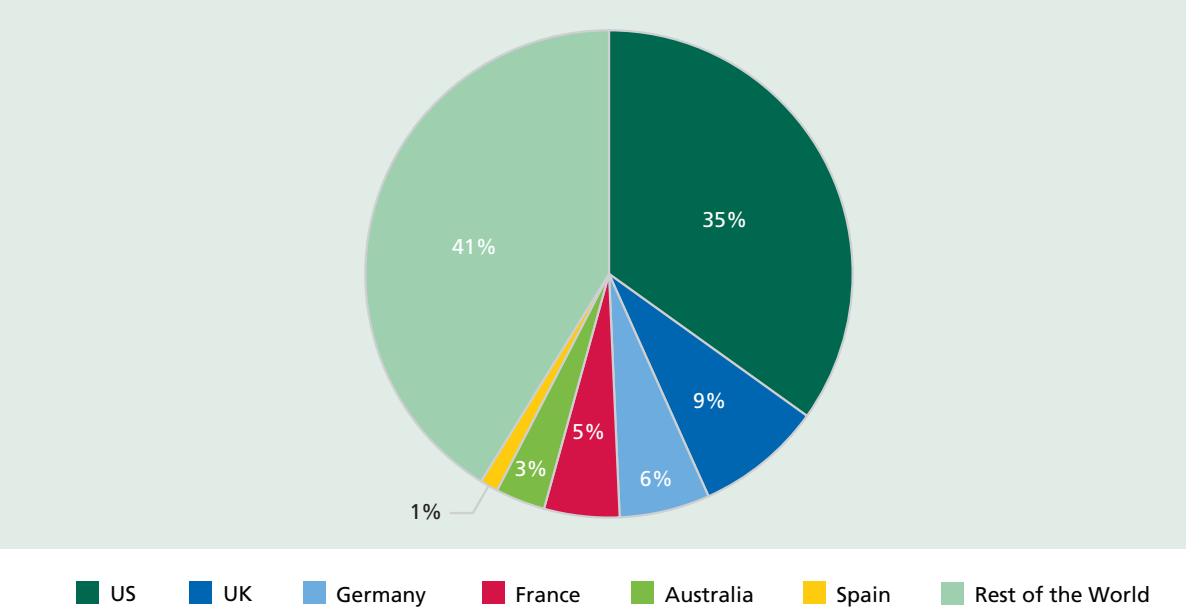
- An investigation of past retail allocation and drivers of change for retail allocation including consumer behaviour, non-store retail distribution channels and changes to retail investment assets.
- An investigation of retail real estate investment performance versus other real estate sectors, including:
  - Current retail investment performance versus other mainstream sectors;
  - Evolution of alternative investment sectors; and
  - Wider portfolio allocation implications.
- Identification of implications for future retail real estate sector allocation, including:
  - Impact of future growth of omni-channel retailing on retail real estate investment weighting;
  - Changes in demand for retail real estate investment;
  - Evolution of paradigms for occupation and development of retail schemes affecting retail real estate investment allocation;
  - Alternative real estate investment sectors; and
  - Risks of investment in retail versus other competing real estate sectors.

International Scope

This research covers six key real estate investment markets: Australia, France, Germany, Spain, United Kingdom (UK) and United States (US). These countries represent almost 60% of the total professionally managed global real estate investment market (Bothra and Teuben, 2017). This report does not endeavour to draw conclusions with respect to other territories (for example, South Korea, enjoying a very high e-Commerce penetration, was originally specified as part of the research brief but meaningful analysis proved difficult due to data limitations).

2. INTRODUCTION

Figure 2.1: Geographic Distribution of Professionally Managed Real Estate Investment Market, 2017



Source: Based on Bothra and Teuben (2017)

Research Data Sources and Limitations

The reader is advised of research limitations, namely issues related to the analysis of isolated markets, within country variations, market players, real estate investment, data sources (Euromonitor and MSCI data), and currency and inflation. Full details of the data sources and further explanation of the limitations are provided in Appendices A and B.

[2] i.e. a requirement explicitly referenced in the investment mandate.

3. LITERATURE REVIEW

This section reviews previous research in order to understand the major factors affecting developments in retail spending and the structural changes of the retail property sector in response. Importantly, the review focuses on how requirements for retail space and other associated real estate assets are related to these spending changes.

3.1. Structural Changes in the Retail Sector

Retail has been constantly evolving over the last half century towards larger out-of-town facilities and away from smaller market places, single shops, specialty shops, department stores and grocery supermarkets to house a growth in consumer purchasing power and car use. Out-of-town facilities in many of the analysed markets include development of enclosed larger schemes of regional and super-regional importance attracting growth in investment from the managed portfolio investment market. By the 1990s, the sector further evolved due to the advent of the internet and the introduction of online payments as a logical extension of traditional mail order. However, internet shopping has now introduced a "parallel retail universe", which has irreversibly changed store-based retailing (Ingene, 2014). Over the last decade the rise of e-Commerce has driven the sector substantially away from the traditional brick-and-mortar model towards omni-channel retailing.

At the turn of the millennium, research predicted that e-Commerce would reduce physical space, footfall and profit margins and increase competition (Winograd et al., 2000 and Baen, 2000), which all proved prescient. It is now anticipated that many traditional store-based retailers may not survive in business as a result of innovations in retail platforms that offer higher consumer-shopping value at lower cost. Sections 4 and 6 of this research investigate the potential reduction of demand for retail space.

Robaton (2018) suggests the following universal key trends driving evolution of shopping centres to combat the threat due to the growth in e-Commerce: Intimacy with the consumer and engaging environments; Unification of bricks-and-mortar and online retail; Conversion of shopping centres into communities; Accelerated developer–retailer collaboration; Emergence of a new blended rental model; Investors and lenders favouring top-tier new format schemes; Incorporating distribution into shopping centres. Grewal et al. (2017) also stress technology, together with big data collection and usage as key tools to facilitate store versus non-store purchase decision making. These concepts are discussed in more detail in Appendix C.

3.2. Real Estate Portfolio Investment

Implications of Structural Change on the Performance of the Retail Real Estate Sector

The changes in the retail sector, especially driven by e-Commerce, translate into shrinking demand for bricks-and-mortar retail space. The real estate market has been slow to respond by reducing the supply. PwC (2019) note that, for example, in the US "We're not overbuilt, we're under-demolished". This may cause increased and prolonged vacancies of the least attractive retail space and ever growing pressure on rent reduction and incentives, impacting investment performance. Section 5 provides detailed discussion of these issues based on MSCI data.

Retail real estate investment has traditionally provided greater certainty and stability compared to other real estate sectors. However, as noted by the International Council of Shopping Centres (2016) this is no longer certain, with investors being challenged by changing tenants' needs. The resulting push by tenants for more flexible and shorter leases is affecting the long-term returns and increasing volatility (Demay, 2019).

[3] Representativeness is particularly important if one wants the index to be reflective of the broad market/opportunity set. This is key for all indices but only some benchmarks depending on purpose.

[4] Just under 20% of the professionally managed real estate investment market in the US (using market size data from MSCI, 2018).

3. LITERATURE REVIEW

Modern Portfolio Theory (MPT) – Application for Real Estate Investment

Despite the benefits and academic rigour of MPT, this approach is rarely applied by fund managers in allocating funds, primarily due to the gap between theory and real estate market imperfections (Fu, 2014). Nantamanasikarn and Savic (2010) suggest the following challenges of MPT: invalid assumption of an efficient market, non-zero transaction costs, private transactions (often via exclusive brokers hindering transmission of information), lack of publicly available prices, low liquidity, low transaction volumes, costly and time-consuming due diligence as well as short and low frequency data series. Similarly Cheng et al. (2011) stress limitations such as low liquidity, portfolio size and holding period.

Researchers have considered alternative approaches. Nantamanasikarn and Savic (2010) conduct a Monte Carlo Simulation by varying rent growth and exit yield to identify "sell" and "hold" properties; Plazzi et al. (2010) and Fu (2014) use a Cap Rate Model to predict returns and optimise portfolios, while French (2001) suggests using prescriptive models.

Jones et al. (2017) expose MPT's limitations in terms of predicting the future and conclude that, to achieve an optimum balance of risk and return, active switching between segments is required. However, they demonstrate that this does not occur, suggesting that institutional portfolios change slowly dependent on the supply of assets available. They suggest that evolving occupier demand (and consequent supply) and long-term urban change should drive investment decisions.

Sectoral Real Estate Allocation

A substantial body of literature focuses on optimal portfolio allocation between financial and liquid assets with typical conclusions for allocation to real estate ranging from single digit up to 40% (e.g. Chi Man Hui and Yu, 2010; Fugazza et al., 2007). However, there is a lack of research that investigates sectoral optimisation within real estate portfolios.

Jones and Weill (2018), based on mid-to-late 2018 industry surveys, suggest that target allocations to real estate in institutional portfolios are increasing (the average target allocations increased to 10.4% in 2018, up 30 bps from 2017 and up approximately 150 bps since 2013). This increase is most prevalent among institutions in Asia Pacific and EMEA. Despite an increase in actual and targeted allocations, institutions remain meaningfully under-invested (by approximately 90bps relative to target allocations). Within this category, insurance companies are the most under-invested.

Based on analysis of the US and UK markets, McGreal et al. (2009) confirmed that all three main real estate sectors play a relevant role in optimal diversification. However, they observed that, in the UK, office property never enters the optimal portfolio when the three property sectors are considered simultaneously, notwithstanding that this is the most preferred type of investment for institutional investors.

Bregman and Baraz (2012) observed discussion among theoreticians and practitioners regarding the relative riskiness of office properties and retail properties, finding no clear-cut conclusion in existing literature. Based on an analysis of US Real Estate Investment Trusts (REITs) they found that while the notion that offices are riskier was correct in the past, there has been a process of convergence, and by 2012 the investment risk of retail was slightly higher.

3. LITERATURE REVIEW

Optimal Divestment Timing

The focus of this research is on the scale of potential divestment from the retail sector (if at all) and reallocation to other real estate sectors. As suggested by Amédée-Manesme et al. (2016), the critical point is the holding period and timing of the potential divestment to optimise risk and return.

MacCowan and Orr (2008) suggest that the main reason for disposal of an investment is due to re-structuring the portfolio (i.e. under-performance of the asset involved, and current market expectations). Their study also identifies links between rational and irrational behaviour in the selection of assets for disposal. The irrationality results from the inefficiency of the real estate market, and the lack of accurately available information.

This research therefore considers a retail performance-based model (described in Section 6.1) to predict potential dynamics of divestment from retail real estate in response to falling demand.

Alternative Sectors

With the falling appeal of retail real estate investment, other real estate sectors and infrastructure are becoming increasingly attractive. In the US and Europe these include logistics (fulfilment, warehousing), accommodation (co-living, moderate income/workforce apartments, senior and student housing, mid-scale hotels) and healthcare (PwC, 2019a and 2019b).

However commentators suggest that these real estate sectors do not replicate the long-term investment parameters of retail schemes and that infrastructure may become a more relevant asset category for institutional/large-scale investors (Dechant et al., 2010 and PwC, 2019a, 2019b and 2019c).

Valuation Stickiness and Anchoring

Valuation stickiness can lead to delays in the manifestation of recent phenomena affecting investment performance. This was clearly demonstrated during the GFC, when property valuations suffered a delayed effect due to anchoring before ultimately seeing major reductions (Bokhari and Geltner, 2011). Investors' influence over independent real estate appraisals plays a significant role in property valuations (Crosby et al., 2018).

Ross and Lo Presti (2018) recommend valuers ask direct questions: Is the property really needed in the future? Is there, or will there be, sufficient demand for the current use? In this context, the recent Valuation Notification of RICS (issued on 20 January 2019) suggests that the structural changes in the retail sector may not be yet fully reflected in asset valuations.

3.3. Summary

This literature review has provided the basis from which Section 4 examines the retail market performance. It allows contextualisation of the historic growth in e-Commerce and its cannibalisation of in-store retail on the basis of demographic shifts and evolution of retail and allows for qualitative evaluation of likely future performance. It has emphasised that while e-Commerce is growing and causing massive disruption to store-based retail spending, the advent of omni-channel retailing and the continued desire of consumers to engage with products in-store provides opportunities for further evolution of retail spaces.

4. RETAIL MARKET PERFORMANCE

The literature review reported in Section 3 highlighted the importance of demographic shifts, as well as growth in online retailing in the demand for retail real estate. Retail market performance is considered, therefore, in this section.

4.1. Demographic Shifts

Two major demographic factors affecting consumption patterns are population size and age profile. In particular younger populations have been seen to be driving a shift towards e-Commerce. This section provides an overview of the key demographic shifts in the analysed countries.

None of the countries in this study has a Total Fertility Rate (TFR) that reaches the replacement rate (which is 2.1 live births per female). Therefore, without immigration, these countries are expected to suffer from an aging and shrinking population.

Spain has a low fertility rate (TFR in 2018: 1.3) accompanied by a net migration rate of 0.8 per 100,000 leading to a stagnant total population size. Spain continued to experience population growth until 2012. Between 2013 and 2016 the estimated population of Spain declined and suffered net emigration. Current estimates of population indicate a stagnation in total population size giving limited potential for retail sales increases. The scope for demographically driven retail growth in Spain therefore appears extremely limited.

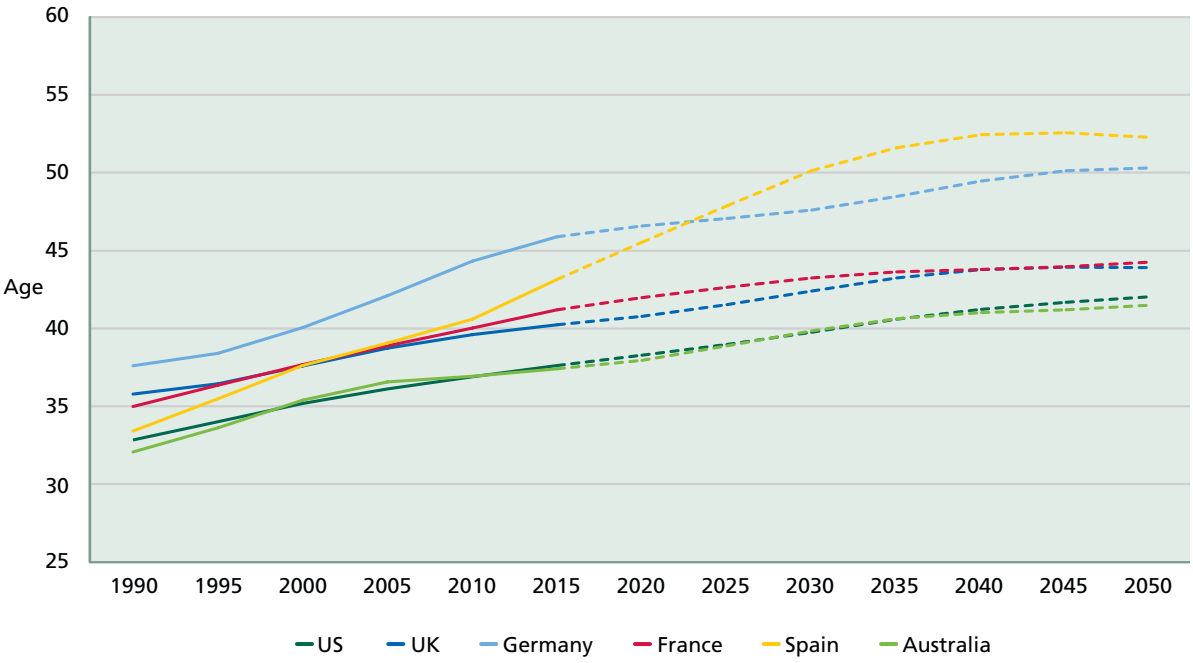
Although aging has been observed across all countries, the US, UK, France, Germany have experienced modest year-on-year migration driven population growth (ranging from 0.38% for France to 0.65% for the UK in 2018). The UK had an estimated net migration rate of 3.4 per 100,000 in 2018; however, this net migration rate has fallen from a peak of 5.1 per 100,000 in 2015. In this context it is noted that future projections may be affected by unforeseen immigration policies.

Australia has experienced strong net migration rates (ranging from 5.3 per 100,000 in 2004 to 14.9 per 100,000 in 2008), leading to consistent year-on-year population growth in excess of 1% per annum.

The effect of inwards migration reduces the impact of the trend of increase in life expectancy on the average age of the population. Examining future population projections (United Nations, Department of Economic and Social Affairs, Population Division, 2017), Spain and Germany are predicted to stagnate in population; with Australia leading the countries in this study in terms of percentage population growth (between 2017 and 2030 by 24.5%).

4. RETAIL MARKET PERFORMANCE

Figure 4.1.1: Median Age of Population



Note: 1990-2015 estimated, 2020-2050 predicted (using medium variant predictions)
Source: United Nations, World Population Prospects: The 2017 Revision

4.2. Retail Sales

The retail market has been subject to unprecedented changes since the late 20th century, driven by strong consumption growth and the evolution in retail formats and distribution channels. These processes have been accelerated by demographic and social shifts and new applications of technology.

Appendix E provides detailed analysis of retail sales with particular focus on store-based goods retailing and non-store retailing (e-Commerce). All values are based on local currency values and Consumer Price Index (CPI) adjusted with 2017 as base year (see Appendix A).

In 2017 total world retail sales amounted to USD15.3tn of which 10.3% constituted internet retailing. The six countries in scope of this research made up as much as 67.5% of global total retail sales and 58.4% of internet retailing.

The total retail sales in the analysed countries, except for the UK, have been steadily growing since the GFC with only Spain, by the end of 2017, unable to recover to the pre-GFC level (in real terms). In the UK, retail sales have effectively fallen by 8.8% between 2003 and 2017. In line with past performance, Euromonitor suggest at least some continued growth in all countries with the lowest levels predicted for the UK and France (effectively 4% and 2% in total between 2017 and 2022).

While this may sound reasonably promising for the retail sector, retail sales per inhabitant grow at a much slower pace. The only country to experience meaningful effective growth between 2003 and 2017 was the US (4.4%), with minor growth in Australia (2.5%) and Germany (2.2%) and declines in France (-2.3%), the UK (-5.9%) and Spain (-18.0%).

4. RETAIL MARKET PERFORMANCE

4.3. Store-Based Retailing

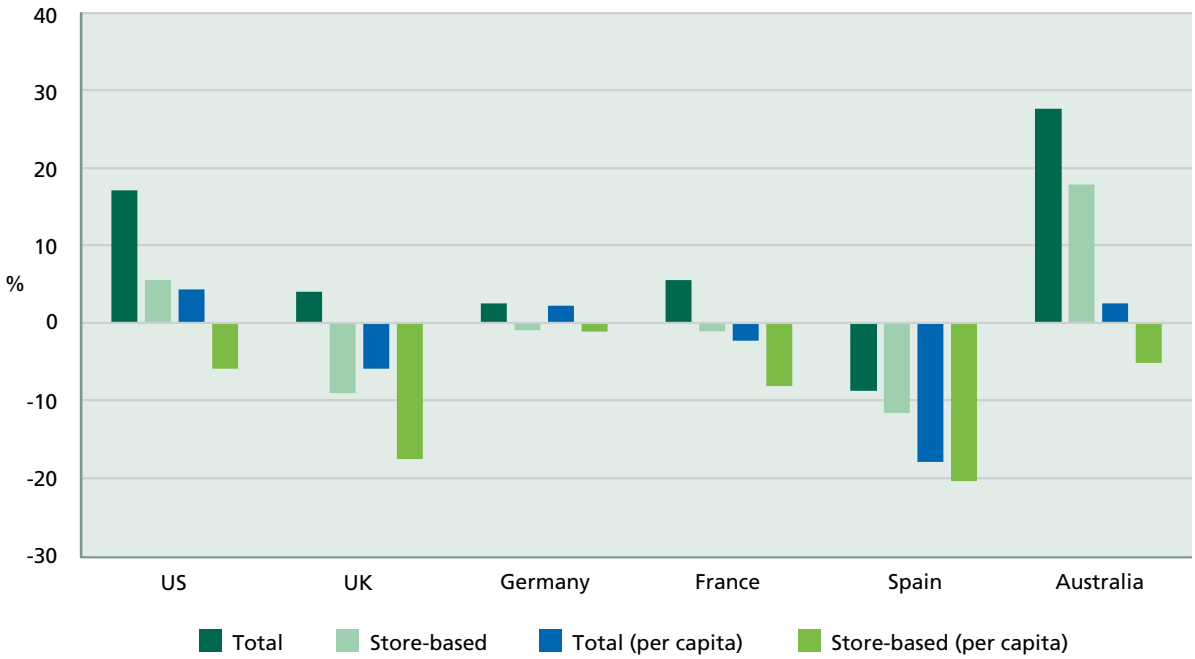
Total Store-based Real Retail Sales

Between 2003 and 2017 total store-based real retail sales have grown in Australia (17.9%) and the US (5.5%), while in France and Germany they have fallen by around 1% each. Notably, in Spain and the UK store-based retailing has suffered a reduction by 11.7% and 9.0% respectively.

Per capita Store-based Real Retail Sales

On a per capita basis all analysed countries suffered decline, with Spain and the UK per capita store-based retail sales falling the most (20.6% and 17.7% respectively).

Figure 4.3.1: Cumulative Real Growth: Total and per Capita Retail Sales and Store-based Retail Sales, 2003-2017



Source: Euromonitor (2018)

Supply of Retail Space

Until the GFC, the supply of retail space had been steadily growing in all countries. The GFC brought about a significant reduction or slowdown in the development of new retail space.

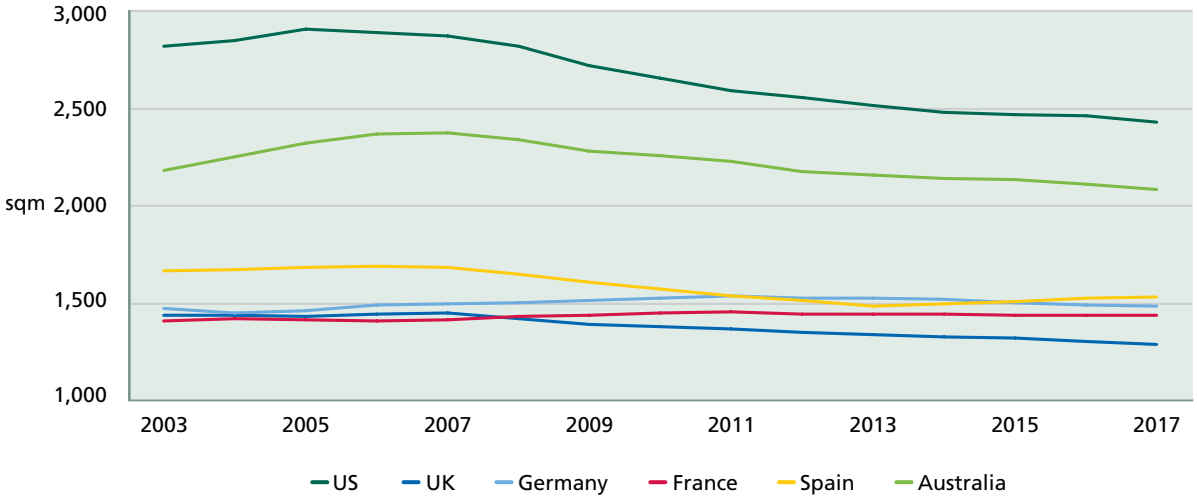
The structure of retail space supply has also changed with major reductions in Electronics and Appliance and Home and Garden

Supply of Retail Space per 1,000 Population

There are major differences in retail saturation expressed as supply of retail space per 1,000 population. By 2017, the US, despite significant reductions since 2005, offered as much as 2,431sqm. This is nearly double that of the UK, France, Germany or Spain. While Germany and France have relatively stable supply, in Australia and the UK gradual space reduction has been observed by 12% since 2007 (in Australia from 2,375sqm to 2,086sqm; in the UK from 1,450sqm to 1,291sqm).

4. RETAIL MARKET PERFORMANCE

Figure 4.3.2: Supply of Retail Space per 1,000 population, 2003-2017



Source: Euromonitor (2018)

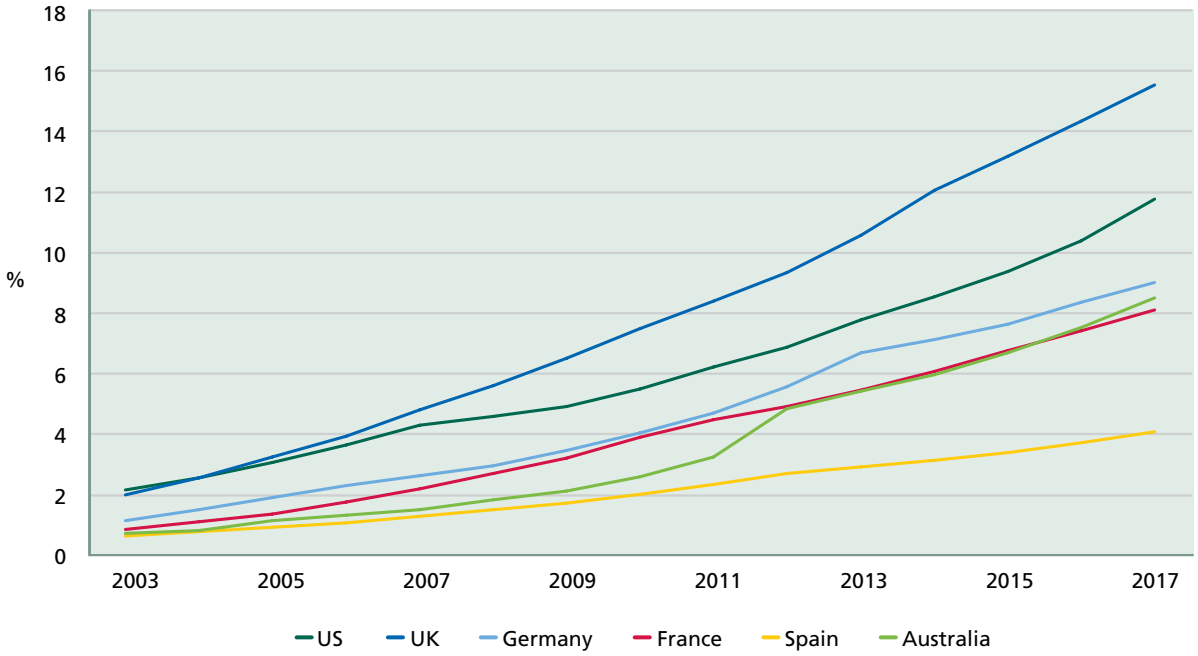
4.4. Non-Store Retailing

Non-store retailing traditionally included direct selling, homeshopping, vending machines and internet sales. Internet retailing not only takes market share from traditional store-based sales, it also affects retailers using direct selling and homeshopping as their main distribution channels. Among the analysed countries, internet sales now dominate non-store shopping. In all countries other than Spain, they make up at least 80% (as much as 93% in the UK) and this share is growing.

The world leader in internet retailing in terms of market share is South Korea (18% of retailing is via internet), a significantly matured market. Crucially the market share in South Korea does not appear to show any sign of saturation – allowing the analysis to take the view that share can increase significantly in other countries. Among the analysed countries the highest share taken by internet retailing is in the UK, where it stood close to 16% in 2017. The US had reached nearly 12% by 2017, while France, Germany and Australia were around 8-9%. Spain has lagged significantly with internet retailing making up just 4% of total retail sales.

4. RETAIL MARKET PERFORMANCE

Figure 4.4.1: International Comparison - Internet Retailing as Proportion of Total Retailing, 2003-2017



Source: Euromonitor (2018)

One of the reasons for different penetration of internet retailing across countries is differing levels of infrastructural preparedness for retail transformation. The UK, US and Germany have a greater ability to weave innovation into their economic and social fabric, as well as better and more efficient logistics infrastructure and postal services than e.g. Spain. More detail on this is provided in Appendix D.

In all analysed markets Amazon is the dominant player with shares of 9% (Spain) to 46% (US). Amazon shoppers across the globe use the US site and/or local sites (local launches: UK and Germany in 1998, France in 2000 and Spain in 2001). Due to existing transnational internet sales patterns, the arrival of local Amazon sites is no longer a game changer.

In late 2017, Amazon was launched in Australia, with a strong expectation from the local market players that Amazon would shake the Australian market. Instead many local retailers sought to reinvent their strategies to remain competitive and invested into online operations. As Amazon is still in start-up phase in the country, the full force of its operation is yet to be seen (shipping bans from its main site were only lifted in November 2018; Amazon Prime only offers free two-day delivery). As many as 90% of surveyed retailers have not seen any impact of Amazon's launch; 3% have seen positive effects and only 7% noticed a negative impact on their business (Deloitte, 2018). This suggests the entry of global players, such as Amazon, may act as a catalyst to drive up the total internet retail sector.

4. RETAIL MARKET PERFORMANCE

4.5. Summary

The following table summarises the analysed key retail statistics.

Table 4.5.1: Key Retail Sales Statistics (Cumulative Growth, 2004-2017)

	Total Retail Sales	Store-Based Retail Sales	Non-Store Retail Sales	Total Retail Sales	Store-Based Retail Sales	Non-Store Retail Sales	Store-Based Retail Sales
	Cumulative real growth			Cumulative real growth per 1,000 inhabitants			Cumulative real growth psm
US	17%	6%	138%	4%	-6%	112%	9%
UK	4%	-9%	265%	-6%	-18%	230%	-8%
Germany	3%	-1%	44%	2%	-1%	43%	-2%
France	5%	-1%	192%	-2%	-8%	171%	-10%
Spain	-9%	-12%	51%	-18%	-21%	36%	-14%
Australia	28%	18%	460%	3%	-5%	350%	-1%

Source: Euromonitor (2018)

The above analysis suggests that, although at varying pace, e-Commerce should continue to grow with no signs of saturation and with many opportunities for expansion, especially for more sophisticated omni-channel models.

Trends to watch out for include e-Commerce penetration in specific categories (e.g. Grocery in the US) as well as online retailers increasingly infiltrating merchandise categories that were previously thought to be resistant to online competition (apparel, eyeglasses, jewellery). This builds further pressure on bricks-and-mortar retailers in these segments (PwC, 2019c).

5. RETAIL REAL ESTATE INVESTMENT PERFORMANCE

In this section, key measures of retail real estate investment performance, including market liquidity and asset values are investigated.

Given the comparative focus of this research, analysis is based on MSCI annual statistics available for 2000-2017. MSCI data represents a sample of investors, for which the structure and characteristics may differ significantly from the whole of the professionally managed real estate investment market. MSCI sample size varies significantly across the analysed countries. Details of MSCI data coverage, limitations and key measures are included in Appendix B.

All market estimates are based on local currency values adjusted for CPI with 2017 as the base year (see Appendix A).

The retail real estate market, with particular interest in investment in shopping centres, has been seen by professionally managed real estate investors as a safe investment with returns typically outperforming the office sector (up until the GFC). Historically it has been highly regarded for having defensive investment attributes (Skinner, 2007) such as:

- In-built risk diversification through a large number of leases at different terms based on unit size, unit location, type of merchandise and tenant's quality;
- Income security
  - Stable long-term income streams ensured through relatively long leases
  - Long-term trend of positive real rental growth
  - Greater inflation-hedging ability (particularly when assets have inflation-linked rent indexation in leases);
- Generation of additional value through turnover based rents; and
- High residual value of assets.

Shopping centre investment has also offered:

- Ability to deploy relatively sizeable capital through a single transaction (into one asset);
- Relatively efficient/low intensity management through economies of scale; and
- For large shopping centres, benefits of local market quasi-monopolism.

As discussed in Sections 3.1 and 4, the retail market is evolving and retail real estate assets are losing some of these attributes making them less attractive for major investors (MSCI and BNP Paribas Real Estate, 2017).

5.1. Scope

To understand how the retail real estate investment market has evolved since early 2000, analyses were performed to identify changes in investment value and returns.

Market activity including scale of capital flows, vacancy, asset structure, capital concentration and investors' approach to risk were also analysed but no material changes were found or findings were limited in their ability to inform the retail allocation projections. The analysis on capital flows and transaction activity is shown in Appendix H. In brief it shows that transaction activity post-GFC has substantially reduced to a lower but stable level suggesting longer holding periods and a cooler transaction market.

5. RETAIL REAL ESTATE INVESTMENT PERFORMANCE

The analysis was run at two levels of disaggregation:

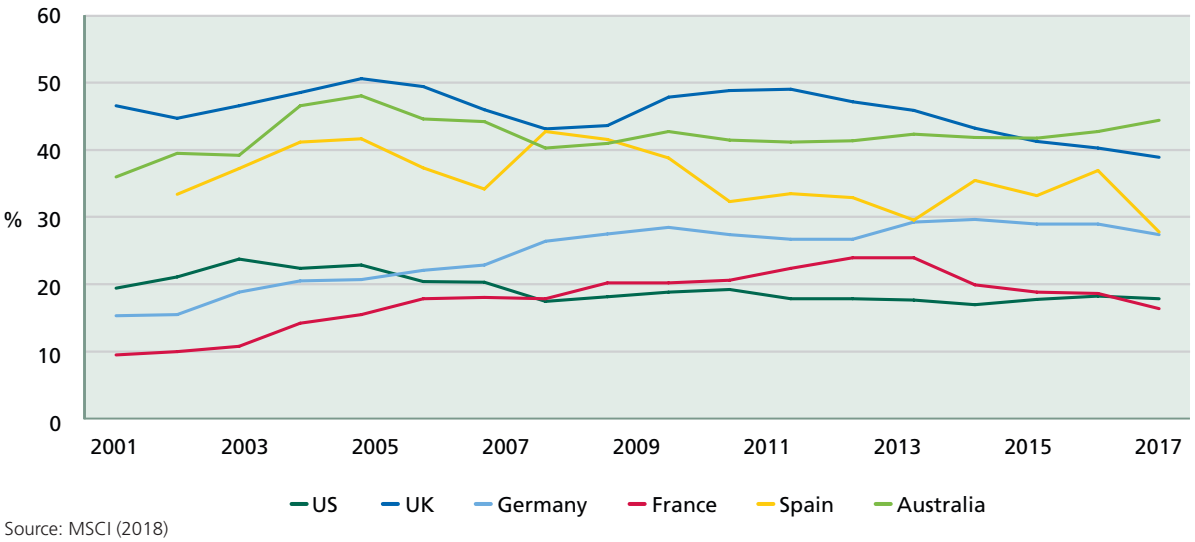
- Whole market sector – retail property sector on a standalone basis, relative to the total market and relative to other major sectors such as office and industrial. The analysis was performed individually for each country in the scope of the research, using a consistent methodology, allowing for direct international comparison.
- Retail market segments – country specific segmentation of the retail sector based on MSCI defined sub-sectors for each territory. This analysis is not fully comparable internationally since the specified segments are not consistent across countries.

5.2. Sectoral Allocation to Retail

The evaluation of the changes in the sectoral allocation to retail was based on estimation of the capital value share of investment in retail assets relative to the whole real estate investment market. For these purposes, breakpoint analysis for linear models was used.

The following graph illustrates the proportion of the market allocated to retail across the six national markets. It is important to note that the data shown is for the MSCI sample of properties in each market. So, while it can be viewed as a proxy for the entire market it is not exhaustive, and differences in MSCI coverage within each country contribute to differences in trends shown. More detail on the limitations of this data analysis is shown in Appendix B.

Figure 5.2.1: Share of Retail as Proportion of Total Real Estate Investment, 2000-2017



Source: MSCI (2018)

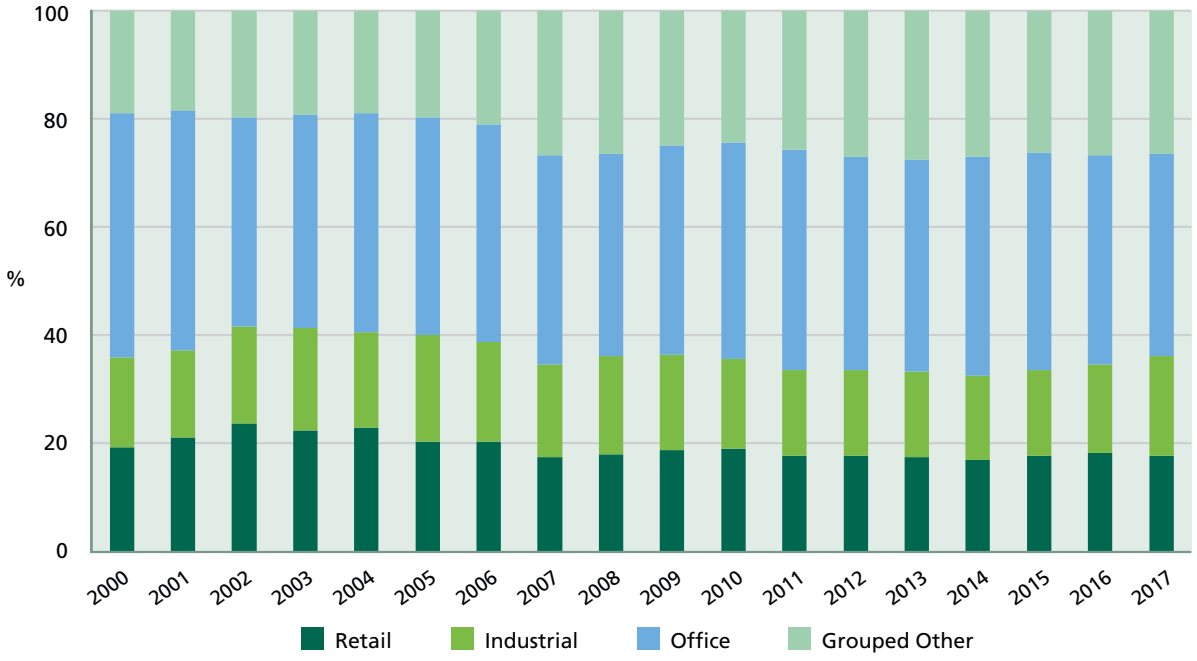
The share of retail in the whole market varies across the countries, with the highest levels having consistently been in the UK and Australia at around 40%. These are followed by Spain, where retail constitutes some 35% of the market. Data for other countries suggests market share below 30%.

5. RETAIL REAL ESTATE INVESTMENT PERFORMANCE

5.2.1. US

The allocation to retail in the US fell from a peak of 24% in 2002, down to 17% in 2007. Retail's share in the decade since then has seen relative stability. The office sector has dominated allocations with a 37.1% share in 2017, followed by grouped other at 26.6%, industrial at 18.5% and retail at 17.8%. This market is well diversified, with a relatively high share of grouped other suggesting maturity of the market for hotel, residential and other investments.

Figure 5.2.2: Share of Capital Value by Sector – US, 2000-2017



Source: MSCI (2018)

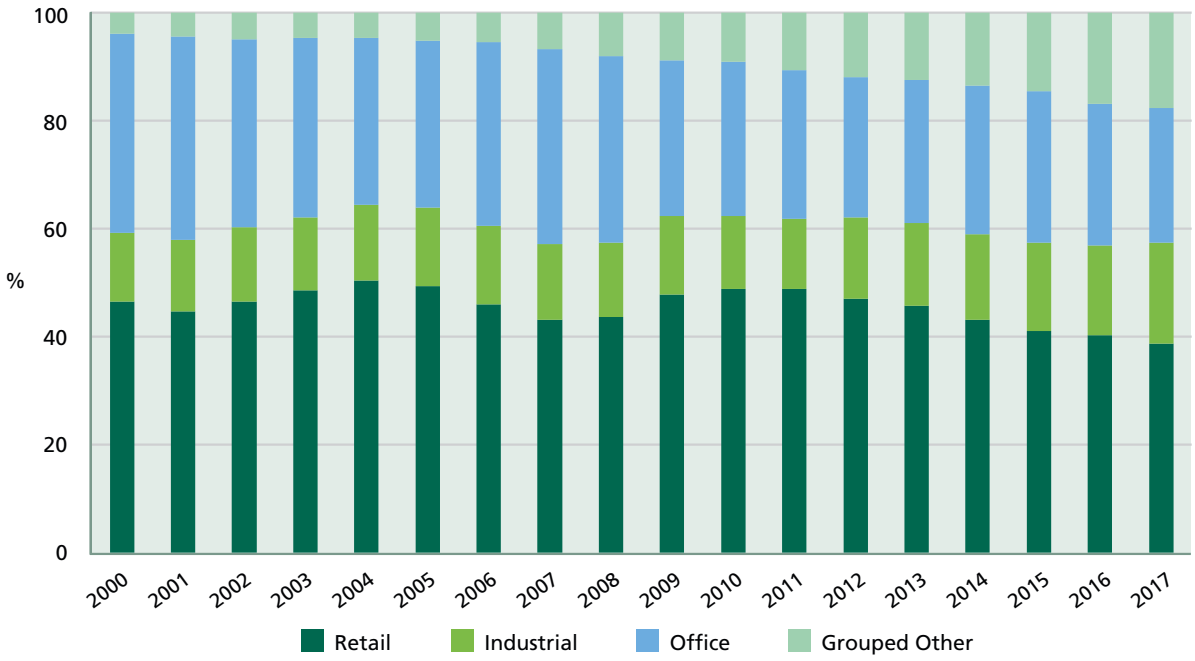
5. RETAIL REAL ESTATE INVESTMENT PERFORMANCE

5.2.2. UK

Between 2000 and 2011, retail market share fluctuated cyclically between 43% and 50%. However, change-point analysis indicates a structural break in 2012 resulting in market share consistently declining from a peak of 49.0% in 2011 to 38.9% in 2017. Notably, preliminary results for 2018 suggest a further fall of retail allocation to some 35.1%.

The UK market is still dominated by investment in retail; the next largest sector is office at 24.7% in 2017, followed by industrial at 18.7% and grouped other at 17.7%. There has been increasing diversification in favour of the grouped other sector, which has shown a steady increase since 2006 from 5.5% to the current 17.7%.

Figure 5.2.3: Share of Capital Value by Sector – UK, 2000-2017



Source: MSCI (2018)

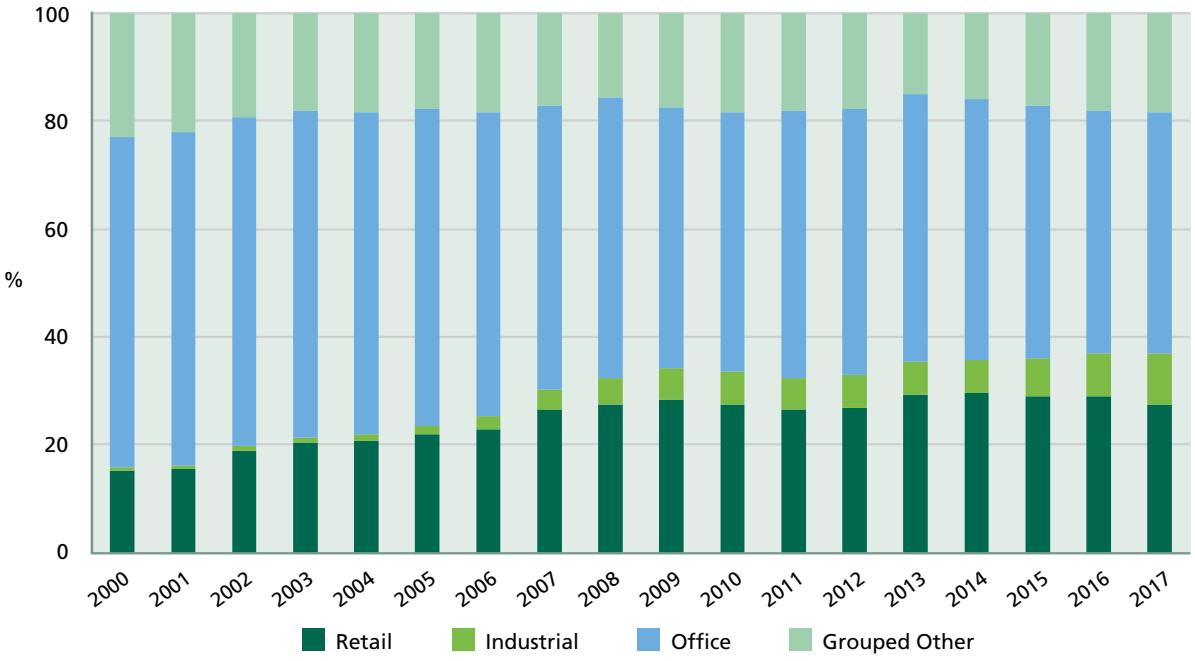
5. RETAIL REAL ESTATE INVESTMENT PERFORMANCE

5.2.3. Germany

Between 2000 and 2009, the market share for retail grew dramatically from 15.3% to 28.4%. Since 2009, it has been relatively stable at between 26.7% and 29.6%, with the 2017 level of 27.4%.

The German market is dominated by investment in the office market with the 2017 share at 44.8%. The market allocation has been transitioning from office to both retail and industrial (9.5% in 2017, up from 6.1% in 2014). However, the more recent structural change may be attributable to changes in market coverage.

Figure 5.2.4: Share of Capital Value by Sector – Germany, 2000-2017



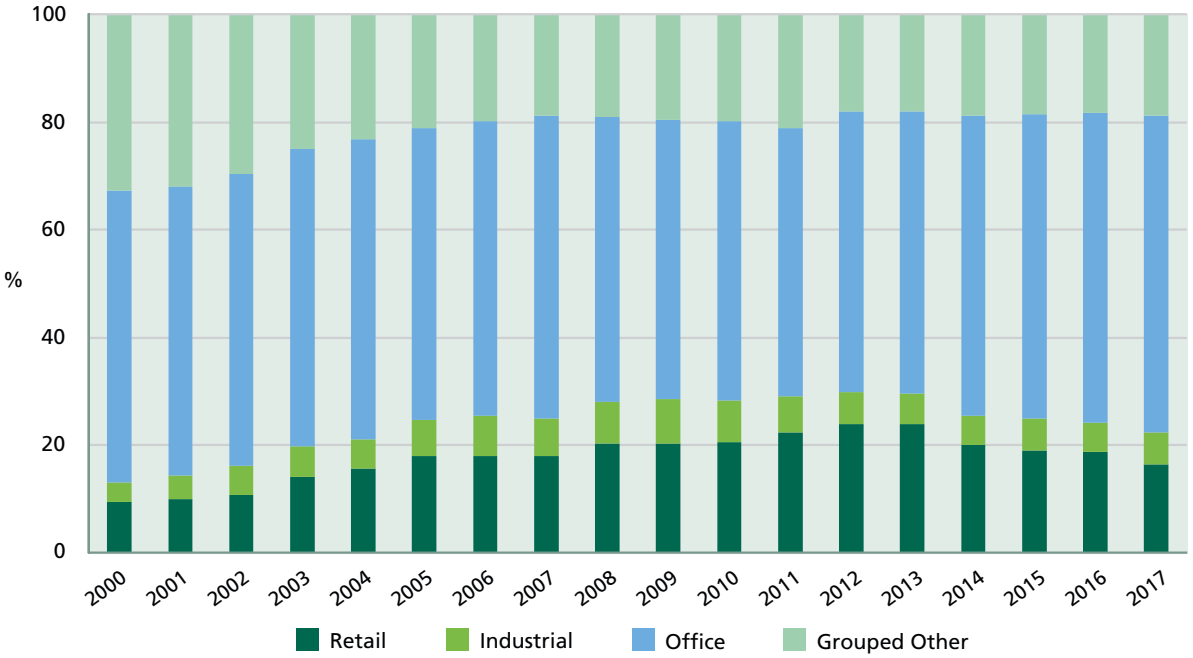
Source: MSCI (2018)

5. RETAIL REAL ESTATE INVESTMENT PERFORMANCE

5.2.4. France

Between 2000 and 2012, retail's market share grew from 9.4% to 23.9%. The change-point analysis indicates a significant trend reversion in 2013 resulting in market share declining again, to 16.4% in 2017. The French market is dominated by investment in the office sector – its share has regularly been above half (58.7% in 2017).

Figure 5.2.5: Share of Capital Value by Sector – France, 2000-2017



Source: MSCI (2018)

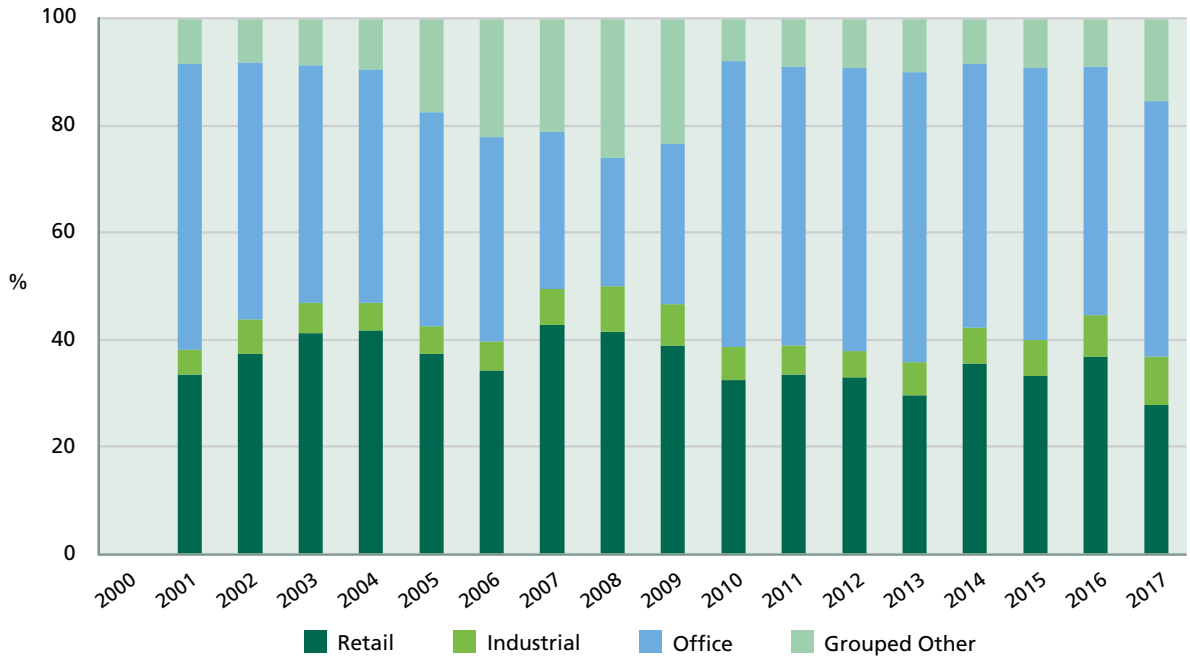
5. RETAIL REAL ESTATE INVESTMENT PERFORMANCE

5.2.5. Spain

The change-point analysis indicates no clear single changing trend, due mainly to repeated fluctuations. This is likely to be partially attributable to the fluctuating market coverage of MSCI data as well as the relatively shallow market as compared with countries like the UK.

As with France and Germany, the office sector has tended to have the largest share in the market, at 47.6% in 2017. This is followed by retail at 27.8%, grouped other at 15.6% and industrial at 9.1%. Retail's decline in allocation between 2016 and 2017 may have been affected by the reduced market coverage of MSCI.

Figure 5.2.6: Share of Capital Value by Sector – Spain, 2000-2017



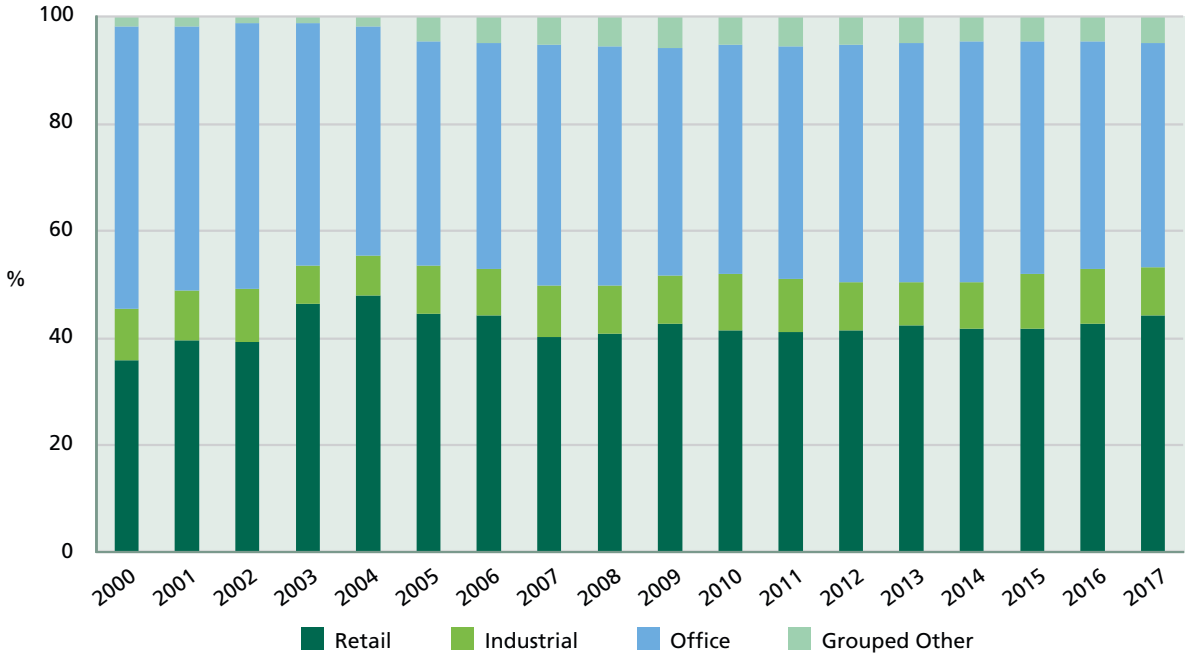
Source: MSCI (2018)

5. RETAIL REAL ESTATE INVESTMENT PERFORMANCE

5.2.6. Australia

The retail sector's share of the Australian real estate market grew from 36% in 2000 to a peak of 48.1% in 2004, before falling back down to 40% in 2007. In the decade since then, there has been modest growth, up to 44.4% in 2017. Both the retail and office sectors have dominated allocations, each tending to have seen shares of over 40% of the investment market. Notably, despite the expected Amazon impact, the 2018 results suggest no material drop in retail allocation.

Figure 5.2.7: Share of Capital Value by Sector – Australia, 2000-2017



Source: MSCI (2018)

5. RETAIL REAL ESTATE INVESTMENT PERFORMANCE

5.2.7. Conclusions

Analysis of the capital value share of investment in retail assets (defined as a percentage of the whole real estate investment and relative to other sectors) suggests mixed results for 2000-2017. A summary is provided in the following table.

Table 5.2.1: Retail Allocation – Conclusions

Country	Comments
US	Despite the widely discussed challenges faced by the sector, the analysed data suggests that retail's share of real estate portfolios in the US has been relatively stable in the decade since the GFC.
UK	Despite the size of the retail investment market in the UK growing since the GFC, the sector has seen a falling share (since 2011) allocated to it by investors, with industrial and the non-mainstream segments gaining in popularity instead.
Germany	In Germany, the share allocated to the retail sector increased up until the GFC. Since then, retail's share has been relatively stable.
France	While the retail sector saw significant growth in property market allocation in France up until 2012, it has fallen back again in the last five years. However, the evolution in allocation may be materially driven by changes in the MSCI sample structure and falling market coverage.
Spain	The Spanish data does not give clear results with respect to trends in allocations to the retail sector.
Australia	In the decade since 2007, the share of Australia's real estate market invested in the retail sector has grown.

With the challenges in the bricks-and-mortar retail market, this section has considered whether investors have reacted by reducing their exposure to retail. As described above, apart from the UK and arguably France, portfolio investors have not systematically shifted away from retail towards other sectors, so far at least. In the UK, even though retail's share of the market is falling, it is still relatively high when compared to other countries (especially considering the high proportion of online sales).

There may be some valuation smoothing, driven by anchoring, and therefore the above allocation may not fully reflect the anticipated valuation corrections. It is important to note that pricing in many parts of the listed market has started to factor in a reduction in retail values. Hence, one may expect to see owners of retail property considering challenging decisions about allocation levels going forward.

5.2.8. Retail Sub-sector Allocation

On the whole, there is a slight tendency towards larger assets in some of the analysed markets. However, since the GFC no major sub-sector shifts have occurred in the retail investment sector. Detailed analysis is provided in Appendix F.

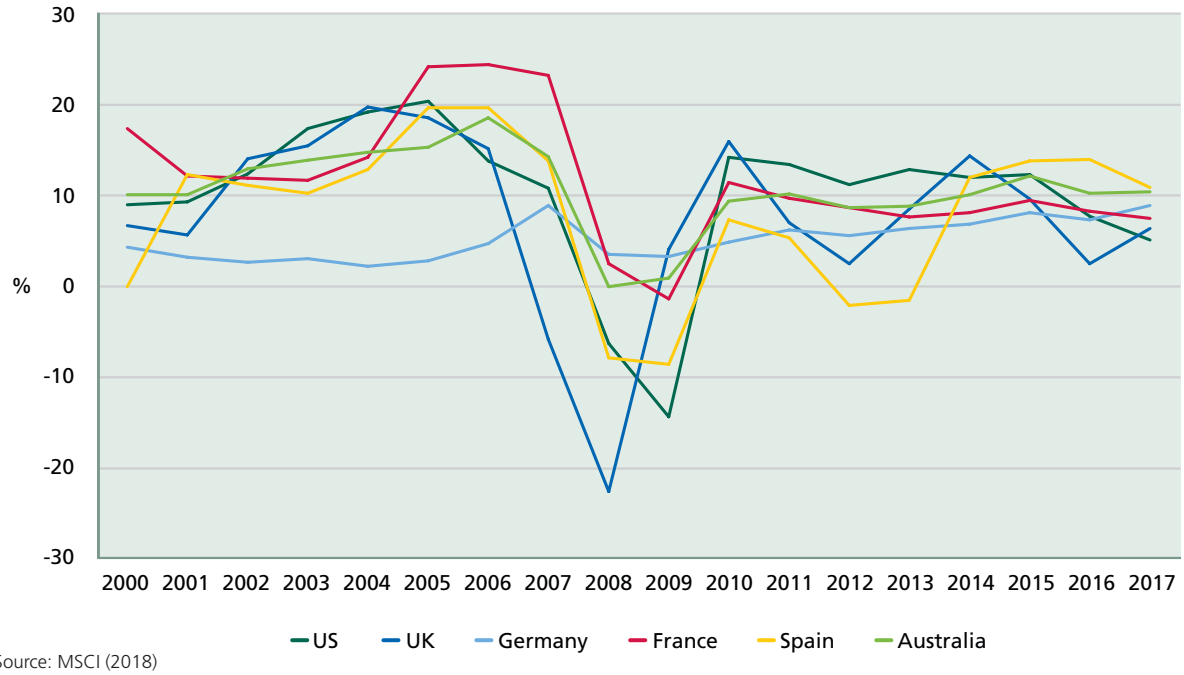
5. RETAIL REAL ESTATE INVESTMENT PERFORMANCE

5.3. Returns from Retail Real Estate Investment

This section presents an assessment of investment returns from retail. The news from the last few years of dying malls, vacancies and retailers' bankruptcies in the US has led many market players to believe that the retail market is about to collapse and that the US 'disease' may spread in Europe and elsewhere. In line with this prophecy IPF (2019) suggests that in the UK, due to structural change and challenging occupier markets, the retail sector will underperform office and industrial with weaker total returns over coming years.

Total return on investment in real estate suffered a severe shock in the GFC. This impact was felt across all sectors, not just retail. Total returns from retail real estate across the analysed countries then improved significantly, bouncing back to a broadly more stable level. However, the total return is still largely below the pre-GFC rates and in some markets like the UK and US a clear fall is observed since 2015.

Figure 5.3.1: Retail Investment Total Annual Returns, 2000-2017



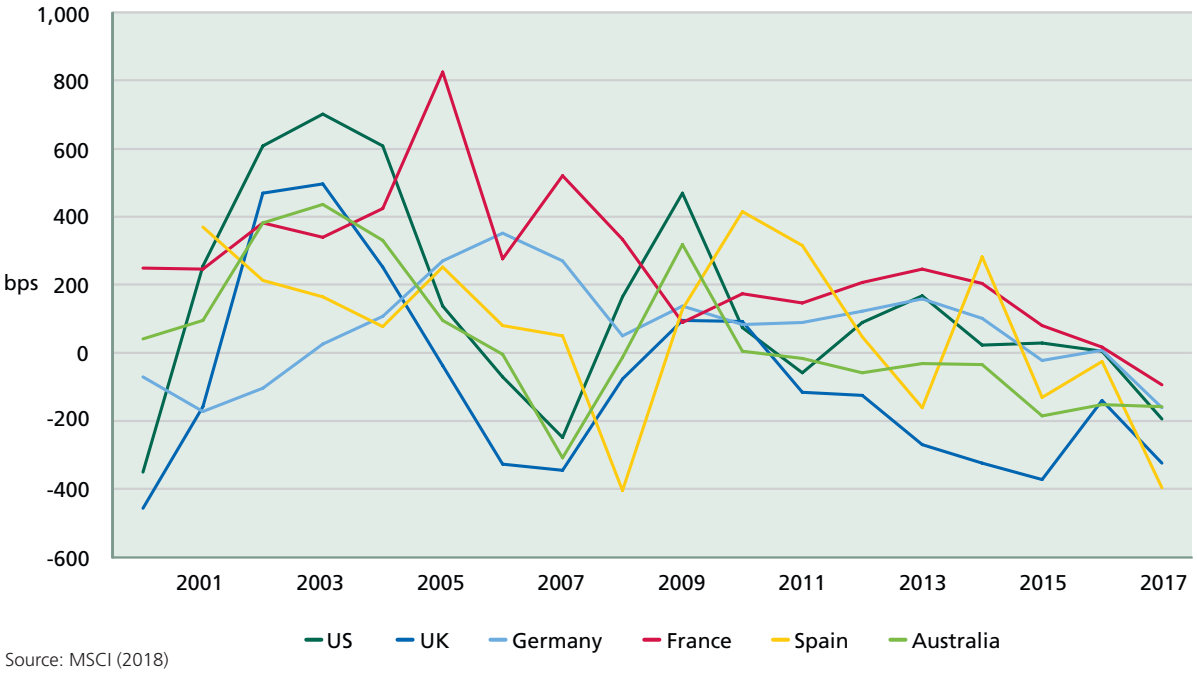
Source: MSCI (2018)

In all analysed countries the total returns from retail investment have been below the All Property total returns recently. UK and Spanish total retail returns in 2017 were 300-400bps below the market benchmark; the difference in other countries was generally sub 200bps, with France just below 100bps.

In the UK, retail was the worst affected sector during the GFC, when total returns dropped substantially below zero. They recovered to nearly the pre-GFC rate, but have since slipped. The preliminary data from 2018 suggests that the total return from retail in the UK is declining and the gap between retail and the best performing industrial sector is growing.

5. RETAIL REAL ESTATE INVESTMENT PERFORMANCE

Figure 5.3.2: Retail Total Returns Relative to All Property Total Annual Returns, 2000-2017



Source: MSCI (2018)

Appendix G provides detailed analysis of total returns from retail real estate investment.

5.4. Summary

Retail is fast evolving. The professionally managed real estate investment market has become more vulnerable, but investors have arguably been slow to react through reducing their allocations to the sector.

- Despite the widely discussed challenges facing the retail sector, most of the analysed countries have not seen dramatic changes in the property investment share allocated to retail.
- In the UK a falling trend in retail's share of investment allocation has been observed, from an exceptionally high level of close to 50% in 2011. UK prospects are examined in more detail in Appendix L, as a possible fore-runner for other markets.
- While the transaction market is still highly transparent and very liquid, the transaction activity following the GFC has dramatically fallen to some 10-15% of properties (by capital value), changing hands each year.
- Following a downward trend in total returns, retail real estate has been underperforming the All Property average and the gap is widening.

6. PROJECTIONS

6.1. Methodology

6.1.1. Statistical Methods

Given the data limitations, Box-Jenkins Auto-Regressive Integrated Moving Average (ARIMA) models, as described by Newbold and Granger (1974), of univariate time series have been chosen for estimation purposes. Furthermore, due to the limited number of data points, it was not possible to use traditional out-of-sample measures of fit to decide on the appropriate ARIMA model to use. Akaike Information Criterion as described by Hyndman and Khandakar (2008), was used to select models for projection purposes in a consistent manner across all countries in the study.

These methods were applied to project internet retail sales, in-store retail sales, total retail sales and then to project the subsectors. Confidence intervals were used alongside point projections to inform the design of the scenarios.

6.1.2. Model Structure and Limitations

To project future allocation of funds for retail real estate investment, store and non-store based retail sales for 2018-2030 have been projected. Based on these, demand for retail space has been projected for the same period.

Three scenarios were considered:

- Scenario 1: Base case – Point projection using ARIMA modelling
- Scenario 2: Accelerated adoption of e-Commerce – Using upper range for projected internet sales (80% confidence interval)
- Scenario 3: Slower adoption of e-Commerce – Using lower range for projected internet sales (80% confidence interval)

Detailed model specification, its limitations and assumptions are provided in Appendices B and I. The analysis was run before end-2018 data was available. Hence, all projections are provided in 2017 real terms and in USD using 2017 exchange rates (see Appendix A). Internet sales projections are provided in Appendix J for base case (scenario 1) and in Appendix K for scenarios 2 and 3.

As noted earlier, MSCI data has been used to represent the size of the retail property investment market in each country. As such, projections resulting from the model represent how the size of the MSCI sample of retail property may change; these can be viewed as proxies for the entire market but differences in MSCI coverage within each country contribute to limitations and differences in trends shown. More detail on the nuances and limitations of MSCI data is provided in Appendix B.

6. PROJECTIONS

6.2. Projections of Future Allocation to Retail Real Estate Investment

6.2.1. Scenario 1 - Base Case

The demand for store-based retailing is projected to fall in the US, UK and Germany (cumulative fall by 20%, 10% and 6% respectively between 2018 and 2030).

Notably the relatively moderate reduction of demand in the UK is largely due to the positive impact of immigration. Given recent political instability these projections may require revision (7% cumulative growth between 2018 and 2030). In the US, the 8% (between 2018 and 2030) population growth does not seem to compensate for the drop of demand for retail space.

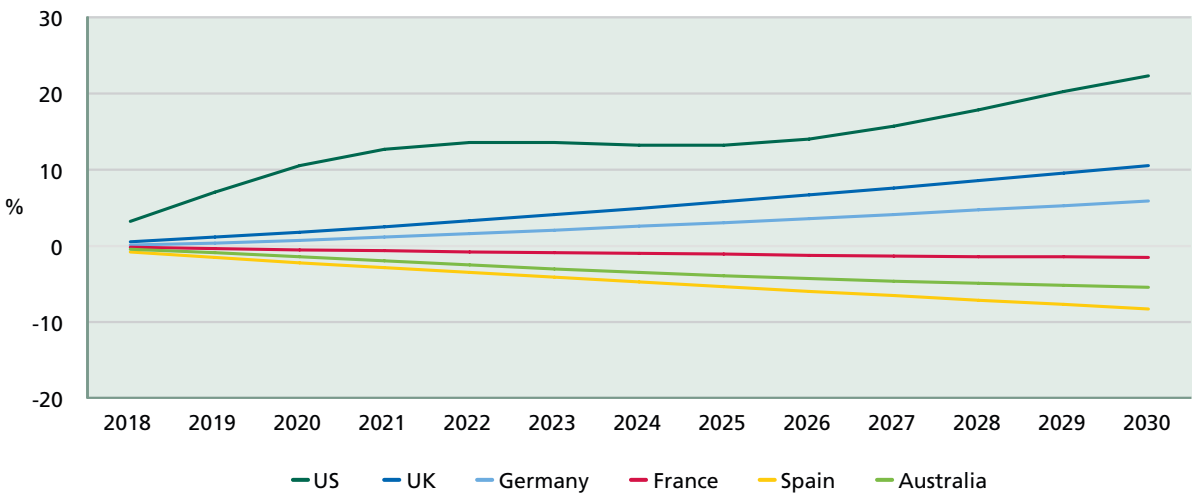
On the other hand, despite expected reduction in population (cumulative by 2% between 2018 and 2030), in Spain store-based retailing is expected to increase by 7% over the period 2018-2030, mostly driven by the economic revival. Moreover, in Australia store-based retailing is expected to grow in total by 5%, driven by immigration growing by 21%. In France very minor cumulative growth is expected (1%).

When considering these projections it is important to note that the 80% confidence intervals for Spain, France and the US are relatively broad (+/-85%, +/-41% and +/-20%), reflecting variability in data inputs.

Table 6.2 1: Scenario 1 – Base Case – Cumulative Change in Requirement for Retail Space between 2018 and 2030

Base case	AU	US	UK	FR	DE	ES
Cumulative growth between 2018 and 2030	5%	-20%	-10%	1%	-6%	7%
80% confidence intervals	+/- 7%	+/- 20%	+/- 2%	+/- 41%	+/- 2%	+/- 85%

Figure 6.2.1: 2030 Projection of Cumulative Redundant Retail Space, 2018-2030

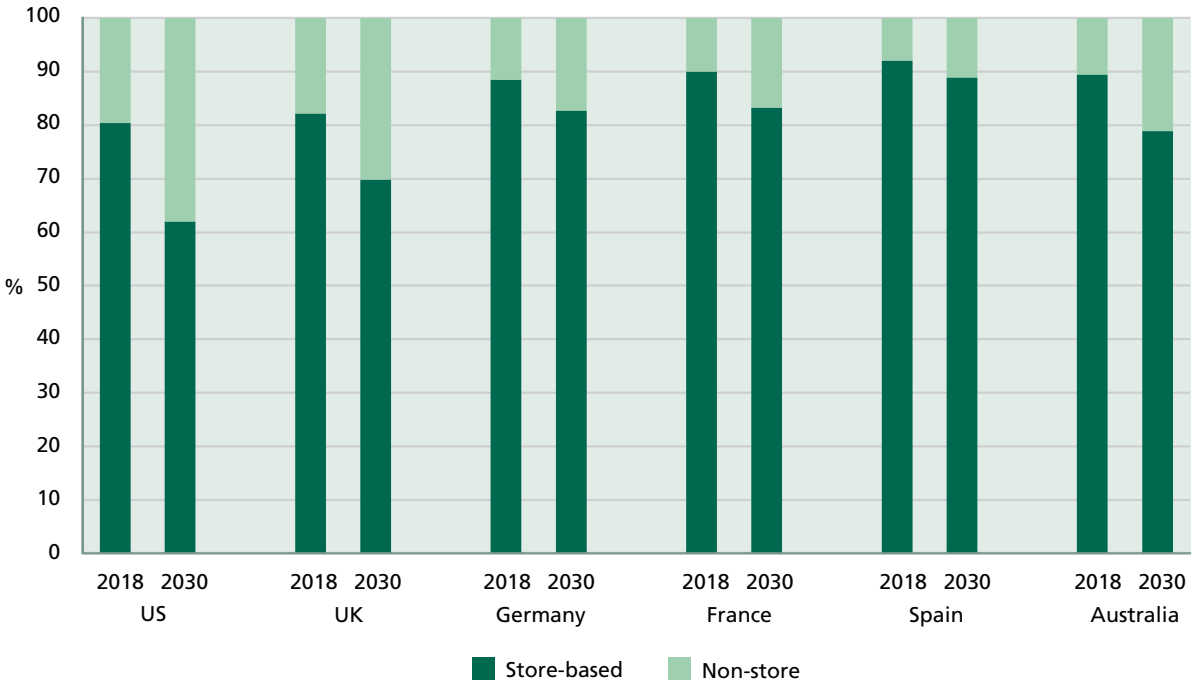


Source: Euromonitor (2018)

6. PROJECTIONS

The following graph represents the falling share of store-based retail in total retailing between 2018 and 2030. Notably the most significant reduction is expected in the US and UK, followed by Australia.

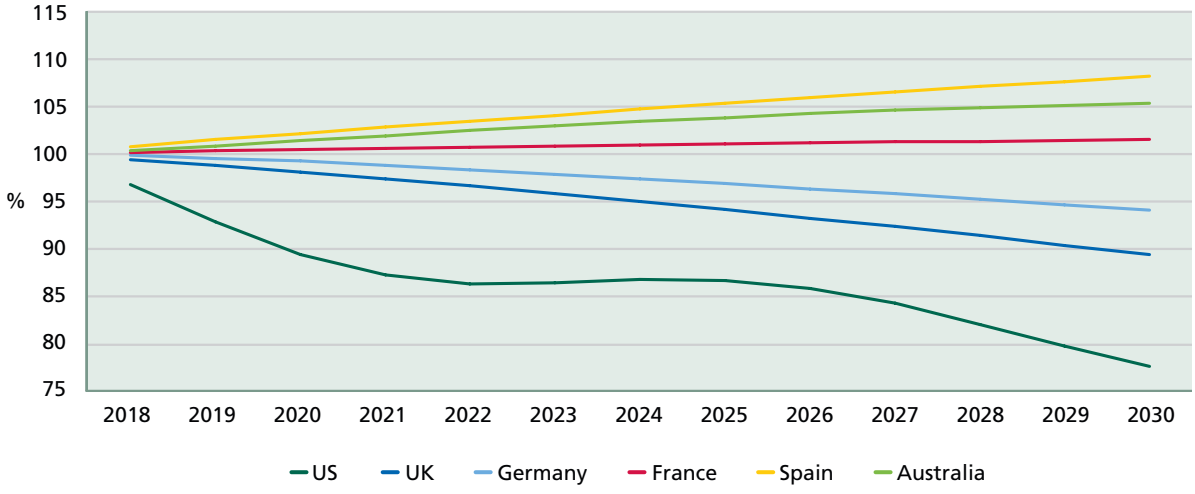
Figure 6.2.2: Projected Share of Store and Non-store based Retail, 2018 and 2030



Results

Based on the 2017 capital value invested in retail real estate, the capital value to be retained in the retail sector of the MSCI sample as well as that to be withdrawn from the retail sector have been projected for 2018-2030.

Figure 6.2.3: Projected Cumulative Retention of Retail by Capital Value, 2018-2030, Base Case Scenario



6. PROJECTIONS

While Spain, Australia and France are projected to see further growth in the retail property investment market, the model suggests that Germany, the UK and particularly the US will see shrinkage. Anticipated e-Commerce penetration is the major factor driving these differentials, with the US and UK hit hardest but the likes of Spain, with a much lower prevalence of e-Commerce, holding up much better.

US

In the US, despite population growth in total by 8% (between 2017 and 2030), some 22.4% of retail investment will become redundant by 2030. This is the equivalent of MSCI's US Property Index seeing the sector shrink by USD15.5bn. However, this will not be a smooth process. A more rapid decrease is expected up until around 2021, stabilisation between around 2022 and 2025, followed by a more significant reduction after 2026. This rapid decline reflects the current oversupply of retail in the US, with the US echoing the rise of e-Commerce seen in the UK. While this is a dramatic reduction, it is nowhere near to Herman's (2018) projections that by 2023 just 50% of today's malls will survive.

UK

In the UK, despite the expected population growth (in total by 7% by 2030), a steady falling trend is expected to lead to a fall in the size of the retail investment market of 10.6% by 2030 (i.e. nearly GBP9bn based on MSCI's UK Property Index).

Germany

In Germany, the retail investment market is expected to shrink in total by nearly 6% by 2030.

France

The projected increase in France, which totals 1.5% over the next 13 years, equates to the value of the retail sector in MSCI's French Property Index growing by EUR337m. Given the expected population growth (in total by 4% by 2030) and uncertainty around the long-term projections, the French growth does not seem to be material.

Spain

In Spain, despite the expected population fall (in total by 2% by 2030), retail real estate is projected to grow by 8.3% by 2030, which is equivalent to EUR403m based on MSCI's Spanish Property Index. Growth in Spain is fuelled by the current economic recovery, which may not hold firm in the long term as the model is driven by the recent recovery from the GFC. Furthermore, the relatively slow adoption of e-Commerce in Spain thus far is probably partially related to entrenched cultural behaviour, indicating that there is little reason to assume a rapid adoption of e-Commerce. The model produced reflects the variability of Spanish performance over the period of the study, resulting in highly uncertain projections.

Australia

Australia is the only analysed country where net capital value to be still invested into retail is material due to retail growth that is projected to come from increased population. Here projected cumulative growth is 5.4% by 2030, equivalent to AUD4.6bn based on the value within MSCI's Australian Property Index. It is expected that most new schemes will be located in new residential areas predominantly on the fringes of Melbourne and Sydney. Due to evolving consumer needs the existing stock will also need to adjust, which is likely to include closure and repurposing of lower performing retail assets.

6. PROJECTIONS

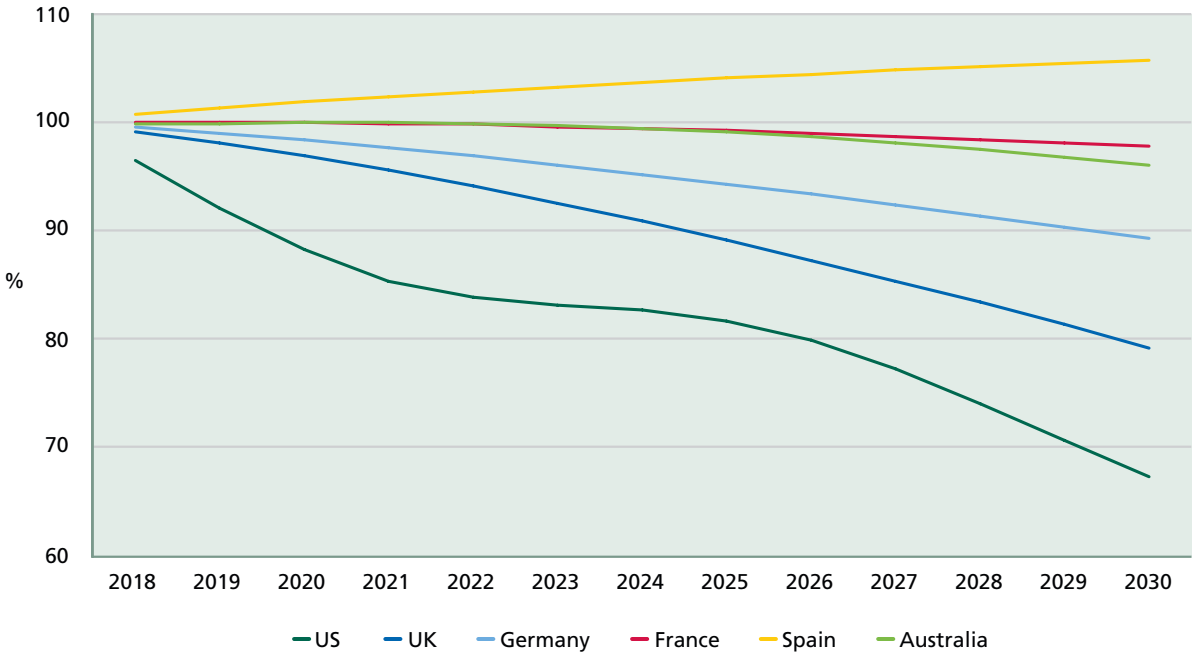
6.2.2. Scenario 2 - Accelerated Adoption of e-Commerce

Scenario 2 uses the upper 80% confidence interval for internet sales, translating into a faster and stronger fall of demand for store-based retailing. This suggests a more significant reallocation of investment into non-retail real estate investment products.

Under this scenario it is projected that in all countries except for Spain the size of the retail real estate investment market will fall.

The most dramatic decrease is projected in the US with a fall of 33% between 2018 and 2030. This amounts to USD22.6bn based on the value in the MSCI sample currently. The second strongest fall is expected in the UK, by 21% – a fall of GBP17.6bn based on MSCI's UK sample. France will lose 2.2%, while the German market will shrink by 10.7%. Despite population growth, even Australia will no longer require some 4% of retail property. In Spain, growth is projected at 6%.

Figure 6.2.4: Projected Cumulative Retention of Retail by Capital Value, 2018-2030, Accelerated Scenario



6. PROJECTIONS

6.2.3. Scenario 3 - Slower Adoption of e-Commerce

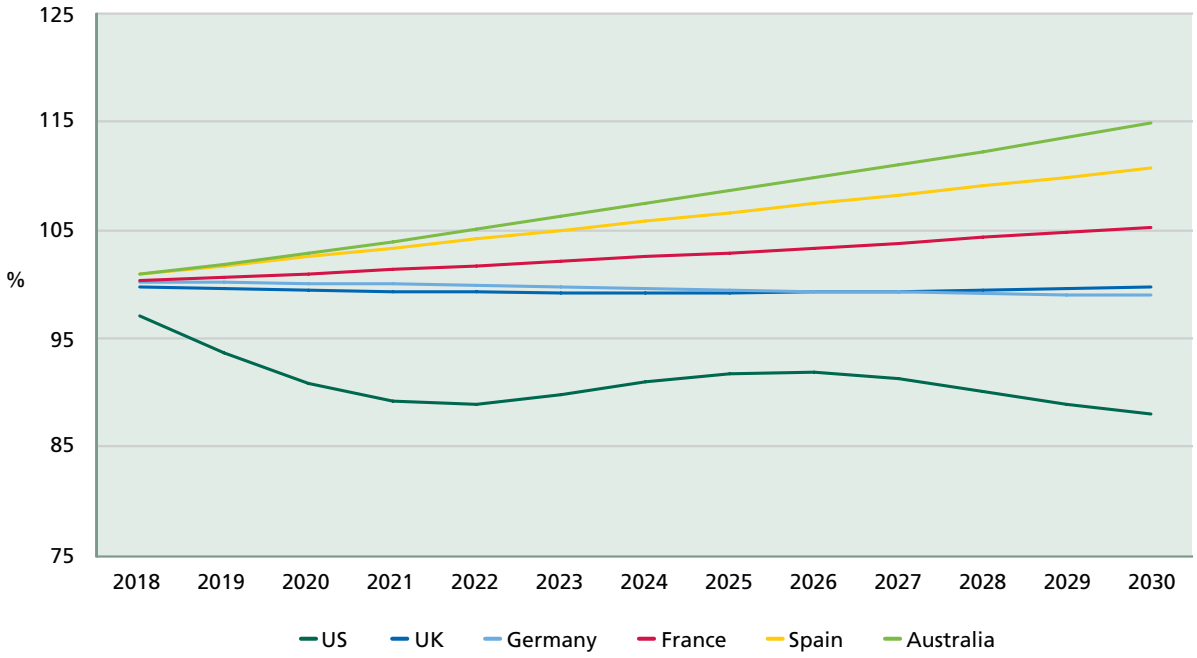
Scenario 3 uses a lower range for internet sales at the 80% confidence interval, translating into a slower and weaker fall of demand for store-based retailing. This suggests a lower impact on reallocation of investment into non-retail real estate investment products.

Under this scenario only the US suffers significant decline in the retail market, 12% by 2030.

In the UK and Germany falls totalling 0.3% and 1.1% respectively are anticipated, which given the statistical significance, indicates immaterial falls.

Australia, supported by strong population growth, will see its retail property market grow 15% by 2030 under this scenario, while growth of 5% is projected in France and 11% in Spain.

Figure 6.2.5: Projected Cumulative Retention of Retail by Capital Value, 2018-2030, Slower Scenario 3



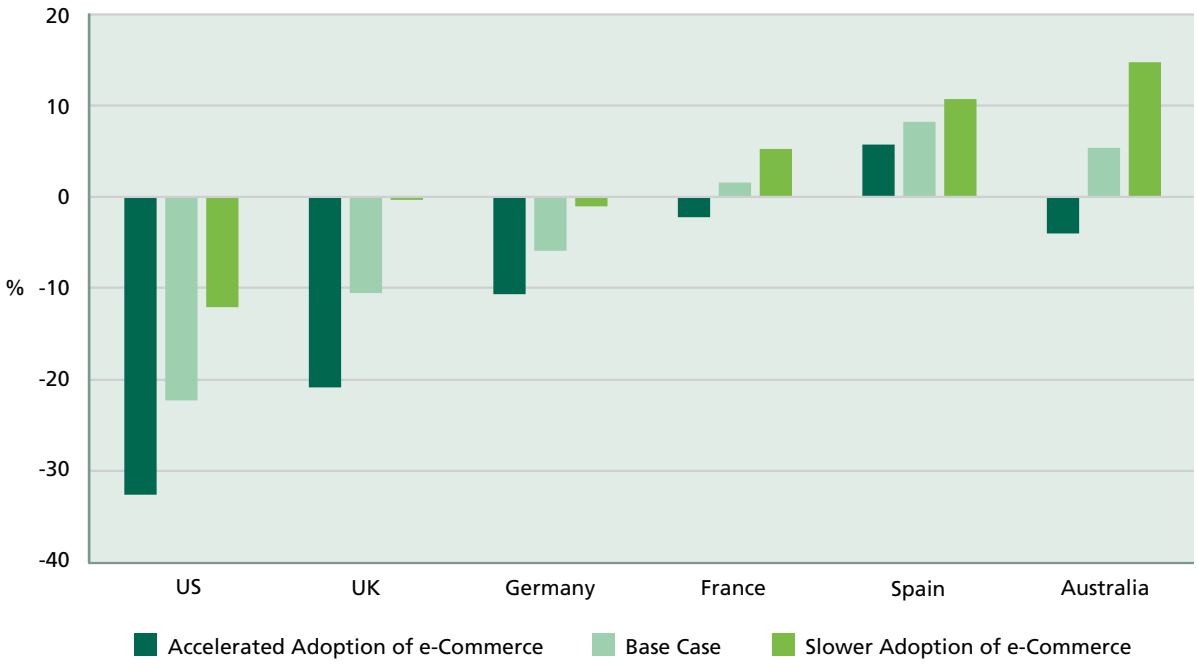
6. PROJECTIONS

6.3. Summary

Under all scenarios, the UK and US are expected to suffer major reductions in demand for bricks-and-mortar retailing that, even considering population growth, will drive significant closures or repurposing of existing retail schemes. Similar, but gentler effects are expected in Germany, while in France the effects are likely to be minimal. Conversely, in Australia, under Scenario 1 and 3, material growth is projected. Growth is also projected in Spain but the data volatility in Spain may limit the reliability of these projections.

The following graph summarises projections of consequent net withdrawal and net investment in retail real estate by 2030 assuming no changes to the total real estate investment market size.

Figure 6.3.1: Projected Changes in Retail Investment by Capital Value (2018-2030) – Comparison of Scenarios



US

Under all scenarios between 2017 and 2030 the US retail real estate investment share is expected to substantially shrink (assuming no changes to the total market size). Under Scenario 2 – Accelerated adoption of e-Commerce – the allocation to retail is projected to fall to two thirds of its current level (from 17.8% to 12.0%. Scenario 3 - Slower adoption of e-Commerce suggests a fall to 15.7%, while the Base case (Scenario 1) implies a fall to 12.0%.

UK

In the UK a significant fall is expected to 34.8% under Scenario 1 and to 30.8% under Scenario 2. Under Scenario 3 no material changes in allocation are projected (38.9% in 2017 versus 38.8% projected by 2030). Given the recent events observed in the UK market, Scenario 2 seems to be the most likely one.

6. PROJECTIONS

Germany

In Germany, similar to the UK, Scenario 3 will result in no material changes to the allocation to retail (27.4% in 2017 versus 27.1% projected by 2030). Scenario 1 is projected to result in a gentler reduction that in the UK, bringing the retail share down to 25.8% and under Scenario 2 to 24.5%.

France

In France the scenarios project gentler impact than in Germany with a minor growth of retail allocation under Scenario 1 (16.6% projected by 2030 from 16.4% in 2017) and Scenario 3 (17.2%) and a minor reduction of retail allocation under Scenario 2 (16.6%).

Spain

The Spanish market has recently been enlivened. Hence, the model projects growth of retail allocation under all scenarios from 27.8% in 2017 to 30.7% by 2030 under Scenario 3 and to 30.0% and 29.4% under Scenarios 1 and 2 respectively. Note that in percentage terms these results may indicate a significant increase. However, given the market size, the additional value to be allocated to retail is very low compared to the other analysed countries.

Australia

In contrast to the above, in Australia under Scenarios 1 and 3 the population growth is expected to drive the growth in e-Commerce (growth from 44.4% in 2017 to 46.8% and 50.9% respectively). Scenario 2 is projected to reduce the retail allocation to 42.6%.

These findings suggest significant redeployment of released capital will be required in the US under all scenarios and in the UK under most scenarios. Smaller redeployments under most scenarios will also be needed in Germany. In general the direction of change (except for France) is not affected by the different scenarios presented but the scale of projected reallocations is highly sensitive to internet growth assumptions. Investors will need to monitor and adjust rapidly to future trends in e-Commerce and be prepared to divest funds. Note that the net withdrawal from the retail sector of the MSCI sample of the professionally managed real estate investment market may be associated with both conversions of retail assets into other uses and disposal of surplus assets to market players outside this market. The implications of the requirement for reallocation are described in the following section.

The limitations of constructing time-series models based on limited historical data from a sample that does not reflect the entire market should not be overlooked; the sample studied here is representative of, at best, the professionally managed real estate investment market. Furthermore, the model has multiple points of uncertainty that are not independent of one another, thus deviations from the model are likely to be compounded and magnified over time.

The model does not consider likely to occur temporary market disequilibria, while the market is adjusting to a constant reduction of surplus retail space.

7. FUTURE IMPLICATIONS

This research suggests that technological change and demographic shifts are expected to drive a significant reduction of retail space in the UK and US. The reduction is likely in all market segments, from single-store high street shops to large-scale super-regional schemes. Redundant property of each type may follow different pathways, with many retail properties eventually converting into other uses.

In the long run, the dramatic reduction will need to be accompanied by market adjustment, where all players (including those outside the MSCI samples) rationally divest from the retail market and collectively reduce the amount of surplus retail space. This study suggests that the reduction will be achieved through a combination of conversion into other uses and improvement of other schemes, which are located in attractive catchment areas. Even in markets like Spain and Australia where further growth in the retail sector is projected, there will also be closures and redevelopments of existing economically obsolete schemes. Detailed implications for the UK are provided in Appendix L.

This section first looks at long-term retail allocation and evolution of retail, before considering alternative real estate investment sectors.

This research is limited to an exploration of the MSCI samples, which represent players proactively managing their real estate portfolios. As such, it considers what investors should do with their retained retail investments and which other property investments may benefit from reallocation away from retail. It is recognised that property conversions will take time, and in many cases the existing, albeit increasingly less efficient, retail use may continue to reflect the highest and best use of the property vis-à-vis other uses. Retail property assets may also move in and out of managed portfolios. It is possible some proceeds from the sale of retail property investments will need to be deployed outside the analysed six markets or completely outside of the property market (e.g. into other asset classes such as equities, bonds or wider infrastructure).

7.1. Long Term Retail Allocation and Retail Evolution

E-Commerce is projected to continue cannibalising physical retail across all market segments. Retailers will be looking more seriously at streamlining their store portfolios, substantially reducing their footprint and may also turn a significant portion of their space into brand making and experience environments rather than transaction orientated space. This could leave investors with empty units and rents falling dramatically.

7.1.1. Retail Portfolios

With falling demand in mind, investors are expected to focus on building more resilient portfolios through strategies such as increased diversity, portfolios with less retail or high performing retail and more high return alternative assets to pre-empt retail shrinkage.

Martin Brühl, former RICS President, referring to the prolonged market recovery and markets on the verge of slipping into another downturn, stated: "People with short-term memories are making long-term investment decisions. The market will come down at some point, and we need to look at how we prepare our portfolios so they are ready for this" (Brühl, 2019).

7. FUTURE IMPLICATIONS

Upgrades and Re-malling

Rigid sector definitions now used (office, retail, and industrial) will become blurred, multi-purpose facilities will increase in importance and there will be fluid changes of use requiring flexible planning regulations and inventive design. Investment in upgrades will also be needed to support transactions for older property. Hence, investors holding retail property have to consider and time all improvement options to ensure their additional costs are justifiable in view of falling demand for store-based retail.

Few existing schemes keep up with the changes required to thrive on an ongoing basis. Hence, "re-malling" (complete redesign of existing malls to retain dominant retail use and add other uses) may be a solution in locations where demand is expected to remain strong. Re-malling has featured in the US for the last decade (e.g. Assembly Square Mall). In the UK many schemes are overdue for such changes and in the other analysed countries pre-emptive action may prevent future erosion of retail.

Carpenter (2017), following up on previous research by McAvey (2016), shows that size has become a major factor in how centres are reinventing themselves. Strategies for large and small centres bring increasing polarisation, with the middle ground expected to lose out. For larger centres, a good leisure, food and beverage mix is still considered a positive overall strategy, while for smaller, neighbourhood centres there is a move towards building identity through community uses.

City Centres

McDonald and Swinney (2019) suggest that the secret to thriving modern city centres is lower reliance on shops. They note that city centres with fewer vacancies typically have around a quarter of their units used for food and leisure. Strong city centres have much lower shares of retail floor space than weakly performing ones (18% versus 43%) and significantly larger shares of office space (62% versus 23%). High-skilled office jobs create demand for restaurants, bars and other service and leisure activities largely immune to e-Commerce.

To thrive, in the long run city centres have to adapt into activity-based community gathering places with substantially reduced amounts of retail space, where the surplus retail will be replaced with leisure, arts, culture, health and social care services as well as residential and office space.

There may be a requirement for local and central government intervention and financial support. The Communities and Local Government Committee in the UK (House of Commons, 2019) suggests funding from the Future High Streets Fund. However, the optimal use mix will be determined by specific local demand and there is also need to focus on future-proofed zoning, use-class flexibility and coordination among stakeholders.

Landlords will need to take an active approach to improve quality of space, which, ultimately, will provide more flexible arrangements to retailers. At the same time there is a need for investors to make prompt decisions about economically obsolete retail properties and work with municipal authorities on repurposing, which will come at substantial cost to investors.

7. FUTURE IMPLICATIONS

Shift from Core to Core-Plus and Value-Add

Investors should consider the occupational demand for their property under its current use and the options for improvement, upgrades, redesign (move towards core-plus and potentially value-add assets), redevelopment (opportunistic investments) or divestment. If the latter, they will need to plan when and how to withdraw, who will buy the assets and where to redeploy the released capital.

De-malling

De-malling (i.e. transforming obsolete malls into new uses) has been predominantly seen in the US. Changing demographics and suburban social lives have created demand for conversions of malls into quasi community hubs for groups that have otherwise found limited opportunities for support and connectedness. This translates into uses such as healthcare (e.g. One Hundred Oaks converted into Vanderbilt University Medical Center, US), education (e.g. Austin Community College converting the Highland Mall, US), sport and leisure (e.g. Kmart in New Jersey, US converted into an astroturf soccer arena - The Arena Sports Facility), congregation places and megachurches (e.g. Southland Christian Church in the former Lexington Mall, US). De-malling also releases properties for residential uses (e.g. Arcade Providence, America's first shopping mall converted into microflats and Wheat Ridge Town Center conversion of a former strip centre in Wheat Ridge into retirement living, US), office (e.g. Google leasing Westside Pavilion shopping centre in Los Angeles, US) and logistics uses (e.g. demolition of Randall Park Mall, US to replace with Amazon fulfilment centre). It should be noted though that in order to enable such use changes, a dramatic fall in residual value of the asset, through vacancies and reduction in rental values, will usually be required first and typically followed by substantial re-zoning.

7.1.2. Landlord and Tenant Relationship

Conventional wisdom saw long retail lease terms as a plus, associated with low re-leasing risk. However, modern retail is increasingly characterised by new, unproven brands and tenants who constantly reinvent themselves. As stores are used for show-rooming, demand will tend towards smaller unit formats to reduce operating costs, improve customer convenience and balance omni-channel operations. Hence, evolution of retail combined with omni-channel operations has had a dramatic impact on the landlord/tenant relationship.

Current trends suggest that tenant covenants are becoming weaker as retailers become more vulnerable to changes in the marketplace (more frequent disruptors, product innovation and social media impact).

Tenants are looking for more lease flexibility and landlords seek security and profitable rents. Careful tenant selection is required to create a retail mix for today and the years ahead, emphasising synergies of anchor and key speciality tenants to attract specific categories of shoppers. With changing consumer expectations, landlords also need to engage more directly with customers to enhance their shopping centre experience and increase traffic.

Cordero and Famous (2018) see a solution in a partnership model based on collaboration and unified strategy as the most effective way of countering e-Commerce. In this model the landlord provides services for customers (valet parking, community events and day-care for children) to generate footfall for tenants. However, this comes at risk and cost.

7. FUTURE IMPLICATIONS

Retail real estate investment is subject to pressures to give up on some of the traditional investment characteristics such as long leases, inflation tracking, real rental growth, high residual value and footfall based sales (turnover rent). The key here is the need to move away from conventional fixed and mixed turnover rent models to alternative rental arrangements resulting in greater risk sharing between tenant and landlord.

In the move away from store-based mixed rents, International Council of Shopping Centres (ICSC, 2016) suggests geo-fence models that include all sales within an agreed geo-coded catchment area (as proposed by owners). However, retailers are generally reluctant to provide turnover data on non-store sales and with more integrated omni-channel distribution, this cannot provide a sustainable solution. ICSC also propose alternative performance metrics linked to owners' operational management expertise, rather than to sales. Following this, ICSC (2016) and Robaton (2018) suggest a mixed model, where rent is based on shopping hours, volume of target customers and conversion rate/basket size. This approach is still in its infancy; meanwhile retail continues to evolve with distribution channels and shops increasingly serving as showrooms or pick-up points, shop sharing and pop-up retail (e.g. We Are Pop Up or Appear Here) or mixed-use concepts (e.g. retail and co-working space, or coffee and banking services). Renegotiation of rental terms may be a moving target that requires greater understanding of the benefits of physical presence to the retailer and alternative no rent-based solutions.

7.2. Alternative Real Estate Investment Sectors

Investable real estate that is no longer usable for retail purposes will continue to migrate to new uses, mixed uses and social infrastructure. As retail continues to evolve, the investment risk of these outdated formats is rising, encouraging greater focus on other real estate sectors.

Student housing is already a mainstream investment market in the US and the UK. Other growth sectors will include social infrastructure (schools, universities, hospitals and medical centres and prisons), transport and municipal infrastructure (recycling, parking for automated vehicles, fuel storage and generation), technology (data centres) and specialised accommodation (senior living).

In line with this, PwC (2019a and 2019b), strongly suggest that with increasing competition for assets and falling attractiveness of retail property investment, investors are migrating toward such assets as data centres, healthcare, affordable housing, build-to-rent residential and student/senior housing, and continuing their strong interest in fulfilment and warehousing.

Views of participants of the MSCI/IPF Annual Conference in Brighton in November 2018 suggest similar considerations with the greatest expectations from long-term residential, logistics and mixed-use properties and somewhat lower interest in healthcare and short-term residential. However, their views were mixed with respect to ability of such assets to replicate traditional retail investment characteristics such as long leases, inflation tracking, real rental growth, high residual value and high liquidity as well as scalability of investments and management intensity.

This section highlights the relevance of selected alternative sectors, which may replicate some of the characteristics of retail investment. Logistics and fulfilment, healthcare and residential accommodation are compared to retail real estate (assuming broadly a multiple tenant retail scheme equivalent of some USD25m) with respect to their ability to provide comparable investment parameters.

7. FUTURE IMPLICATIONS

In most countries other than the US, the healthcare and accommodation sectors are still perceived as niche alternatives to mainstream real estate investments. With the growing demand for health services and long unmet demand for user-adequate accommodation, the healthcare and non-standard residential sectors are expected to mature and eventually offer well-defined and structured investment products. These will then provide reasonable alternatives to retail real estate investments.

Note that the following sections provide comments on sectors in isolation. Attractiveness of these sectors is highly driven by demand for particular services offered by these real estate types and investors' competition. Strong investment in one sector will eventually reduce returns and its attractiveness.

7.2.1. Logistics and Fulfilment

Today, e-Commerce fulfilment represents approximately 20% of new leasing, with online sales generating three times the demand for warehouse/distribution space compared with in-store sales (PwC, 2019b).

Logistics is the only sector where opinions are consistent with respect to expectations for returns and the ability to replicate at least some of the retail investment attributes. Hence, it is not surprising that this sector is among the most desired real estate types with investors' 'buy' preferences significantly outweighing the 'sell' preference in most analysed countries sales (PwC, 2019a, 2019b and 2019c).

Developing flexi-delivery solutions has transformed the way transport operators service and innovate the final leg of their business model. Service points, parcel lockers, bicycle delivery, and electric vehicles for urban proximity are only a few examples, and all facilitate the push for urban localization (Aoun and Vatcheva, 2018). However, logistics players are pioneering into even more unconventional and increasingly creative out-of-the-box solutions, such as crowdsourced deliveries and other decentralised options (Aoun and Vatcheva, 2018). Digiesi et al. (2018) and Hay Lee et al. (2016) suggest an innovative approach for a proximity station with a parcel/pop-station to enhance the last mile delivery.

The retail demand driven by e-Commerce (to some extent compensating for bricks-and-mortar retail's loss) is growing and the logistics sector is exhibiting at least some parameters similar to the retail market. Investors are recognising it hence allocation to industrial is increasing and yields are compressing.

Appendix M provides a broad comparison of these logistics parameters versus retail real estate, distinguishing between:

- Logistics and fulfilment; and
- Urban warehouses/parcel local distribution and collection centres (last mile).

7.2.2. Healthcare

Over three years ago, Pinnell (2015) suggested healthcare would be the new retail, meaning that the retailing approach to tenants should be applied to healthcare. While this still holds, this statement is gaining a new meaning as healthcare presents opportunities to fill or reinvent surplus retail space.

In the US, medical facilities represent a major form of development that shopping centre managers are observing with increasing interest. Current retail owners, when exploring potential healthcare tenants, must understand their business (ICSC, 2018a).

7. FUTURE IMPLICATIONS

Meyer and Grossman (2010) and ICSC (2018b) suggest the following key benefits of retail and healthcare co-location:

- Critical mass to attract footfall;
- Familiarity;
- Established locations to achieve synergy between space uses;
- Visibility and accessibility of retail schemes is designed to draw a wide clientele; and
- On-site prescriptions fulfilment.

Dunham-Jones and Williamson (2017) indicate that in the US the most successful dead mall regenerations are into medical, congregation and educational purposes. Inserting medical clinics or completely converting properties started in the early 2000s and accelerated in 2010 when the Affordable Care Act ('Obamacare') created several million new 'health shoppers'.

While this is not the case in Europe, in the US the healthcare sector ranks highly among investors (PwC, 2019a and 2019b). Appendix M provides a broad comparison of key investment parameters of healthcare property versus retail real estate distinguishing between:

- Urgent-care medical facilities, health and fitness providers;
- Acute services/hospitals; and
- Healthcare research and development.

7.2.3. Residential

With the recent residential dynamics driven mostly by population growth (especially due to immigration) and population aging, in all analysed countries there is a shortage of appropriate residential space. This is relevant for both the younger part of the community, who cannot afford their first home, as well as for the aging population looking for quality and assistance (Dijol et al., 2017).

PwC's investment and development intentions ranks are dominated by broadly understood residential sectors such as senior housing/assisted living, student housing, private rented residential, co-living, serviced apartments, social housing, affordable housing (PwC, 2019a, 2019b and 2019c).

As each of the analysed countries vary significantly in terms of size, structure and maturity of individual segments of the residential sector, this section focuses on:

- retirement and aged care accommodation;
- private rented residential;
- student accommodation; and
- hotels.

These and other above mentioned residential uses in many cases will create opportunities for either supplementing the existing retail schemes or for full conversions of the economically obsolete ones. Appendix M compares key investment parameters of the above mentioned residential property types versus retail real estate.

7. FUTURE IMPLICATIONS

7.2.4. Replication of Retail Attributes

In summary, retail is losing its traditional attributes and other real estate sectors are limited in their current or near future capability to compensate for these losses.

- Building type – Current medium-size retail schemes are typically built-to-suit properties. Hence, repurposing without major structural interventions will be limited. The US experience (mostly with larger malls) suggests that there is a significant potential for certain logistics and healthcare uses. However, accommodation and certain healthcare purposes will typically require full site redevelopment.
- Scale/co-location – Except for major large scale logistics centres, due to their nature, other alternative real estate sectors discussed here will be unlikely to compensate for the gradual loss of scale offered by larger retail schemes. Hence investors will be forced to consider smaller volume capital deployment. To make up for the loss of scale the investors will increasingly consider mixed-use schemes.
- Long-term contracts/rental growth and inflation tracking – Retail has traditionally offered relatively long term contracts supporting income stability, steady growth and inflation tracking. With tenant preference being for shorter and more flexible contracts, this is fading. As this trend also relates to other real estate sectors, only users of specialised large scale properties are likely to truly replicate this retail attribute (e.g. logistics hubs and hospitals).
- Turnover rent – On top of rental growth and inflation tracking, retail and hotels are the only sectors where the landlord's income is directly linked to tenant's performance. While similar models are becoming more widespread in the office sector and gradually infiltrating other sectors ("pay as you go"), the retail model of fixed plus turnover rent is unlikely to be truly replicable elsewhere.
- Residual value preservation – Retail schemes are well known for their ability to preserve their residual value, which, in case of schemes in locations of falling attractiveness, may be increasingly challenging. In this respect most of other uses discussed above seem to provide reasonable alternatives for long term investors.
- Asset liquidity – Because of the sectors' maturity and size, the retail and other mainstream sectors (including logistics) provide ample opportunities for adjustment of investment strategies. Investment in specialised properties on relatively shallow markets (e.g. healthcare, aged care) requires higher transaction costs (including timing effects). With growing user demand for such properties, these sectors are due to mature fast. This, coupled with increasing transparency, is expected to improve liquidity and hence support the sectoral reallocation.
- Management intensity/understanding tenants – Irrespective of the management model, all real estate sectors, to respond to tenants' needs, are becoming more and more management intensive. Understanding of the operations and performance of tenants is increasingly critical for ongoing management and long term business planning. Various forms of partnership models allowing for better alignment between landlord and tenant are critical to maintain a long term business relationship. In this respect, passive retail real estate investors will be under constant pressure to engage more with their tenants. When shifting across sectors, they will need to upscale their understanding of specific businesses and of the frameworks within which they operate (e.g. medical, aged care and education).

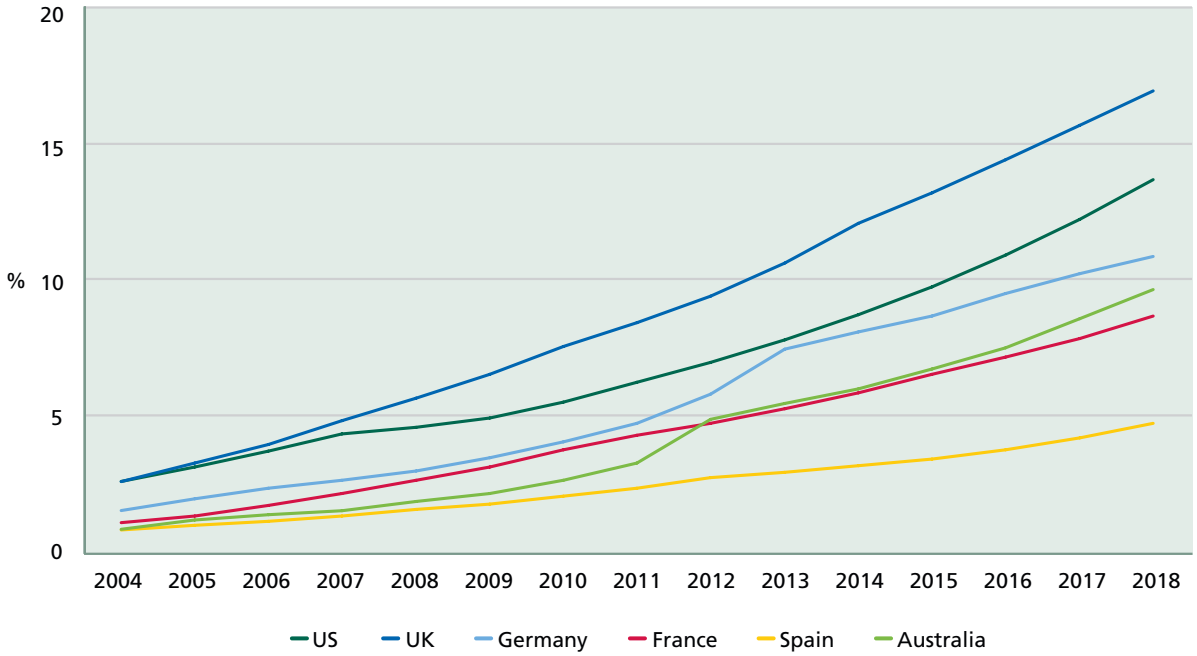
8. CONCLUSIONS

Retail Market

Since the early 2000s the retail market has undergone substantial change, driven to a large extent by technological advancement, bringing e-Commerce to the mainstream retail and cannibalising bricks-and-mortar retailing.

Between 2003 and 2017, in all analysed countries except Spain, total retail sales have increased in real terms (e.g. in the UK by 4% and the US by 17%). However, the real increase of store-based retail sales over the same period observed in Australia and the US is driven mostly by population growth. On a per capita basis, a significant drop in bricks-and-mortar retailing has been observed in all the countries studied. At the same time non-store retail sales have at least doubled in most of the analysed markets. As shown in Figure 8.1, the share of internet in total retailing is increasing at a steady pace.

Figure 8.1: International Comparison – Internet as a Proportion of Total Retail Sales, 2004-2018



Source: Euromonitor (2019)

In recent years the fall of bricks-and-mortar sales has been most significant among Mixed Retailers, Home and Garden and Electronics and Appliance. In the US and Australia, this loss was partly compensated by Grocery retailing, which has been more resilient to the challenge posed by e-Commerce. In response to the fall in demand for store-based retailing, retail floor space used by the most affected types of retailer have reduced. However, retail sales for certain retailers are falling below a sustainable level, driving some retailers into administration.

8. CONCLUSIONS

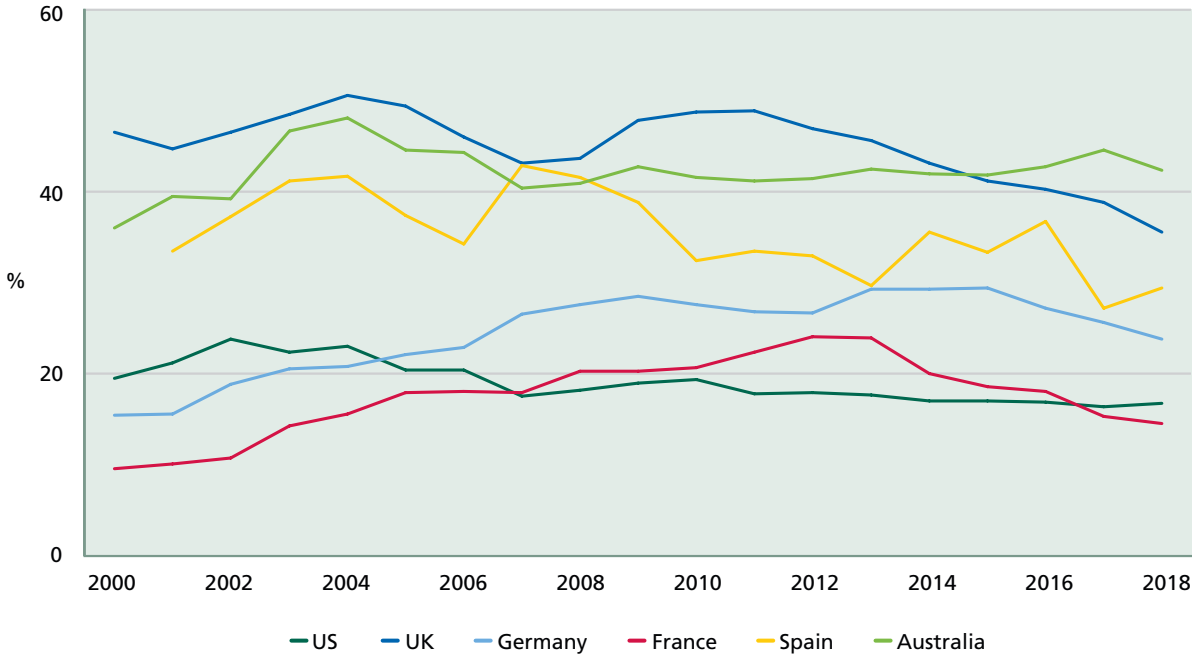
Retail Investment Market

The average allocation to retail by investors within the professionally managed real estate universe differs by country. At end-2017 the retail sector ranged from a 15-20% share of French and US portfolios up to around 45% of Australian portfolios. Despite the widely discussed challenges facing the retail sector, the allocation to retail real estate across institutional and large-scale investors has been reasonably resilient. However, in recent years the share of retail is declining in the UK from a high base and to a lesser extent in France and Germany.

This research identified some systematic changes, suggesting that the expected impact may be delayed and/or that the institutional investors included in the MSCI sample so far have been able to respond reasonably well to the changes in the retail market. Key changes include:

- In the UK, a gradual shrinkage in retail allocation has been seen since 2011 (from an almost 50% share within portfolios down to less than 40%), with net gains in investments in non-mainstream sectors.
- Within the retail sector a light tendency towards larger assets has been observed.
- Total returns from retail across all analysed countries have fallen and are now below the market average and seem to be stable or slowly falling.
- Transaction activity post-GFC has substantially reduced to a lower but stable level, suggesting longer holding periods and cooler transaction market.

Figure 8.2: Share of Retail in Total Real Estate Investment, 2000-2018



Source: Based on MSCI (2019)

8. CONCLUSIONS

Projections

The retail allocation model based on retail, e-Commerce and population projections and historical retail market and retail investment performance suggests that between 2018 and 2030, there is potential for the allocation to retail real estate in most of the analysed countries to reduce materially, particularly in the US and UK. Under the base case scenario, the size of the retail property investment sector is projected to fall by 22% and 11% in the US and UK respectively, while assuming an accelerated adoption of e-Commerce results in larger projected falls of 33% and 21% respectively. However, assuming a slower adoption of e-Commerce results in the UK seeing no reduction. Furthermore, other countries, notably Australia and Spain, are projected to see smaller impacts and may actually see growth. Careful consideration must be made with respect to type of merchandise, type of scheme and specific characteristics of the catchment area.

Future Implications

To maintain acceptable investment performance from retail assets within an institutional real estate portfolio, a key consideration will be the evaluation of the long-term potential of individual retail schemes and their ability to meet changing consumer needs. These decisions will result in proactive redesign or upgrade of remaining schemes to attract shoppers and repurposing of surplus retail space (where suitable alternative uses are viable).

Retained schemes will need to change to provide experiential space with far less conventional retailing space and more space for other (often more flexible) uses, suited to catchment population.

Surplus or redundant assets, depending on location, may be converted to other uses. For some investors that may mean a transition from core towards core-plus and value-add strategies for assets. However, these decisions will not all come at once. In many cases the existing retail use may continue for quite some time to reflect the highest and best use of the property vis-à-vis other uses.

Many investors may choose to dispose of their retail assets and redeploy the capital. While the other mainstream property sectors (offices and industrial) may be the beneficiaries of such reallocation, exposure to other less traditional sectors is also likely to rise. In particular, the following uses may be deemed as attractive alternatives to retail property allocation going forward:

- Logistics and fulfilment, including urban warehouses;
- Healthcare; and
- Residential (including student and retirement accommodation) and hotels.

8. CONCLUSIONS

The following table provides a summary of key investment attributes of these types of real estate relative to retail real estate. (For details see Appendix M.)

Table 8.1: Comparison of Key Investment Attributes of Real Estate Sectors versus Traditional Attributes of Retail Real Estate Investment

Attribute	Retail	Logistics		Healthcare				Residential		
Type of real estate	Traditonal multiple tenant retail scheme equivalent of some USD25m	Logistics and fulfilment	Urban warehouses/parcel local distribution and collection centres (last mile)	Urgent-care medical facilities, health and fitness providers	Acute services/hospitals	Healthcare research and development	Retirement and aged care accommodation	Student accommodation	Private rented residential	Hotels
Building type										
Scale										
Long term contracts										
Rental growth, inflation tracking										
Turnover rent										
Residual value preservation										
Asset liquidity										
Management intensity										
Understanding tenants										
Co-location										

Comparable to retail's traditional attributes

Potential for partial replication of retail attributes

Limited or no potential for replication of retail attributes

Changes to existing schemes are likely to take time and the market adjustment may be delayed resulting in short and medium-term reduction in profitability of retail real estate investment.

8. CONCLUSIONS

Neither the surviving retail schemes nor the alternative uses will provide the same investment attributes as historic retail property investments. Hence, trade-offs will be required, e.g. shorter and more flexible leases, potentially smaller individual real estate asset values and more complex management.

It is possible that some proceeds from the sale of retail property investments will need to be deployed outside of the property market, into other asset classes such as equities, bonds or wider infrastructure. This research is limited to an exploration of the MSCI samples, which represent players proactively managing their real estate portfolios. As such, it considers what investors should do with their retained retail investments and what other property investments may benefit from reallocation away from retail. However, these decisions will take time, and in many cases the existing and possibly increasingly less efficient retail use may continue for quite some time to reflect the highest and best use of the property vis-à-vis other uses. As retail real estate is deemed to reduce, the size of the total real estate market may change. This research focused on retail and changes in other real estate investment sectors have not been considered. It is important to note that the attractiveness of non-retail real estate investment sectors is only to a limited extent attributable to changes in the retail sector.

APPENDICES

APPENDIX A: RESEARCH LIMITATIONS

The reader is advised of the following research limitations:

Analysis of Isolated Markets

This research analysed national real estate investment markets in isolation. International retail, trade, investment and other relations between both the countries in scope and others out of scope of this research are excluded from the analysis. However, it is recognised that professionally managed institutional real estate investors may be active across territories and base their decisions on wider bases than country specific performance. Commentary is provided on the potential material impact on the outcomes of this study where possible.

Anchoring

This research focuses on recently aggravated phenomena and is consequently based on a relatively short period of annual data. It is expected that the results of the retail real estate investment analysis may be underestimating the impact of e-Commerce on investment performance.

Within Country Variations

This research does not consider any inter-country variations. These vary significantly between major cities and outside as well as regionally. Hence its application is not within-country region-specific.

Market Players

This research is concerned only with the real estate investment of large scale institutional investors, representative of those institutions, whose performance is captured by the MSCI international data. Hence it does not cover any other types of investors or investments in the real estate sector, e.g. family businesses, non-institutional investments, investments of corporations operating in other businesses.

Real Estate Investment

This research analyses only investment on the real estate market. Investment in non-real estate assets (bonds, stocks, financial instruments, non-real estate assets) is excluded. This is notwithstanding potentially superior returns.

Data Sources

This research is predominantly based on Euromonitor Passport data focusing on retails sales and on MSCI measures with respect to retail real estate investment performance.

With respect to Euromonitor data, the research is based on 2003-2017 data as of 23 July 2018 (referred to as: Euromonitor, 2018). Note that illustrative data covering 2018 has been based on datasets as of 25 March 2019 (referred to as: Euromonitor, 2019).

With respect to MSCI data, the research is based on 2000-2017 data as of 17 July 2018 (referred to as: MSCI, 2018). Note that illustrative data covering 2018 has been based on datasets as of 10 June 2019 (referred to as: MSCI, 2019).

Specific data related matters are discussed in Appendix B.

APPENDIX A: RESEARCH LIMITATIONS

Other Drivers

This research does not consider other wider economic changes and technological advancement, which adoption may accelerate changes in the retail real estate investment market (for details on infrastructural preparedness and adoption readiness see Appendix D).

CPI Adjustment

Where applicable the data has been adjusted for inflation in accordance with the Statistical literacy guide of the House of Commons (Thompson, 2009), with 2017 as a base year. Historical CPI statistics are based on OECD annual data for 2000-2017. 2018-2020 CPI projections are based on OECD annual projections. 2021-2030 CPI projections are based on the following estimations:

Table A.1: Annual CPI Projections for 2021-2030

	US	UK	DE	FR	ES	AU
Annual CPI projections – 2021-2030	2.20%	2.10%	2.00%	1.90%	1.80%	2.10%

Source: UWE estimations

Foreign Exchange Rates

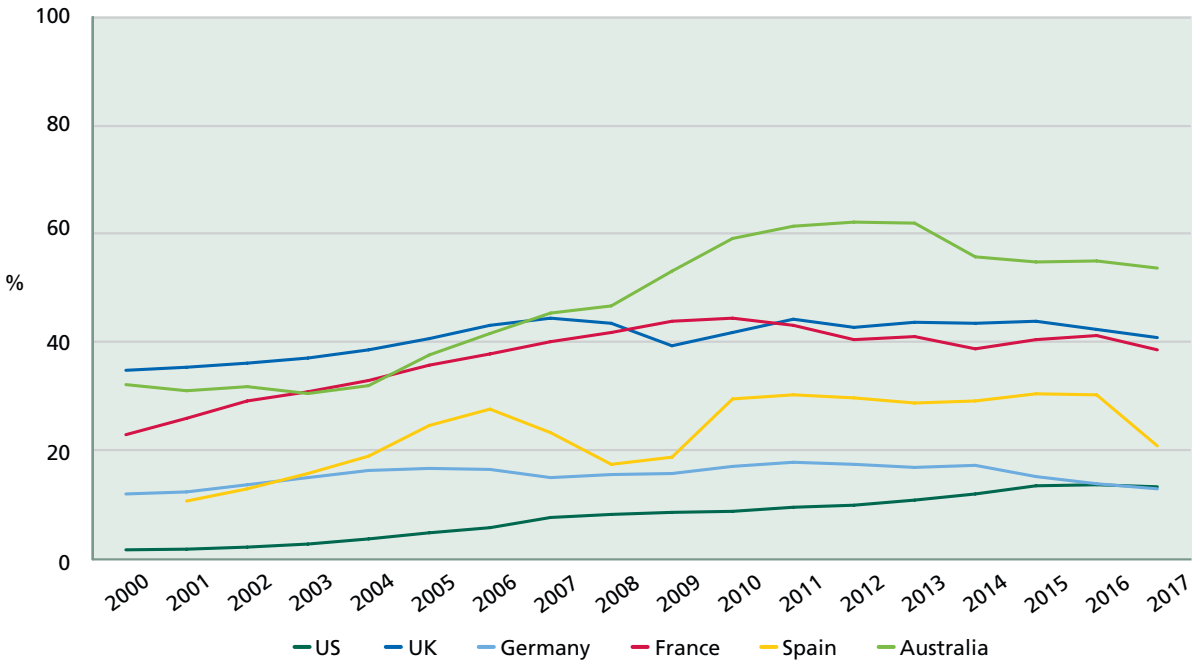
Given the international nature of this research, analyses in common currencies were considered. However, given the data distortion caused by significant foreign exchange rates changes over time, local currencies have been adopted as a more reliable measure of performance of individual countries. All values are provided in local currencies or in USD (exchange rates as of 2017) and where appropriate presented in 2017 value terms. Foreign exchange rates used for international comparison were based on the OECD exchange rates.

APPENDIX B: DATA COVERAGE AND KEY PARAMETERS

The analysis of retail real estate investment performance for the six countries in scope of this research is based on MSCI data, downloaded on 17 July 2018 (All Properties and Sector data) and on 31 July 2018 (Retail sub-sector data).

The comparative focus of the research analysis is based on MSCI annual statistics available broadly for 2000-2017. The MSCI data represents a sample of professionally managed real estate investors, which structure and characteristics may differ significantly from the whole real estate investment market (Figure B1 provides details of the MSCI market coverage).

Figure B.1: Proportion of Total Market Coverage by Capital Value



Source: MSCI (2018)

APPENDIX B – DATA COVERAGE AND KEY PARAMETERS

Table B.1: Professionally Managed Real Estate Investors – MSCI Inclusion Criteria

Included	Excluded
• Insurance and pension funds	• Small private landlords (<USD100m)
• Sovereign wealth funds	• Owner-occupied portfolios (pubs, hotels, hospitals)
• Unlisted funds (closed and open end)	• Timberland, farmland and infrastructure
• Traditional estates and charities	• Mortgage companies
• Listed funds	• Development companies
• Large private landlords (>USD100m)	• Funds of funds and indirect holdings (double counting)
• Leased office, retail, industrial, residential and other property	• Municipal and social housing
• Investment property under development	

Source: Bothra and Teuben (2017)

In most of the analysed countries MSCI is the leading data provider. In the US, the National Council of Real Estate Investment Fiduciaries (NCREIF) provides an alternative source of similar market performance indicators. NCREIF data is not directly comparable to MSCI, therefore any comparison between these two sources may prove misleading.

Timeframe

The real estate investment performance data available to individual countries in scope of this research for all countries except Spain covers 2000-2017 results. To ensure consistent methodology, this research covers 2000-2017, with the exception of Spain, where the analysis does not include 2000.

Analysed Measures

This research considered measures in accordance with MSCI definitions. Some of the measures do not cover the entire analysis period. This may be driven by small sample sizes, low sample representativeness, market activity in a given period or biased sample structure (e.g. single large transactions distorting the overall results). Some of the available measures, especially for Spain, during the GFC market freeze period, may lead to questionable conclusions, as the data may be distorted by one-off events or combined effects of sample size and structure. Where appropriate these data gaps and identified low reliability data points have been described in this report.

Reporting Frequency

As not all countries have measures available on a shorter than annual basis, to allow direct comparison across countries, this research is based on the annual measures, which unless specified otherwise, related to the calendar year end of 31 December.

APPENDIX B – DATA COVERAGE AND KEY PARAMETERS

Sample Selection

The MSCI measures are broadly available for three types of samples: All Asset, Standing Investment and Same Store. This research is predominantly based on the All Assets sample.

Market Sectors

While the focus of this research is on the retail investment of professionally managed real estate investors, this market segment has been analysed in the context of the entire professionally managed real estate investment market.

MSCI reporting for the market is split into six sectors: Retail, Office, Industrial, Hotel, Residential and Other.

The Retail sector includes a variety of retail real estate such as shopping centres, unit shops, supermarkets and retail warehouses. Similarly, the Industrial sector covers not only warehouses and industrial real estate but also self-storage, data centres and alike. Residential comprises both single and multi-family investments. The Other segment covers a variety of types of properties not included in any of the first five categories, namely education, leisure, land, healthcare, garage/parking and service stations. Other segment data in early years may be distorted by inclusion of other types of properties, which in later years might have been captured as Hotel or Residential.

Retail Investment Market Segmentation

To understand details of structural changes within the Retail sector, the sub-sector (market segmentation) data was analysed.

The sector data across the countries in scope of this research is available using consistent methodology. The segmentation differs across the countries, with some using types of assets (e.g. UK, US, Australia and Spain) and others using differing size bands. Hence, the changes within the retail sector were analysed on individual country bases. The segmentation measures included periodic gaps, similar to the sector data, and some data is suggesting very small samples.

APPENDIX C – STRUCTURAL CHANGES IN THE RETAIL SECTOR: DETAILED ANALYSIS

Consumer Preference and Shopping Value

Growth in e-Commerce is driven by characteristics in consumer preferences that are constantly shifting. Ben-Shabat et al. (2017) find a significant shift from affluence (I am what I own) to influence (I am what I do) in American consumers arising from changing demographics, value and technology. Importantly, the youngest consumers (Generation Z born mid-1990s to early 2000s) take the internet for granted, insist on ease of use and seek economic security and idealised escapist experiences in "virtual" worlds (Wood 2013). This, along with challenging political and economic times, leads to lower brand loyalty and generates consumers that are more demanding and better informed about products and alternatives (Ernst and Young, 2015). As per Davis and Hodges (2012), online retail is now capable of providing superior product quality, lower price, better functional value (getting what is needed or wanted), higher transaction value (getting the best deal) and product selection value (provision of a good range of products/services inside a retail store).

Generation Z are isolated by their retail platform choices and are lonely (Angus and Westbook 2019). The online experience lacks what Davis and Hodges (2012) describe as in-store shopping value, which "stems from retail elements that create in-store shopping experiences that consumers have in specific retail contexts". In-store retail may still be the preferred option if it focuses on improving consumers' personal well-being (releasing stress and improving mood), arousing curiosity (providing novelty, satisfying a desire for knowledge, and keeping up with the newest trends and fashions), socialisation aspects (positive shopping experiences through interaction with friends, family, salespeople, and other consumers), in-store customer service, visual-shop appeal, physical effectiveness and overall pleasantness of the retail store and the efficacy of getting the shopping done in a retail store.

Brown et al. (2014) found that "most consumers prefer engaging with physical stores" irrespective of where the value capture takes place (here value capture refers to the point when the purchase is completed). KPMG (2017) highlights the ability to see and touch, or try on and pick up immediately as key decision drivers for in-store versus online purchases. To entice customers into physical stores there must be a sense of urgency, an event or something new or exciting that creates a fear of missing out. Generation Z are beginning to set their own boundaries and be more selective in their activities (Angus and Westbook, 2019), reducing their time online or cutting down on their social networking, in favour of real-life experiences. They will have different requirements of the physical shopping experience and the need for shops as now known will keep fading in favour of a shopping mall or a high street that meets their expectation. In short, the architecture of physical retail needs to address the future dynamics of Generation Z shoppers.

Omni-channel Retailing

Inman et al. (2015) suggests that in response to disruptive internet sales, many store-based retailers initially implemented multi-channel strategies, including a move towards omni-channel retailing. This is characterised by a shift towards more intensive social media communication, channel integration, brand experience and an enhanced focus on overall sales to retain competitive position relating to the social and experiential aspects of retailing. Further, Emrich and Verhoef (2014) confirmed that "online-offline channel integration leads to channel synergies rather than channel cannibalisation". Ackermann et al. (2017) stresses that the hedonic, utilitarian and social shopping value in omni-channel retailing is strongly derived from seamlessness and perceived consistency between store and non-store channels.

APPENDIX C – STRUCTURAL CHANGES IN THE RETAIL SECTOR: DETAILED ANALYSIS

While historically the retail outlets served as selling points, they are now frequently used as showrooms where the customers visit the store to learn about products but then buy them online. This has been historically recognised in the literature as a major threat to the bricks-and-mortar retailers with many retailers focusing on "how to fight it" to minimise losses from the store (Balakrishnan et al. 2014; Jing 2016; Kireyev et al. 2017). However, Kuksov and Liao (2018) identified that when the manufacturer's decisions are considered in the whole value chain, consumers' ability to engage in showrooming may lead to increased, rather than decreased, profitability for retailers retaining a store-based presence. Hence, retail efforts to restrict showrooming behaviour may be misguided. Similarly, ICSC (2015) highlight that shopping centres are increasingly acting as enablers for omni-channel retailing, by enhancing the customer experience and driving sales. Szajna-Hopgood (2018) notes how JD Sports have utilised this method to increase profits year-on-year, which is counter-cyclical to the retail market in general.

Based on Warby Parker's showrooming experience, Bell et al. (2017) find that showrooms increase demand overall and in the online channel, generate operational spill-over effects to the other channels; improve overall operational efficiency (increasing conversion in a sampling channel and decreasing returns), and amplify demand in dealing with customers who have the most acute need for products. Moreover, these effects strengthen with time as showrooms contribute not only to brand awareness but also to channel awareness.

Evolving Retail Schemes

Brown and Lubelczyk (2018) go beyond Robaton's (2018) proposal of turning shopping centres into communities and suggests erasing the terms "mall" and "shopping center" from the real estate dictionary and replacing them with "consumer engagement spaces" (CES). Instead of selling goods, the purpose of a CES will be to engage with shoppers, with traditional anchor tenants replaced by residential space, updated retail, and entertainment.

In this research this is explored in the context of wider demand for various types of retailing.

Similarly to CES, Resnick (2015) stresses innovative features of retail schemes (combining co-working spaces for start-up companies with complementary pop-up store space to try out new products and services) as critical to enhance customer experience. Further Brown and Lubelczyk (2018) suggest that alternatives might include smaller, "smart", dynamic hubs for interactive brand experience as well as showrooming with limited inventory. Herman (2018) indicates that demand for mass customisation will create a greater focus on convenient location of stores that become "temples of brandhood".

Logistics and Fulfilment

The global logistics industry is central to the shifts of new consumption trends and dynamics of the new supply chain driven by e-Commerce (Camps et al., 2017). Consumption patterns across the world, together with a more efficient and integrated model of distribution, have created demand for specialised logistics properties that are well adapted to facilitate a shorter supply chain and multi-channel distribution. The supply chain drives the first-mile and last-mile approaches, creating complex networks of small warehouses, hubs and delivery boxes. These are well connected to big multimodal distribution centres and in strategic locations.

APPENDIX C – STRUCTURAL CHANGES IN THE RETAIL SECTOR: DETAILED ANALYSIS

With growing e-Commerce the new distribution systems have evolved with e-fulfilment centres being at the heart of the system to support either directly the local depots or the parcel delivery pathway to deliver products to customers' homes and collection points (JLL, 2013). In this model, e-fulfilment blends with urban logistics as the hubs and delivery centres are mainly located in major urban areas, while big multimodal distribution centres are found in strategic locations out of the cities.

Per DHL (2015), the omni-channel fulfilment is all about:

- Seamless inventory visibility and optimization across channels;
- Omni-channel warehouses serving off- and online business and delivering to stores and homes;
- Dynamic space allocation within networks and flexible contract terms;
- Warehouses used as showrooms or for customer-facing activities; and
- Proactive and personalized customer management with logistics marketplaces and focus on maximising customer value.

Baum (2018) adds that the growing confusion between retail and logistics space seems set to continue as drones and driverless cars facilitate last-mile delivery. Drone tests are being undertaken by such major players as DHL with PaketKopter (DHL), Amazon with Amazon PrimeAir (Corinne, 2016), Google with Project Wing (X-Development) and GeoPost with GeoDrone (GeoPost).

This is especially critical as last mile logistics is the least efficient stage of the supply chain and comprises up to 28% of the total delivery cost (Digiesi et al., 2018). Hence innovations are required including vehicles (electric/autonomous), drones, proximity stations, collaborative and cooperative urban logistics, optimisation of transport management and routing and innovations in public policies and infrastructures.

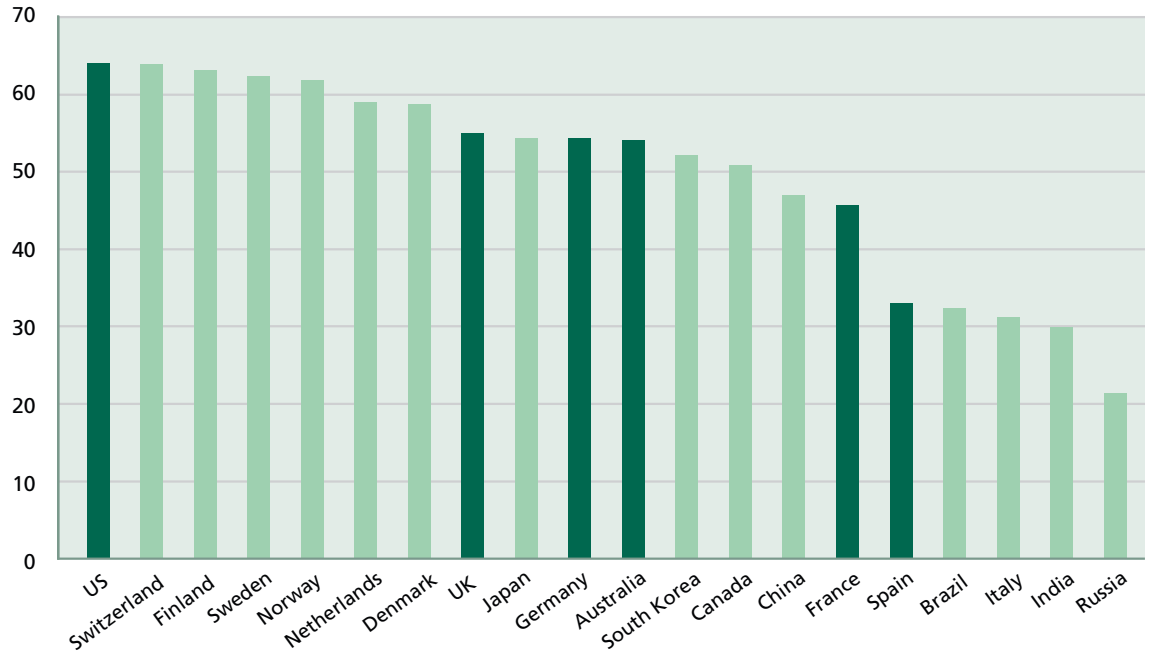
APPENDIX D – INFRASTRUCTURAL PREPAREDNESS FOR RETAIL TRANSFORMATION

Experience suggests that achieving economic diffusion is related to how well a country can weave innovations into its economic and social fabric (Davarzani and Purdy 2015). Diffusion of Innovation Theory developed by Rogers (1962) seeks to explain how, why, and how fast new ideas and technology spread. Innovation, communication channels, time, and social systems are the four key components of the diffusion of innovations. This section provides details of the infrastructural and innovation preparedness of relevant countries to understand the scope for further shifts away from physical retailing towards fuller adoption of e-Commerce.

Digital Transformation

In the context of the Internet of Things, Davarzani and Purdy (2015) argue that National Absorptive Capacity (NAC) – the ability of countries to thrive on innovation – is a key lead indicator for future adoption of new technologies. Based on several infrastructural, social, political, legal and economic factors, the US (NAC Index at 64) is ranked first, closely accompanied by Switzerland and Scandinavia. The UK (NAC Index at 55) leads a 2nd league table including such countries as Germany and Australia. France and Spain seem to be lagging significantly behind this group.

Figure D.1: National Absorptive Capacity Score



Source: Davarzani and Purdy (2015)

Aytekin et al. (2015) suggest the strong explanatory power of the Networked Readiness Index (NRI) in the context of the diffusion of innovations. NRI "assesses countries' preparedness to reap the benefits of emerging technologies and to capitalise on the opportunities presented by the digital revolution and beyond" (Baller et al., 2017). It considers such factors as environment (political, regulatory, business and innovation), readiness (infrastructure, affordability, and skills), usage (individual/business usage and government) as well as socio-economic impacts. The NRI results for the countries in scope are very similar to the NAC Index with the US ranked highest (5th), followed by the UK (ranked 8th) and Germany and France (15th and 18th respectively) and France and Spain lagging significantly behind (24th and 35th respectively).

APPENDIX D – INFRASTRUCTURAL PREPAREDNESS FOR RETAIL TRANSFORMATION

The Digital Evolution Index 2017 differs from NAC and NRI for the UK and the US. It classifies the UK as a 'Stand Out' country – "digital elite; both highly digitally evolved and advancing quickly". At the same time, it classifies the US, Germany and Australia as 'Stall Out' nations, which "have reached a high level of digital evolution, but are at risk falling behind due to a slower pace of progress and would benefit from a heightened focus on innovation". Among the analysed countries only France and Spain are on their 'Watch Out' list, suggesting that they "have a lot of work to do, both in terms of infrastructure development and innovation".

Logistics

Well-functioning road transport, ports, postal delivery services and customs are critical for e-Commerce as they help ensuring effective order fulfilment (Rodriguez, 2018). Inefficiencies in the logistics system may create significant barriers for e-Commerce as they increase trade costs.

The Logistics Performance Index (LPI) is a composite measure of logistical efficiency (Arvis et al., 2018) and strongly suggests that Germany (ranked 1st) is the clear world's leader. Notably the UK ranks 9th and is followed by the US, France, Spain and Australia (14th, 16th, 17th and 18th respectively).

The UK's rank is significantly affected by low scores on international shipments and customs. However, the infrastructure, competence, tracking and tracing is excellent. Similarly, the ranks of the US and Australia are lowered by scores related to their international shipments.

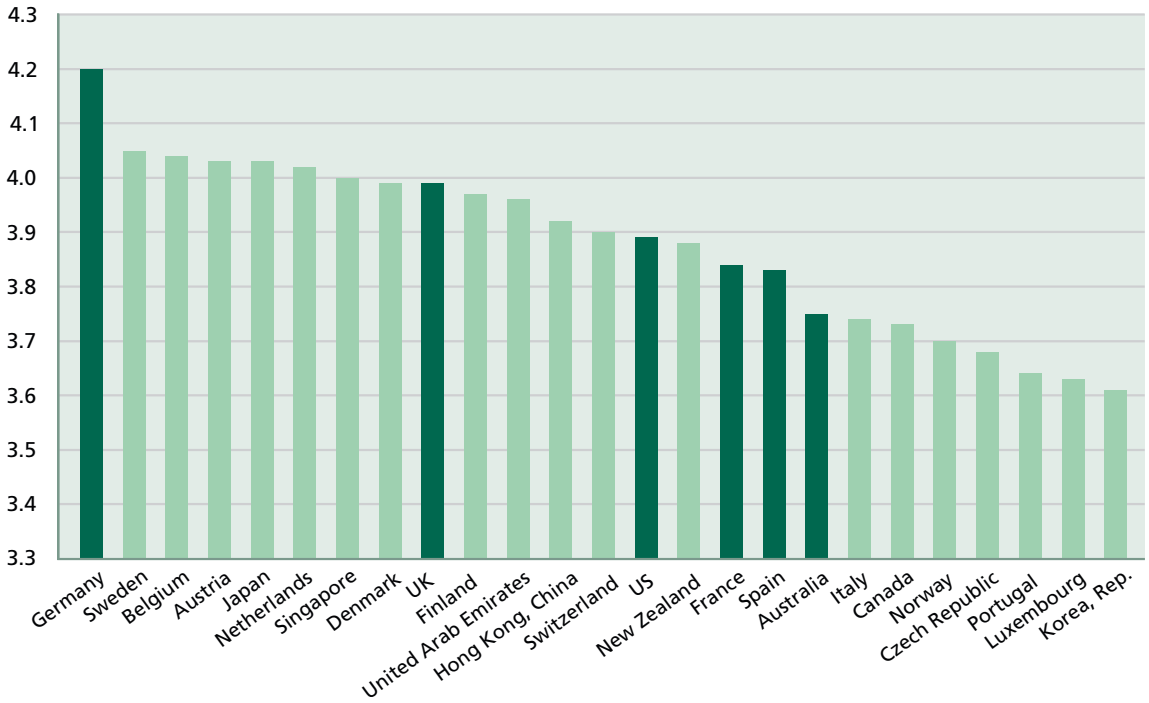
The above suggest that Germany (LPI 4.19) and the UK (LPI 4.01) would have the lowest logistical barriers for future development of e-Commerce (Other analysed countries have LPI at 3.92 US, 3.86 France, 3.78 Spain, 3.77 Australia).

In Europe the Trans-European Transport Network (TEN-T) policy of the European Commission is expected to develop a Europe-wide network of roads, railways, waterways, shipping routes, ports and airports to close gaps, remove bottlenecks and eliminate technical barriers that exist between the transport networks of EU Member States. TEN-T seeks to achieve this through new and upgraded physical infrastructures, innovative digital technologies, alternative fuels and universal standards.

Through improving logistics channels, e-Commerce will continue to excel as consumer preferences adopt to improved delivery systems making next-day delivery standard. This may be facilitated by increasing networks of various types of collection points, including self-service.

APPENDIX D – INFRASTRUCTURAL PREPAREDNESS FOR RETAIL TRANSFORMATION

Figure D.2: Logistics Performance Index Score



Source: Arvis et al. (2018)

Postal Services

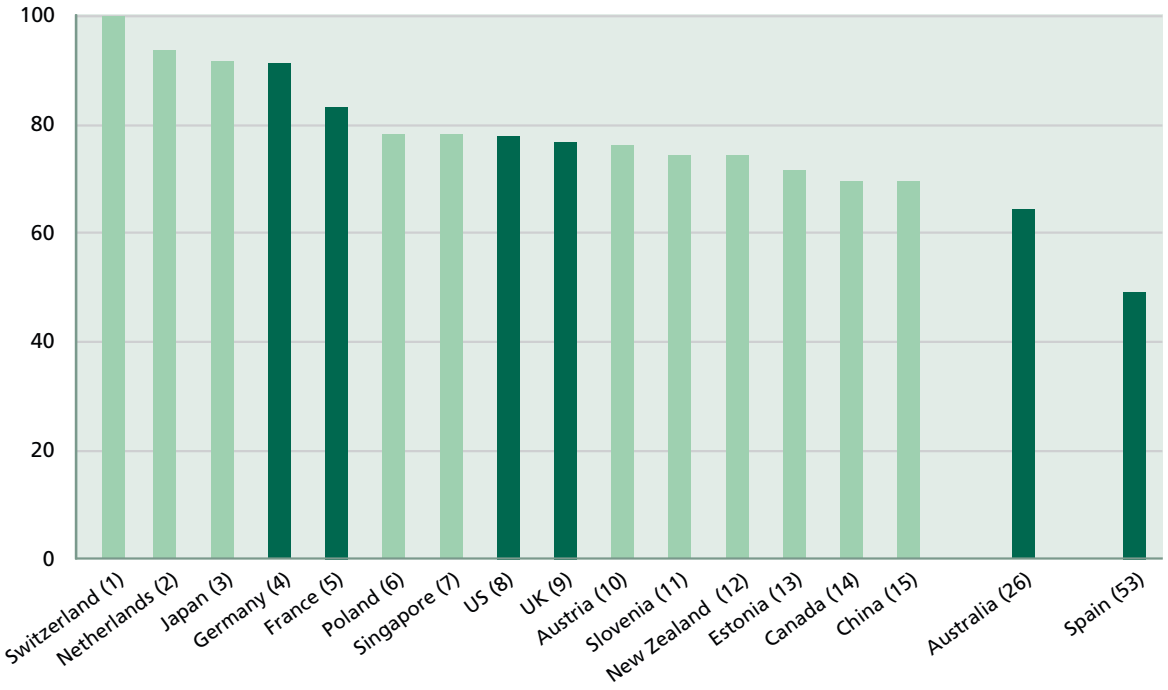
Similarly to logistics, the postal system is critical to support e-Commerce. Per the Integrated Index for Postal Development (Boffa et al., 2018), which measures reliability, reach, relevance and resilience of the postal system, in Germany and France (ranked 4th and 5th respectively) followed by the US and UK (ranked 8th and 9th respectively), the systems seem to be supportive for future further development of internet retailing. The low Food and Drink online sales in the US are still a logistical challenge. While in dense urban areas traffic, parking and security in residential buildings are the major obstacles, in less densely populated markets the effective coordination of deliveries seems to be the major issue (Euromonitor, 2018a). Hence, drone deliveries are now being piloted by Amazon, despite the current legal restrictions (Corinne, 2016).

In contrast in Australia, the system seems to be less efficient but still in the "upper middle performance" band. Amazon's launch in late 2017 accelerated development in parcel delivery services in the metropolitan areas of Sydney and Melbourne. The customers expect delivery within just a few hours. This consumer pressure is likely to significantly improve overall postal systems for both the Australian Post, which has a monopoly for sub 0.25kg as well as for courier services (Euromonitor, 2018b).

In Spain, the universal postal system falls in the "lower-middle performance" band suggesting potential obstacles for smooth acceleration of e-Commerce.

APPENDIX D – INFRASTRUCTURAL PREPAREDNESS FOR RETAIL TRANSFORMATION

Figure D.3: Integrated Index for Postal Development (Rank in Brackets)



Source: Boffa et al. (2018)

Conclusions

The above described infrastructural and innovation preparedness of the countries suggest further shifts away from physical retailing towards fuller adoption of e-Commerce. This suggests a stronger potential in such countries as the US, UK and Germany and somewhat weaker in Australia (due to logistics and postal system constraints) and Spain (weakest network readiness, logistics and postal system).

APPENDIX E – RETAIL MARKET DETAILS

E.1. Store-based Retail Sales by Category

Grocery continues to be by far the largest retail category with a share of 48% (in Germany) to 58% (in the UK) as of the end of 2017. Grocery in most countries is followed by Health and Beauty, Home and Garden and Mixed Retailers.

The retail share of Health and Beauty ranges from 7% of store-based sales in the UK to 18% of store-based sales in Germany. This is partly attributable to the strong presence of Mixed Retailers in the UK (12% share, with only the US having a higher share of 16%), of which many offer health and beauty products. Contrary to this, in Germany (and also in France) the market share of Mixed Retailers is very low at 2%.

Electronics and Appliance differ across the analysed countries, with Spain and the US having the lowest share (3% and 4% respectively) as opposed to Australia (7%). Similarly, shares of Apparel and Footwear varies widely across markets. Australia, France, Germany and the US have lowest shares (6%, 7%, 7% and 8% respectively), while in the UK and Spain these shares are nearly double (12% and 11% respectively).

Supply of Retail Space by Category

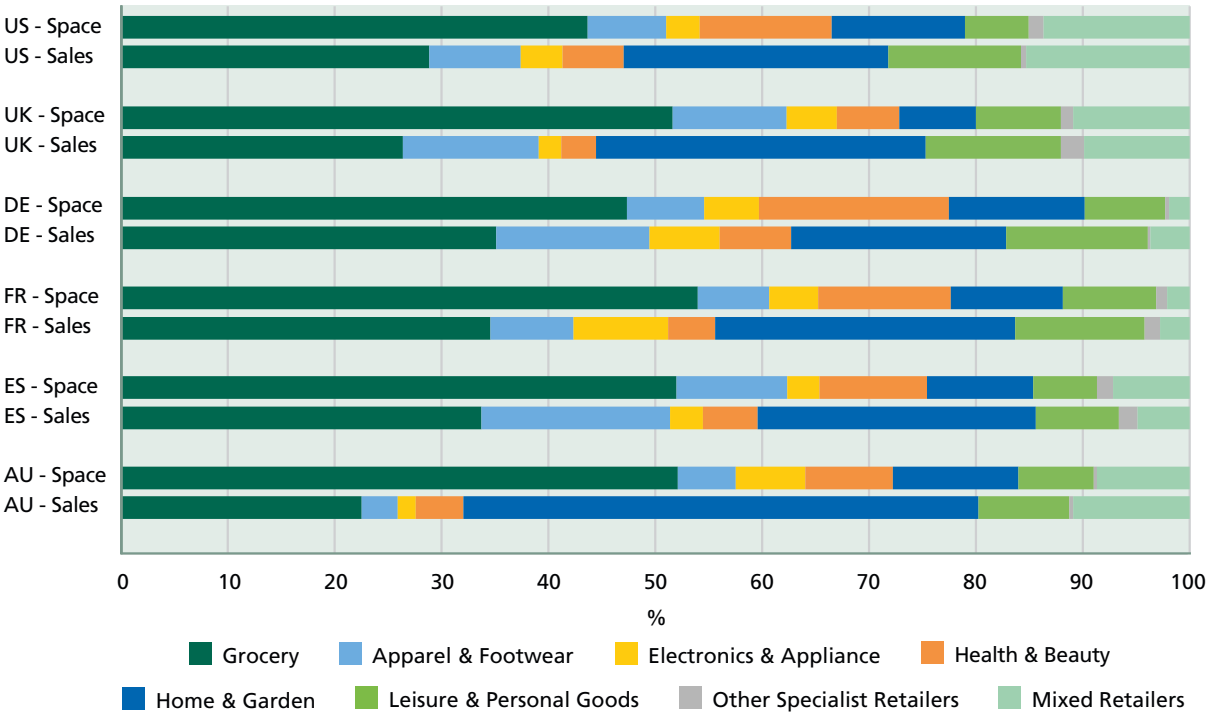
In terms of supply of retail space, the markets vary significantly, with Grocery still being broadly the largest category in all countries except for the UK and Australia, where Home and Garden Specialists provide most of the retail space.

The space supply structure is changing:

- Electronics and Appliance – Since 2003, the supply has been reduced in all countries. In the UK it dropped by 39%, in Spain by 36%, by 15% in both Australia and Germany and in the US and France by 6% and 3% respectively.
- Home and Garden – Since 2003, the supply of space has shrunk most in the US (by 18%), UK (by 13%) and in Spain by 10%, while it went up in Australia, France, Germany (by 7%, 13% and 21% respectively).
- The supply of space for Apparel and Footwear in all countries, except for Australia, has plateaued or fallen slightly.

APPENDIX E – RETAIL MARKET DETAILS

Figure E.1: Major Store-based Retail Categories – Space versus Sales, 2017



Source: Euromonitor (2018)

Productivity of Retail Space (sales psm)

Retail productivity has historically varied widely across the analysed countries with the UK and French retail sales double of those in the US.

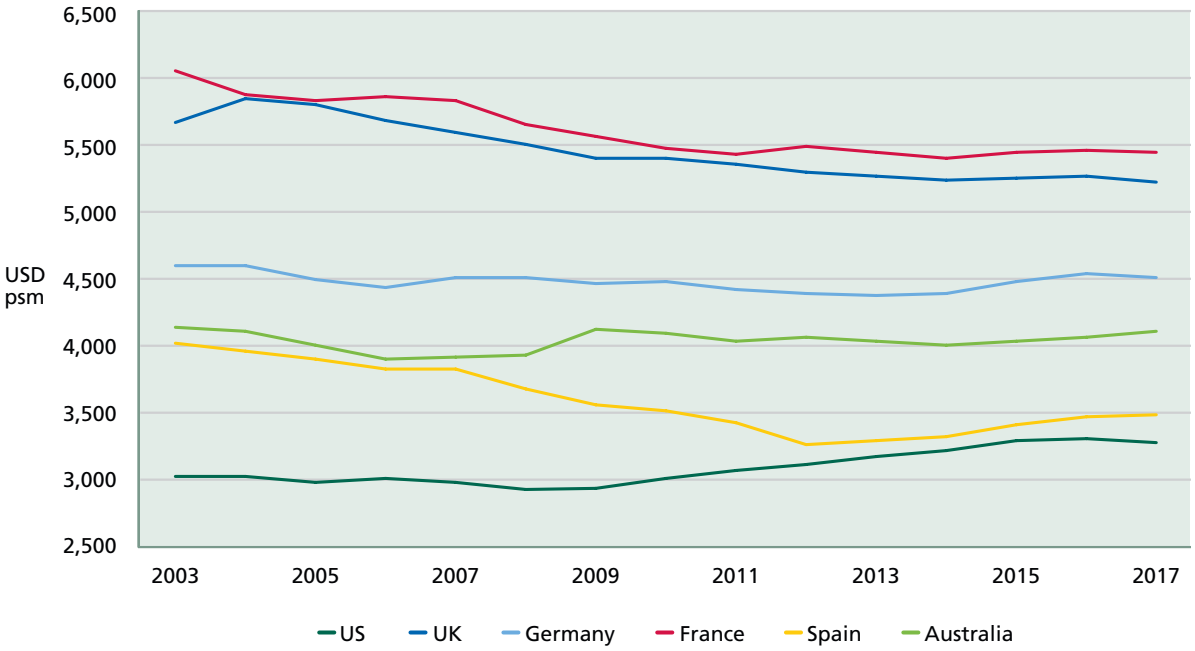
In the US, after a dip during the GFC and subsequent reduction of retail space, the retail productivity has been gradually improving to plateau recently at USD3,227 (2017).

In France and the UK, the productivity has been falling to stabilise following the recovery from GFC. In 2017 these countries still enjoyed the highest psm sales of (USD5,451 and USD5,227 respectively) among the analysed markets.

In Germany and Australia over the last 15 years the productivity has been reasonably stable. In Spain the GFC hit the retail sales resulting in falling productivity until a moderate recovery between 2012 and 2015. The above comparison suggests more recent stabilisation of retail productivity and gradual, recently very minor, productivity convergence across analysed countries.

APPENDIX E – RETAIL MARKET DETAILS

Figure E.2: Effective Retail Productivity, 2003-2017



Source: Based on Euromonitor (2018)

US – Retail Redesign

In the US, retailers in all product categories are suffering from less foot traffic. This is driven by consumers reducing their trips to lesser performing enclosed malls in favour of big box stores for one-stop shopping (Walmart and Target) or to lifestyle centres for a higher-end experience. However, even lifestyle centres are now suffering, with developers changing tenant mix to include larger, non-traditional operators (e.g. H&M, Bed Bath & Beyond) and adding health-related functions, dining and entertainment. However, even this is not very helpful with increasing grocery spending, as many Americans are opting to eat at home (Euromonitor, 2018a).

Many landlords are turning or planning to turn former shopping centres and malls into consumer engagement spaces, where the focus is shifted from products to experiences and non-retail uses (Brown and Lubelczyk, 2018).

While the traditional brick-and-mortar retailers are reducing sales area, the pure play online retailers (operating solely via internet) are establishing their physical presence (e.g. Amazon device-focused pop-up stores, AmazonFresh Pickup or Warby Parker). In most cases it is all about seeing, touching, testing and experiencing the brand rather than just collecting. The stores are usually smaller with limited inventory, enabling easy access to online purchases.

Another interesting trend is that the discounters, which were usually located in less attractive areas, are becoming more frequent tenants within shopping centres filling the vacant space of the mid-market retailers.

APPENDIX E – RETAIL MARKET DETAILS

UK – Administration and Store Closures

Reductions in sales have driven many retailers into administration. Structural changes and secondary difficulties have squeezed operating profits causing unsustainable pressure for some. Large retailers Toys 'R' Us, House of Fraser, Maplin and Poundworld all failed between 2017 and 2018, with 87 retailers failing in total (Centre for Retail Research, 2019). Mounting pressures will see sales psm continue to fall, notably in sectors experiencing the greatest growth online (e.g. Apparel and Footwear).

Overall the sales psm suggest significant market corrections in most categories and one may expect retailers to more and more actively seek to improve the in-store sales by streamlining their retail portfolios.

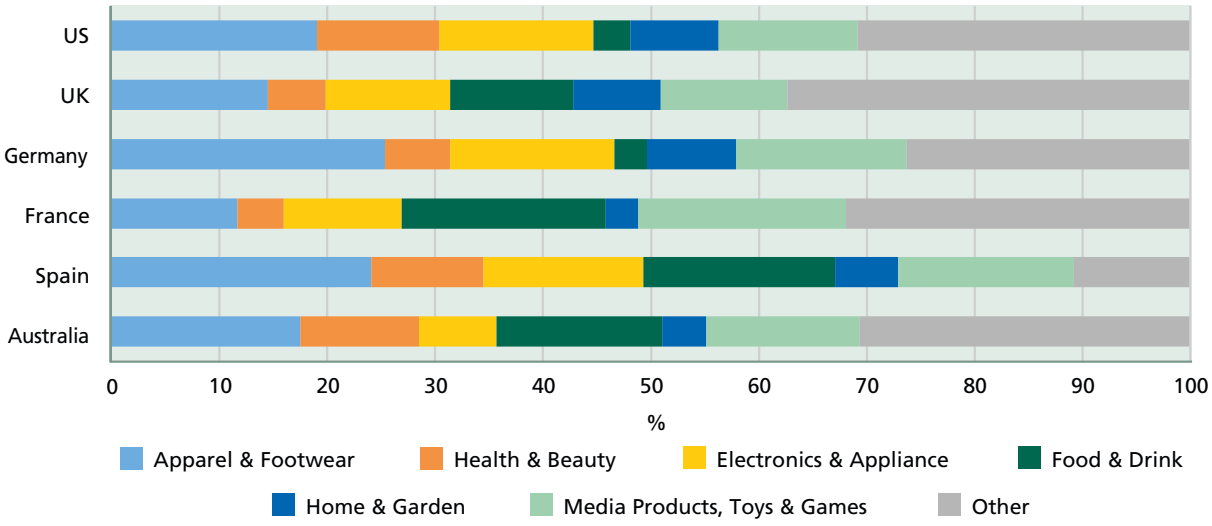
If there was to be a rebalance towards mid-2000 level of around GBP4,500, some 10% of the current retail space would need to be closed now. To achieve average sales of approximately GBP4,300 psm (roughly the 2008 level), over 5% of current retail would be surplus.

E.2. Non-Store Retailing by Category

By value, most internet retail sales across analysed countries are in Apparel and Footwear. However, France has a relatively low share of 12%, while in Germany and Spain shares of Apparel and Footwear stand at 25% and 24% respectively.

The second largest category covers Media Products, Toys and Games, which have only minor representation in the brick-and-mortar market. Overall Electronics and Appliance rank 3rd with relatively low share in Australia (7%) compared to the other analysed markets (11-15%). Food and Drink is a category where major differences exist across countries. In France and Spain as much as 19% and 18% respectively is spent on Food and Drink, while in Germany and the US this is as low as 3%.

Figure E.3: Internet Retailing by Category, 2017



Source: Euromonitor (2018)

APPENDIX E – RETAIL MARKET DETAILS

US – Online Grocery

PwC (2019c) indicate that purchasing groceries online is still a niche area with room to expand. Some 15% of the US survey participants have declared plans for online grocery purchases over the next year. This category is likely to increase in view of the growth of omni-channel retailing. In the US previously pure internet players are starting to establish their physical presence to provide a platform for product discovery and purchasing, e.g. Amazon's acquisition of Whole Foods, AmazonBooks, Warby Parker and Casper (URW, 2018). Amazon's dominant position in the non-store retail (46% of internet retailing) coupled with their investment in physical presence is likely to be a major game changer. This is not just for the retail real estate sector but also for fulfilment and warehousing servicing of retail sales, which will reinforce the oligopoly.

E.3. Country Overview

US

Population growth has increased total retail sales steadily, however there is a clear fall in demand for physical space. Core factors impacting store-based consumption reflect changing consumer preferences. Large Mixed Retailers like Walmart provide a one-stop shop for all types of goods. Growing online retailing is reducing the need for secondary locations where independent or chain stores would have previously operated. Retail malls have been hit strongly, however demand is not even across the country. Retail in smaller towns is struggling whilst those focusing on consumer experience and evolving through active management have maintained demand. The Mall and Lifestyle sector saw negative absorption of 173,000sqm Q2 2018. Moreover, vacancy rates fell 30bps in Q2 2018 (Diduch, 2018). Demand for space will continue to fall as more locations transform to mixed-use entertainment centres.

Brick-and-mortar growth has been driven by the Grocery sector, which happens to have the lowest internet penetration (3%). As the sector has transport limitations, physical stores may suffer as greater sales take place online.

Internet shopping continues to grow and Amazon has a commanding market share (46%). Continuous investment into supply chain logistics will lead to further decline in retail sales. However, it will be offset by internet shopping.

UK

Although the UK has a slowly aging population, growth is still being achieved through positive migration. However, negative retail sales growth since 2003 reflects similar changing consumer preferences as other countries. Internet retailing has dominated non-store sales growth, increasing its share in total retail sales from 2% to 15.5% between 2003 and 2017. As potential growth opportunities in online grocery shopping are cited at 32% (PwC, 2019a), retail sales will continue to fall alongside reductions in space requirements.

"Perfect storms of secondary factors such as business rates, Brexit and employee costs will further add to the falling demand for physical space in the short term" (CBRE, 2019).

Subsequently, secondary locations are expected to face the biggest challenges in adapting the tenant mix and improving the effective use of space. Vacancy in secondary retail has meant that rental growth has stagnated since the GFC, with Q1 2018 reporting an annual decline of 1.2%. (Gulliford and Hickey, 2018).

APPENDIX E – RETAIL MARKET DETAILS

The retail landscape in the UK has led to increased administrations. In 2018 (to August), 28 companies went into administration affecting 2,085 stores and 38,933 employees. Major brands like HMV, House of Fraser and American Golf all yielded to unrelenting pressures (Retail Research, 2018).

Retailers that have adapted to these changing demands creating multi-channel and omni-channel platforms suggest potential solutions for the sector. However, much like Germany, the dominance of Amazon has impacted their growth potential. One in five millennials 'always' heads to Amazon first when making an online purchase and 59% always or often begin online shopping on Amazon, pricing strategy being the key driver (Jackson and Lawrence, 2018).

Germany

Germany has seen immigration-driven population growth year-on-year since 2011 (1.2%). Demand for physical stores is falling, as indicated by stabilised sales. Growth in e-Commerce has resulted in a slightly falling supply where key markets have been moved online. In-store sales for Apparel and Footwear in Germany have fallen by 17%, whilst online, Apparel and Footwear represents 25% of all online retailing. Space optimisation will likely be necessary in these sectors to counter falling demand.

It is likely that many other retail categories will transit into online forms, with outstanding logistics and distribution methods. Currently Germany's in-store Grocery sales outperform all other sectors, however their online presence is minimal (3% market share). Continued growth in that sector will put greater pressure on demand for physical stores. Amazon is already the dominant online seller and has expressed interest in entering the German grocery arena with potential acquisition of a major player (PYMNTS, 2018). Further pressure would therefore be placed on physical retail demand.

France

Despite steady population growth in France, the total retail supply has been growing slowly, adding only 10% extra floor space between 2003 and 2017. Supply per 1,000 population was 1,442sqm in 2017, hence space optimisation is likely to be required as online retailing grows.

Online sales will grow as Amazon continues to increase market share and retailers move further toward omni-channel platforms. Retail percentage shows France at 38% for multi-platform reach. This is comparatively lower than other nations, with the UK at 51% and Spain at 48% (ComScore, 2018). This suggests continued improvement in digital platforms for retailers, increasing demand for 'phygital' concepts.

Overall demand for retail space is weakening especially in secondary cities and downward adjustments, particularly for medium and large units. Prime yields of high streets and new generation retail parks mask the falling footfall of secondary locations requiring yield adjustments in vulnerable assets (Cushman & Wakefield, 2018).

APPENDIX E – RETAIL MARKET DETAILS

Spain

Spain's population is expected to fall. Spain lags far behind the other analysed countries in terms of online sales, digital readiness and postal services. While these may suggest sluggish market growth, with the recovery of the economy, this offers opportunities for accelerated growth of omni-channel retailing. Furthermore, economic conditions have led many Spaniards to act with greater sensitivity to price. Online shopping is often cheaper than in-store, fuelling greater online consumption (Ecommerce News, 2014). This may drive a major reduction in demand for retail space over time.

Perspectives for further adoption of e-Commerce in Spain have been recently investigated by Garín-Muñoz et al. (2019), who concluded that age, education and levels of internet and computer skills as well as trust levels are all significant in explaining the relatively slower adoption of e-Commerce. This highlighted the desirability of using specific measures for the different socio-demographic groups and income strata to enhance e-Commerce penetration. In light of this, acceleration of e-Commerce and reduction of demand for store-based retailing may become a more relevant phenomenon.

Australia

Australia is not benefiting as much as from the Chinese market as 2-3 years ago. The retailing sector is expected to grow (if immigration policy does not change). However, rapidly changing consumer preferences may bring significant shifts in demand for retail space.

Deloitte (2018) found the main reasons for Australians' store-based shopping is the in-store purchase experience (66%) and information and advice about the products (17%). Despite this 28% of retailers expected growth in retail sales to be mostly driven by online offerings, while only 17% saw new stores as a source of growth. Nevertheless, the retailers' views on retail space are mixed, with 42% expecting increase of net stores and 30% a decrease. This marks a significant shift away from traditional retailing, which may be accelerated by major improvements in delivery and postal services.

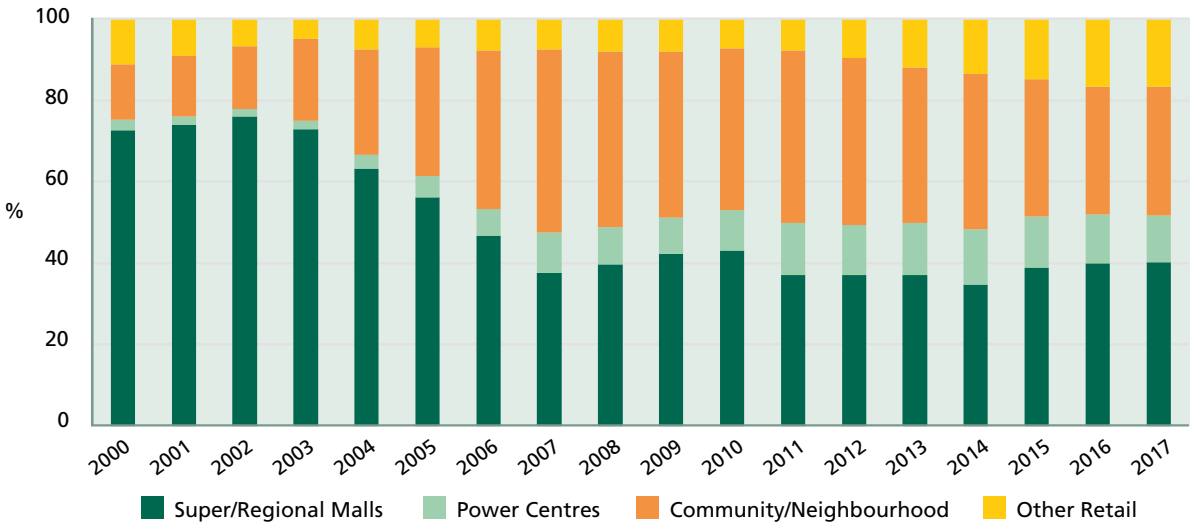
APPENDIX F – RETAIL INVESTMENT SUB-SECTOR ALLOCATION

The following section provides insights into the retail sub-sector structure, where the MSCI data structure differs significantly. Hence, direct comparison between the analysed countries is not appropriate.

US

In the US, the retail real estate sub-sector structure is continually changing. While Power Centres, Community/ Neighbourhood centres and Super/Regional Malls have stable shares relative to each other, the share of Other Retail is increasing.

Figure F.1: US Retail Sub-Sector Investment (by Capital Value), 2000-2017



Source: MSCI (2018)

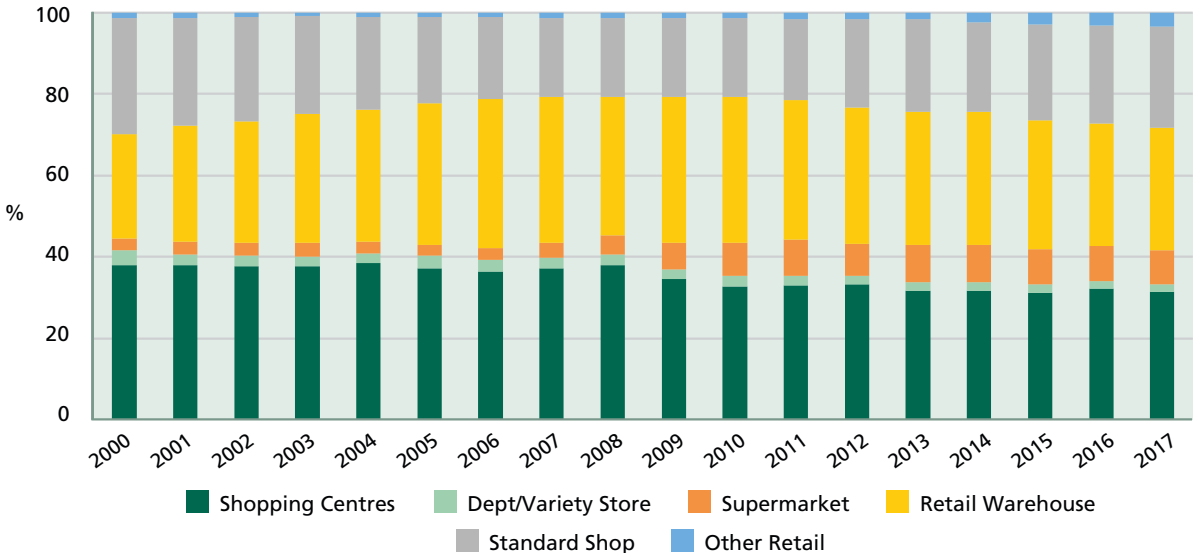
UK

In the UK, sub-sector recent trends are observable. However, they are not statistically significant.

- Shopping Centres – Stabilisation of value since a significant fall during the GFC. 2016-2017 showing signs of slight falls in value.
- Supermarkets – Stabilisation and more recent falls in value accompanied by increasing shares in the retail sector.
- Standard Shops – Increasing share since GFC. Value stabilisation 2016-2017 following an increase up until 2015.
- Department/Variety stores – 2016-2017 showing signs of slight falls in value.
- Retail Warehouses – Stabilisation of value since a significant fall during the GFC. 2016-2017 showing signs of slight falls in value.
- Other Retail – Stable increase in value since 2003, which may be attributable to asset classification.

APPENDIX F – RETAIL INVESTMENT SUB-SECTOR ALLOCATION

Figure F.2: UK Retail Sub-Sector Investment (by Capital Value), 2000-2017

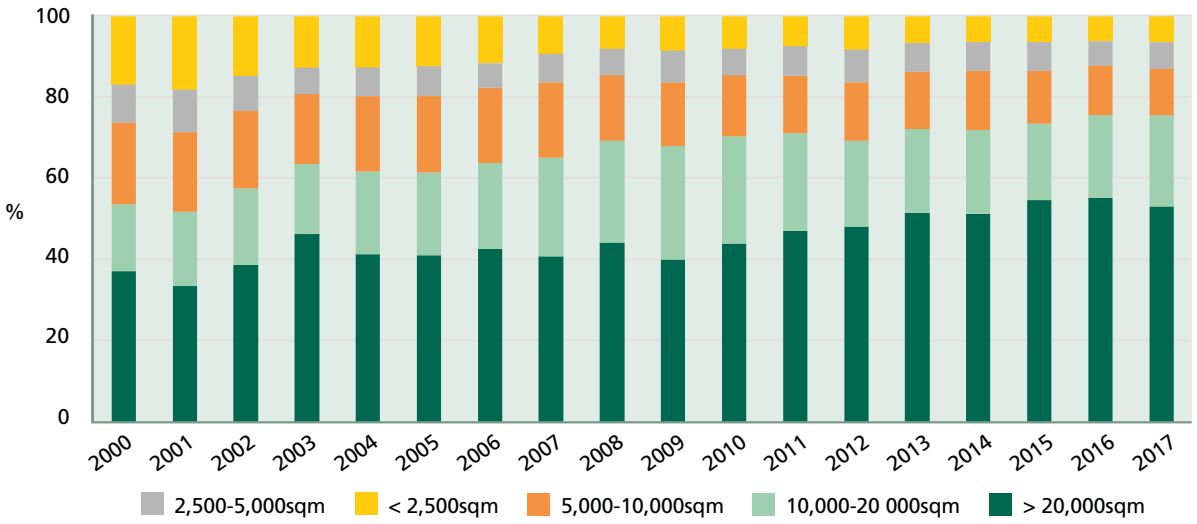


Source: MSCI (2018)

Germany

The sub-sector structure in Germany is based on the retail area of the retail scheme, rather than the retail characteristics (as in the UK). The value of smaller schemes <2,500sqm and 2,500-5,000sqm seems to continue at a low level (combined 12% in 2017), reducing as a share in the total retail mix. Contrary to this, the largest schemes above 20,000sqm are growing both in value and in share (47% share in 2017), suggesting gradual movement towards larger retail assets. The proportion between major and other cities is stable around 50/50.

Figure F.3: German Retail Sub-Sector Investment (by Capital Value), 2000-2017



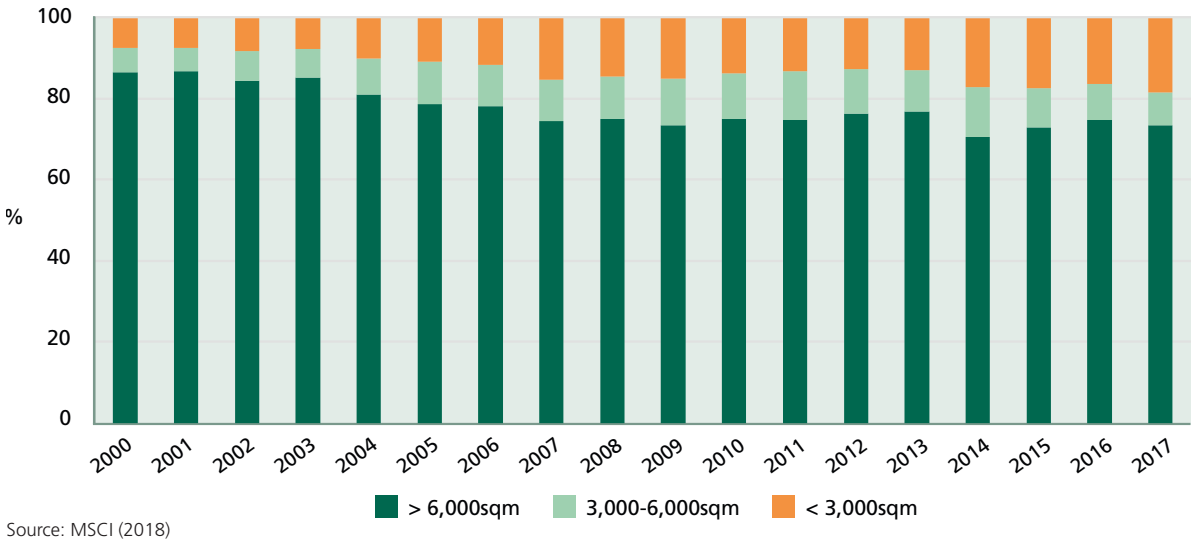
Source: MSCI (2018)

APPENDIX F – RETAIL INVESTMENT SUB-SECTOR ALLOCATION

France

As in Germany, in France the sub-sector structure is based on the retail area of the retail scheme, rather than the retail characteristics (as in the UK). While larger schemes above 6,000sqm dominate the market (share of 69% in 2017), smaller schemes below 3,000sqm are being more frequently invested. This is especially prominent as Shopping Centres share is falling for the benefit of Other Retail.

Figure F.4: French Retail Sub-Sector Investment (by Capital Value), 2000-2017



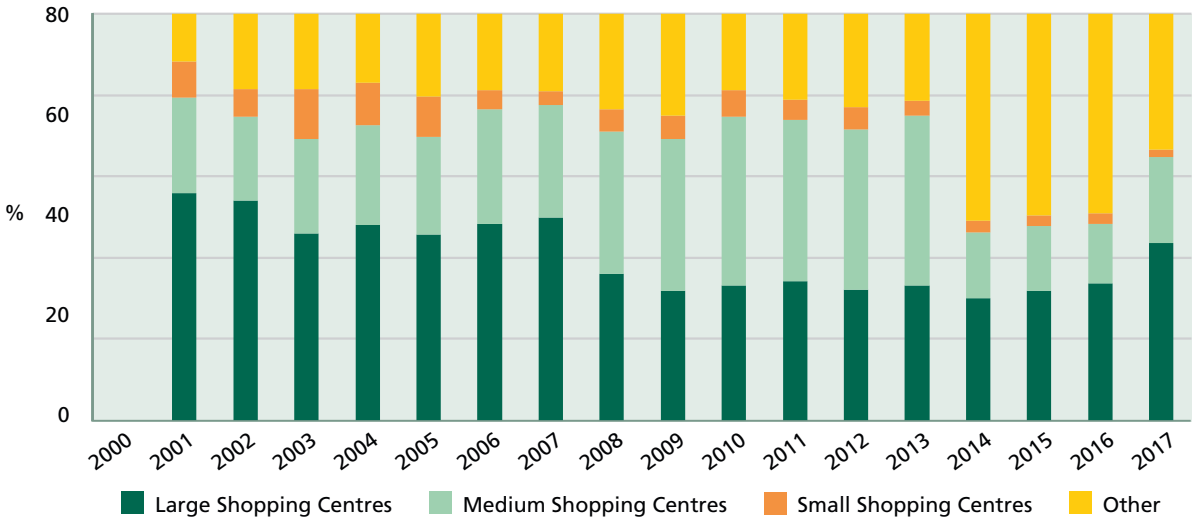
Source: MSCI (2018)

Spain

In Spain, as in Germany and France, the sub-sector data is based on retail area (Large Shopping Centres: 40,000sqm+; Medium Shopping Centres: 20,000-40,000sqm; Small Shopping Centres: less than 20,000sqm). However, no reliable conclusions with respect to structural sub-sector changes can be drawn, given the heavy variation of retail capital values driven by changes in the sample.

APPENDIX F – RETAIL INVESTMENT SUB-SECTOR ALLOCATION

Figure F.5: Spanish Retail Sub-Sector Investment (by Capital Value), 2000-2017

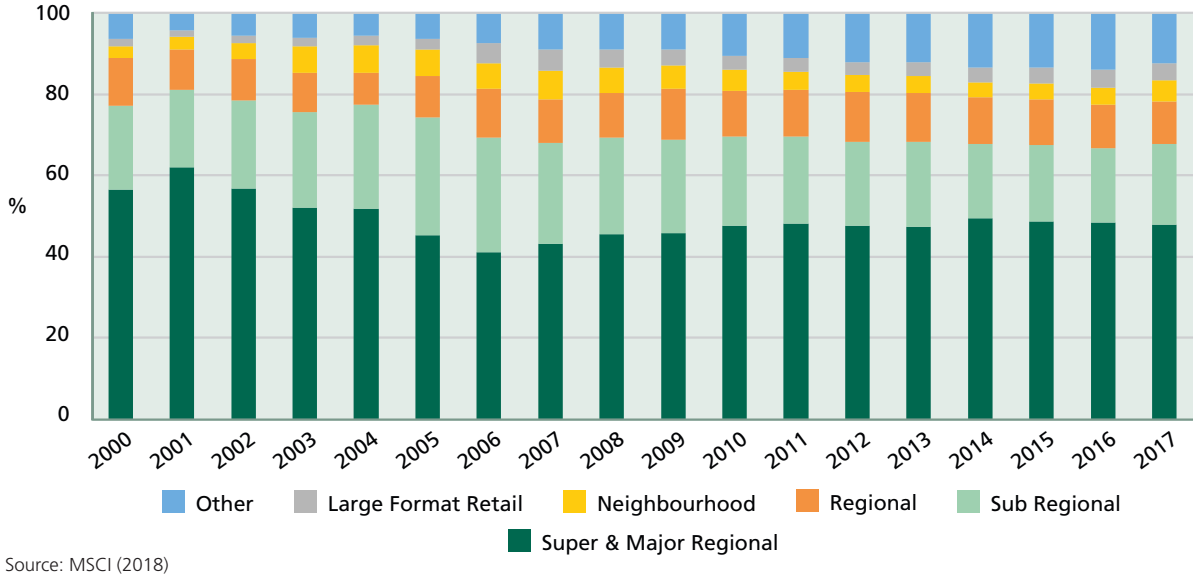


Source: MSCI (2018)

Australia

In Australia, as in the US and UK, the sub-sector structure refers to types of retail schemes. Since the GFC there have been no material sub-sector shifts, with Super and Major Regional Schemes dominating the market at 48%.

Figure F.6: Australian Retail Sub-Sector Investment (by Capital Value), 2000-2017



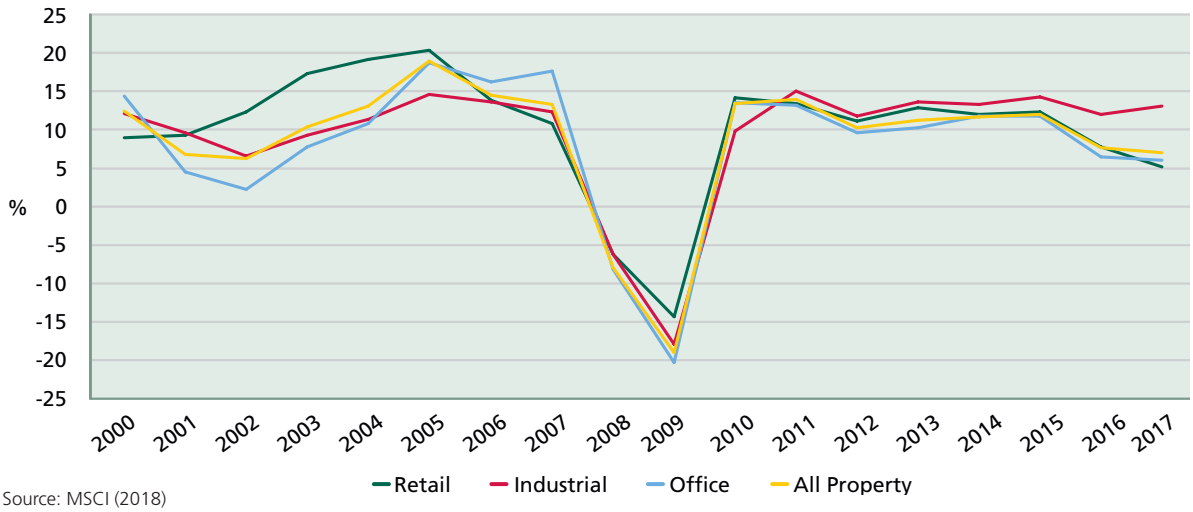
Source: MSCI (2018)

APPENDIX G – RETAIL INVESTMENT TOTAL RETURNS

US

In the US, since the post-GFC recovery in 2010, the total return from retail has fallen gradually. While following the GFC, retail has been roughly at levels close to the office sector, the industrial sector enjoys a reasonably stable level.

Figure G.1: US Retail and Other Sector Total Returns, 2000-2017



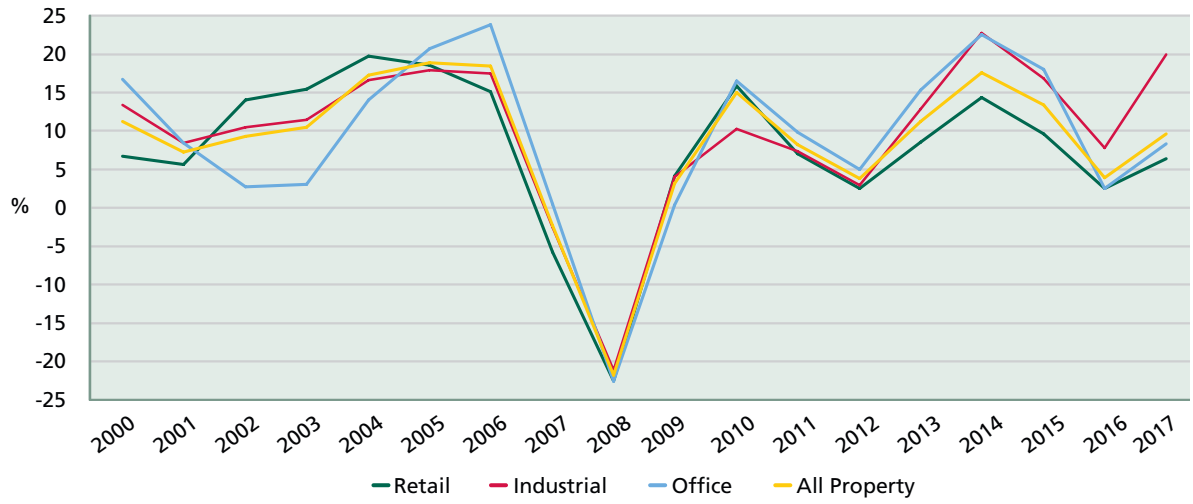
Source: MSCI (2018)

In the US all retail sub-sectors seem to be converging to the same level, with Super/Regional Malls showing the fastest drop.

UK

In the UK, following the GFC, the total return from retail is subject to fluctuations in line with the other market sectors. Retail total returns since 2016 have converged to the office level.

Figure G.2: UK Retail and Other Sector Total Returns, 2000-2017



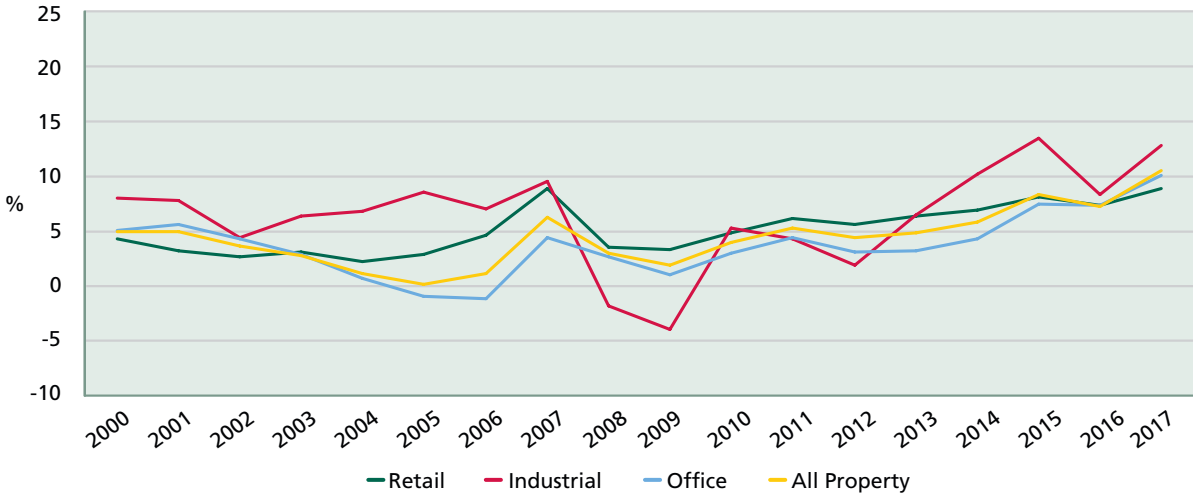
Source: MSCI (2018)

APPENDIX G – RETAIL INVESTMENT TOTAL RETURNS

Germany

In Germany, the total return has been steadily increasing since the GFC, however the retail sector is now showing the slowest growth, being outperformed by industrial and office.

Figure G.3: German Retail and Other Sector Total Returns, 2000-2017



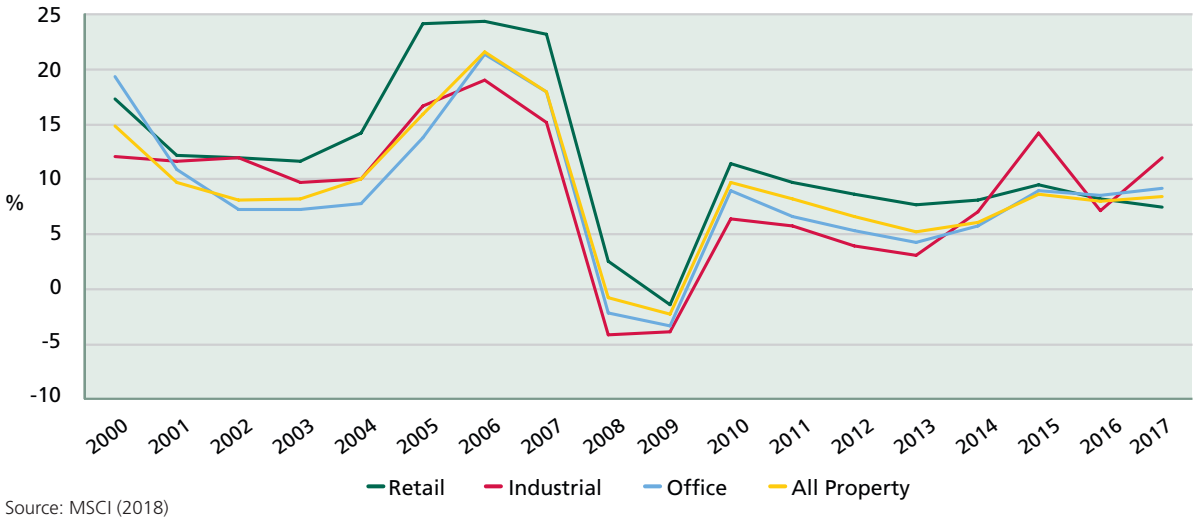
Source: MSCI (2018)

At the sub-sector level there is no clear trend to suggest differences in performance.

France

In France, the total return has broadly stabilised after 2010 following the GFC turmoil. although notably, in 2017, retail fell behind all remaining sectors. Retail sub-sector analysis does not suggest any material differences in total return.

Figure G.4: French Retail and Other Sector Total Returns, 2000-2017



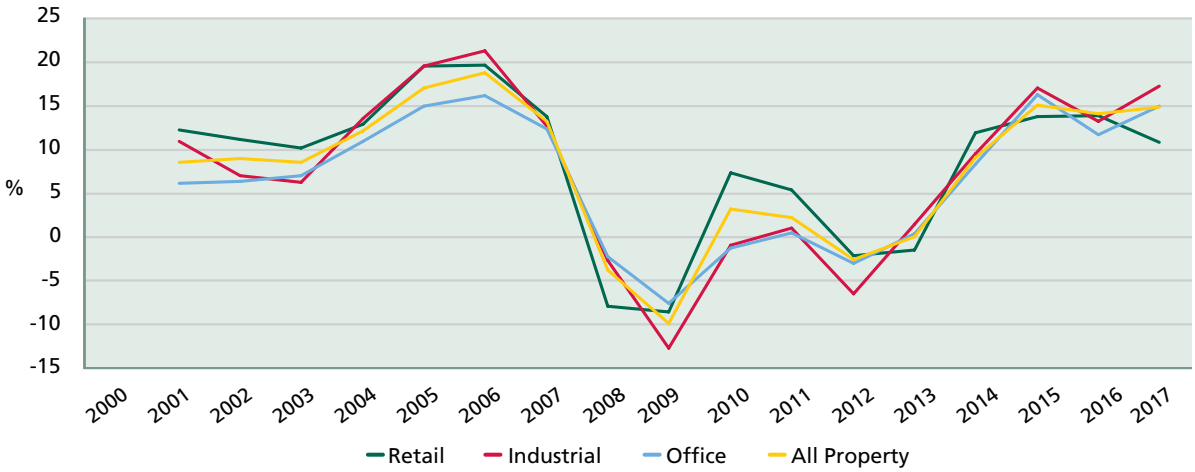
Source: MSCI (2018)

APPENDIX G – RETAIL INVESTMENT TOTAL RETURNS

Spain

Total return in Spain has significantly improved since the GFC to stabilise in 2015. 2017 results suggest a fall in retail total return as compared to the office and industrial sectors. Note that the retail fall may be attributable to the shallow market.

Figure G.5: Spanish Retail and Other Sector Total Returns, 2000-2017



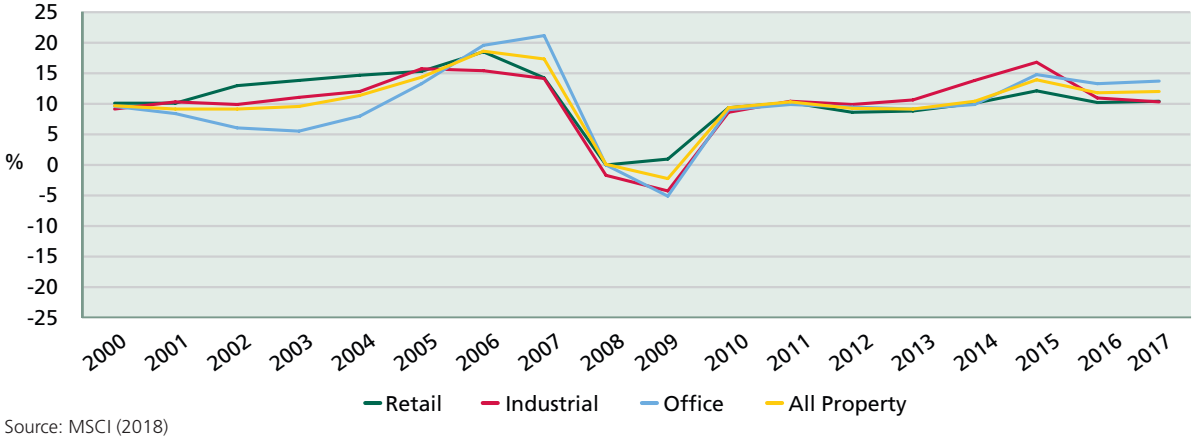
Source: MSCI (2018)

At sub-sector level, since 2014, it seems that the Large Shopping Centres (40,000sqm+) have been doing much better than the rest of the market. Again, given the number of transactions this may be attributable to the shallow market rather than to specific asset parameters.

Australia

In Australia, the total return following the post-GFC recovery and convergence across the sectors does not show any major sector differences. Unlike in other countries, from 2016, retail and industrial seem to be the lowest performing sectors. The sub-sector analysis suggests a significant variation of total returns across the sectors, with Regional malls enjoying the lowest levels of growth.

Figure G.6: Australian Retail and Other Sector Total Returns, 2000-2017



Source: MSCI (2018)

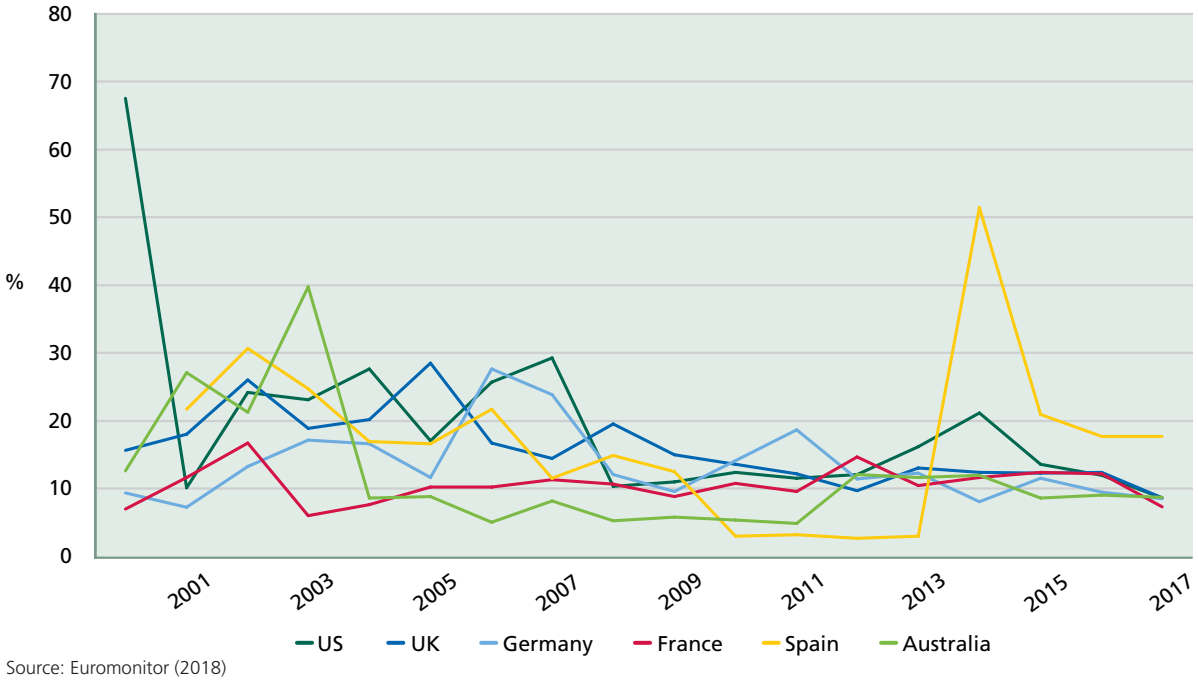
APPENDIX H – INVESTMENT ACTIVITY IN RETAIL

It has been noted that for most of the countries analysed there have not been major shifts in investment exposure to the retail sector. Further analysis was conducted, looking at capital flows and transaction activity in the retail real estate investment sector. Specifically, the following have been assessed:

- Capital flows into retail assets (total capital expenditure);
- Capital flows out of retail assets (total capital receipts);
- Turnover: the sum of total capital expenditure and total capital receipts in the market; and
- The level of transaction velocity in the market (turnover as a percentage of total capital value).

Across the countries analysed, 10-40% of retail properties by capital value changed hands every year prior to the GFC. After the market recalibration provided by the GFC, only 10-15% of value has transacted each year. Spain was the exception, where the market effectively froze between 2010 and 2014 and then saw transaction volumes rise dramatically. The US, after a spike in 2014, seems to have joined the other countries at the sub-10% level.

Figure H.1: Retail Investment Transaction Velocity, 2000-2017



Source: Euromonitor (2018)

This low market activity may be a sign of a long-term new equilibrium at a lower level of activity. However, it may also suggest that market participants have been playing a "wait-and-see" game.

APPENDIX I – MODEL STRUCTURE

To make projections of the future allocation to retail real estate investment, the following model using the autoregressive integrated moving average (ARIMA) method has been applied.

I.1. Model Limitations

The model assumes platform neutrality in aggregate. The individual selection of store-based versus non-store retail channel is assumed to not have a material impact on total retail spend. Nihalani and Reid (2018) suggest that consumer spending is not a zero-sum game and that "every additional dollar of online spending does not equate to a dollar less spent in stores, particularly if online sales lead to greater efficiencies". In economic theory, this is supported by non-perfect substitution between the distribution channels (with varying distribution and transaction costs and with e-Commerce sometimes argued to have lower costs). However, as the current research does not provide sufficient evidence for quantification of this phenomena, the above platform neutrality assumption was adopted.

Retail space is defined as space used for trading, which is likely in the future to include brand promotion space, with the primary objective of showcasing products and providing brand experience, rather than actually selling goods. This could result in the model over-estimating the reduction in retail space required.

The model does not consider changes in supply chain costs of non-store retailing and implied goods pricing changes (including delivery costs passed through to purchasers), which ultimately may affect pricing of goods in brick-and-mortar retail.

While Scenario 1 provides point forecasts, Scenarios 2 and 3 provide results based on 80% confidence intervals, which are broad especially for Spain. These confidence intervals were used to generate edge cases in a methodologically consistent manner.

The model provides long-term projections and does not consider market cyclicity and one-off events. Real estate cyclicity is now heavily debated, with many practitioners recently suggesting that the matured markets may be in significant decline. The model is based on changes in e-Commerce (which are not anti-cyclical vis-à-vis the real estate market) and its aim is to project long-term shifts rather than annual changes, which would naturally be affected by the real estate cycles.

Political, legal, tax or other short- and medium-term similar changes and major innovations, as well as natural disasters in the analysed markets, may significantly distort the projected results (for example, Brexit-related political uncertainty).

The model considers only the professionally managed segment of the real estate investment market covered by the MSCI sample. It assumes that the increase in retail allocation (implied demand increase) would be based on investment of market participants covered by this sample. It also assumes that the surplus retail assets will either be retained within the sample, but converted/redeveloped to accommodate other uses or sold by the participants to other market players outside this sample (small private landlords, owner occupied portfolios or development companies). The capital released by disposal of surplus retail assets will be absorbed by other sectors in the professionally managed segment of the real estate investment market.

APPENDIX I – MODEL STRUCTURE

The model assumes constant retail space productivity as per 2017. The retail space productivity varies strongly across the analysed countries. Should the space productivity improve, one would expect further reduction in demand for retail space and accelerated reduction of investment allocation to retail real estate.

The model assumes that the current capital value reflects equilibrium value. It therefore excludes movement in capital value of retail assets currently held within the MSCI sample. Note that the real estate market is typically slow to respond to changing demand. This is likely to cause a temporary disequilibrium, with declining capital values resulting from investors delaying their retail divestment and retail conversion decisions and driving oversupply. This in turn is likely to put extra pressure on rents to fill up vacant space. Moreover, it is likely that the capital values of retail assets will initially be slow to respond to the shrinking brick-and-mortar retail market due to valuation stickiness (see Section 3.2). As the MSCI sample covers more sophisticated market players under obligation to regularly report the market value of their assets and proactive players with long-term investment strategy, it is likely that the 2018-2030 period will be sufficient for the market to adjust and reach a longer-term equilibrium.

I.2. Main Model A – Projection Based on Total Retail Sales

Stage 1: Projections of Demand for Retail Space

Stage 1 projections are based on 2003-2017 Passport statistics, detailed in Section 4.

Step 1: Calculate projections of Total Retail Sales per capita (TSpc); Internet Retail Sales per capita (ISpc) and Non-Store, Non-Internet Retail Sales [including Direct Selling, Homeshopping, Vending] per capita (NSpc)

Step 2: Calculate projections of Total Non-Store Retail Sales per capita (TNSpc), at each time t, using the sum of:

- Internet Retail Sales per capita
- Non-Store Non-Internet Retail Sales per capita

$TNSpc_t = ISpc_t + NSpc_t$

Step 3: Projections of per capita Store-Based Retail Sales (SBpc) as

$SBSpc_t = TSpc_t - TNSpc_t$

Step 4: Scale up projections of Total Store-Based Retail Sales (SBSpc) based on population projections (PP)

$SBS_t = SBSpc_t * PP_t$

Step 5: The future annual % loss of Store-Based Retail Sales versus SBS_{2017} ($LSBS_t$) is:

$LSBS_t = (SBS_{2017} - SBS_t) / SBS_{2017}$, where $t > 2017$

Step 6: Calculate Demand for Retail Space (RD) to be retained in store based retail real estate, assuming that the 2017 Total Store-Based Retail Sales psm ($SBSpsqm_{2017}$) is a reasonable proxy for future sales psm (see note below).

$RD_t = SBS_t / SBSpsqm_{2017}$

APPENDIX I – MODEL STRUCTURE

It is implied that, for landlords, the reduced store-based retail will result in either (1) holding disused retail properties no longer capable of generating returns from their designated use, or (2) releasing/re-investing the surplus space as non-retail space/greyfield for future conversion or redevelopment.

Note on 2017 Retail Sales

Analysis of CPI adjusted historical psm sales since 2003 suggest stable values. 2017 values have been assumed to be a reasonable proxy for projection purposes. However, strong variations exist in retail sales psm across analysed countries.

Stage 2: Projections of Future Retail Real Estate Investment Allocation

Given the above, it is expected that in the long term the retail real estate investment allocation will mirror the demand for retail space and hence the Capital Value.

Stage 2 uses MSCI statistics described in details in Section 5.

Step 7: Assuming no changes to other sectors and equal loss of retail space across all retail subsectors, the retail real estate investment Capital Value (CV) is reduced using the % loss ratio calculated in Step 6:

$$CV_t = CV_{2017} *(1- LSBS_t), \text{ where } t > 2017$$

Stage 3: Projections of Future Re-allocation of Current Retail Real Estate Investment elsewhere

As the Capital Value of future Retail Investment is expected to fall, the release of surplus retail assets is expected to be absorbed elsewhere.

This research is limited to the professionally managed segment of the real estate investment market. It is assumed that the released value will be absorbed by other sectors in the professionally managed segment of the real estate investment market.

Step 8: Capital Value of retail real estate investment withdrawn from the Retail sector to be invested elsewhere (CVNR) – is calculated as the difference between 2017 Capital Value and future Capital Value using 2017 statistics.

$$CVNR_t = CV_{2017} - CV_t, \text{ where } t > 2017$$

Note that CVNR may be reinvested in non-retail real estate sectors or be absorbed by other non-real estate investment products outside the professionally managed segment of the real estate investment market.

APPENDIX I – MODEL STRUCTURE

I.3. Supplementary Model B – Projections Based on Retail Category Sales

Stage 1: Projections of Demand for Retail Space

Stage 1 projections are based on 2003-2017 Passport statistics, detailed in Section 5.

Step 1: Based on per capita category retail sales and population forecast, making projections of future Total Retail Sales (TSpc) as a total of projected Category Retail Sales (CSpc):

$TSpc = \Sigma_{i=1}^{n} CSpc_i$, where $CSpc_i$ include:

- Apparel and Footwear Specialist Retailers;
- Electronics and Appliance Specialist Retailers;
- Health and Beauty Specialist Retailers;
- Home and Garden Specialist Retailers;
- Leisure and Personal Goods Specialist Retailers;
- Other Specialist Retailers;
- Grocery Retailers; and
- Mixed Retailers.

Step 2 onwards in accordance with Model A.

As Model B failed to provide superior or more meaningful results to Model A, its use for further analysis was limited.

APPENDIX J – SCENARIO 1, BASE CASE

J.1. Total per capita Retailing

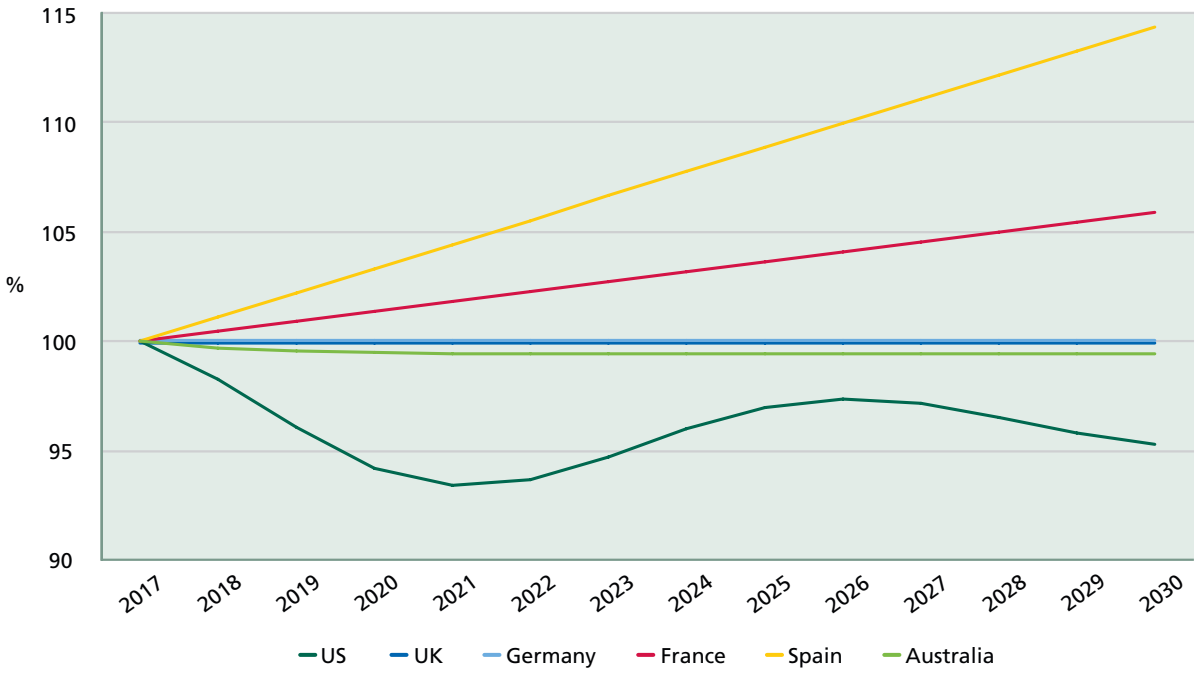
Total per capita future retailing for 2018-2030 was projected based on the historical total retail sales, which except for Spain, suggests very limited growth.

Table J.1: Scenario 1 (Base Case) Total Retail Sales – Total Growth between 2018 and 2030

Country	Cumulative growth between 2018 and 2030	Comments
Australia	0%	Constant
US	-3%	Mostly driven by falling sales of Mixed Retailers and specialty retailers such as Electronics and Appliance, Leisure and Personal Goods and Other.
UK	0%	Mostly driven by falling sales of Home and Garden, Leisure and Personal Goods specialist retailers.
France	5%	Note that given the historical data variability the confidence intervals at 80% are relatively broad (+/- 38%)
Germany	0%	No material change.
Spain	13%	Mostly driven by the recent economic revival. Note that given the historical data variability the confidence intervals at 80% are very broad (+/- 79%)

Note: per capita, in local currency.

Figure J.1: 2030 Projected Total Retail Sales (per capita) versus 2017, Scenario 1 (Base case)

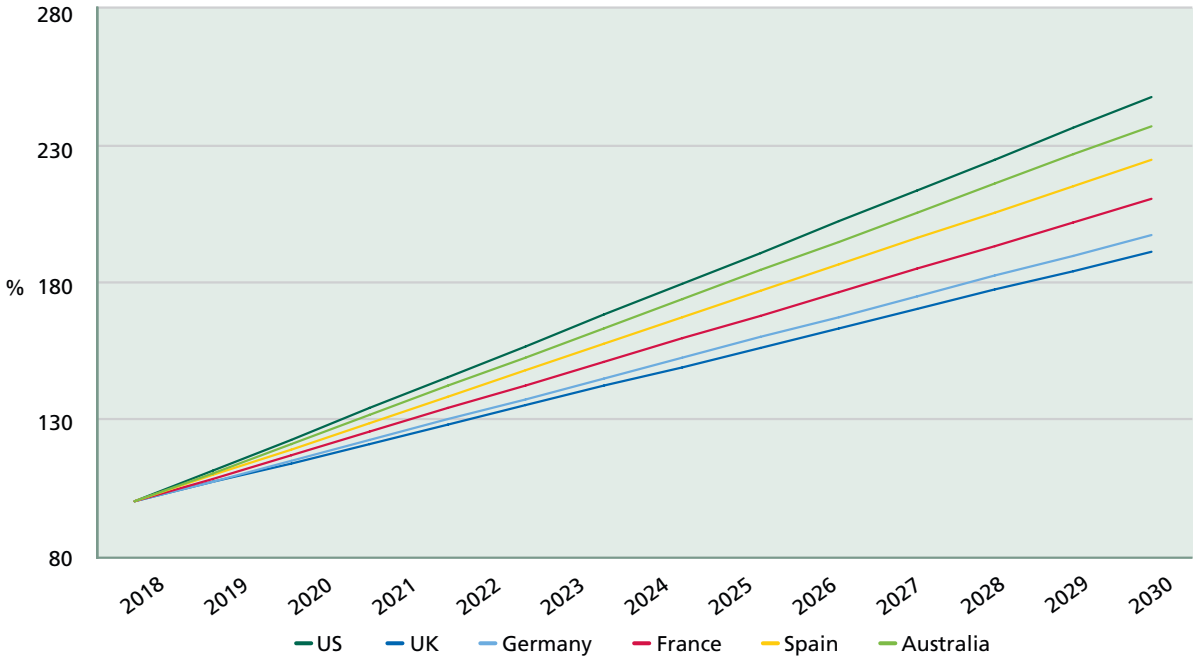


APPENDIX J – SCENARIO 1, BASE CASE

J.2. Internet per capita Retailing

Total per capita future internet retailing for 2018-2030 was projected based on the historical total internet retail sales. The point forecast projections suggest strong cumulative growth especially in the US (by 123%) and Australia (115%), with slower growth in the UK and Germany (79% and 84% respectively).

Figure J.2: Projected per capita Internet Retailing versus Scenario 1 (Base Case)



J.3. Non-internet and Non-Store per capita Retailing

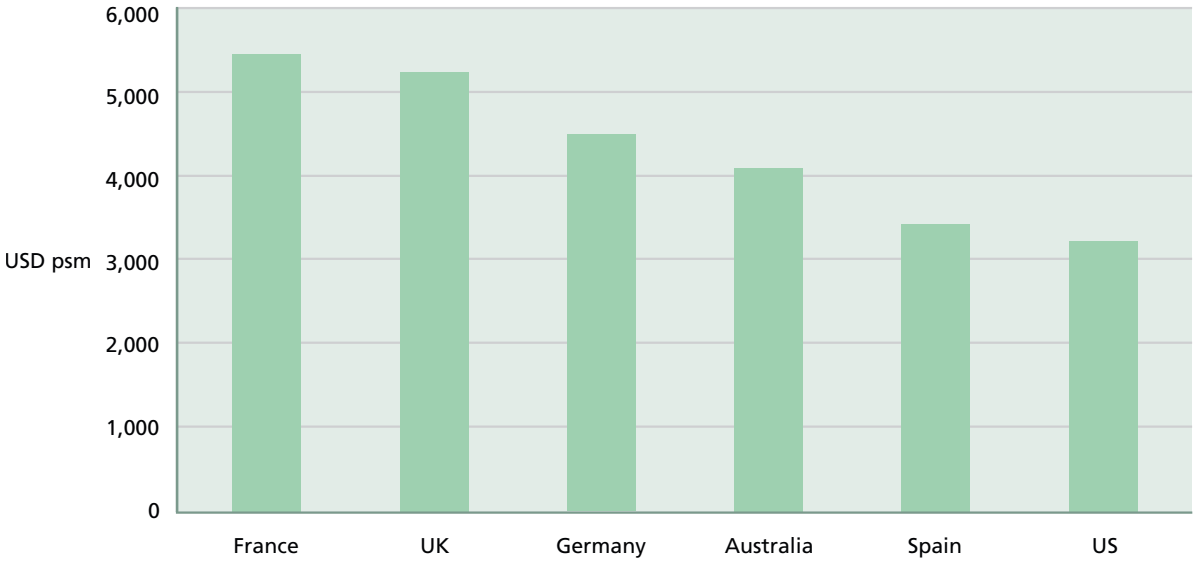
Total per capita future non-internet and non-store retailing for 2018-2030 was projected based on historical retail sales via direct selling, home shopping and vending. The point forecast projections suggest moderate cumulative growth in the US (14%) and strong falls in all other countries except for Spain, where no major changes are expected (Note that in Spain the non-internet and non-store retailing is strongly dominated by cigarette sales).

APPENDIX J – SCENARIO 1, BASE CASE

J.4. Total Store-Based Retail Sales

The total store-based retail sales projections have been used to project the future demand for retail-space based on the net of total retail and non-store retail sales projections and psm store-based retail sales (as of 2017).

Figure J.3: Retail Sales, 2017



Source: Euromonitor (2018)

APPENDIX K – SCENARIOS 2 AND 3, INTERNET PER CAPITA RETAILING

Scenario 2 – Internet per capita Retailing

The following table summarises differences in growth dynamics of internet retailing on a per capita basis between Scenario 1 – Base case (point forecast) and Scenario 2 – Accelerated adoption of e-Commerce (upper 80% confidence level). Note that on average Scenario 2 suggests a faster e-Commerce adoption by some 40-50%.

Table K.1: Internet Retail Sales (per capita, in local currency)
Total Growth between 2018 and 2030: Scenario 2 – Accelerated Adoption of e-Commerce

Accelerated Adoption of e-Commerce – Internet Retail Sales	AU	US	UK	FR	DE	ES
Cumulative growth between 2018 and 2030	115%	123%	79%	94%	84%	105%
80% confidence intervals	175%	177%	123%	128%	121%	153%

AU (Australia), FR (France), DE (Germany) and ES (Spain)

Scenario 3 – Internet per capita Retailing

The following table summarises differences in growth dynamics of internet retailing on a per capita basis between Scenario 1 – Base Case (point forecast) and the Scenario 3 – Slower adoption of e-Commerce (upper 80% confidence level). Note that on average Scenario 3 suggests a slower e-Commerce adoption cumulative by some 40-60% by 2030.

Table K.2: Internet Retail Sales (per capita)
Total Growth between 2018 and 2030: Scenario 3 – Slower Adoption of e-Commerce

Slower Adoption of e-Commerce – Internet Retail Sales	AU	US	UK	FR	DE	ES
Cumulative growth between 2018 and 2030	115%	123%	79%	94%	84%	105%
80% confidence intervals	175%	177%	123%	128%	121%	153%

AU (Australia), FR (France), DE (Germany) and ES (Spain)

APPENDIX L – UK OUTLOOK

Economy and Retail Sector

In the UK retail customer preferences are evolving much faster than the most retailers. Politics, dominated by the uncertainty of the EU exit process, is another strong influencer. This is displayed by the fall in the Consumer Confidence Index, which has reached levels similar to those in mid-2013, post the GFC low point (OECD). According to RICS, 56% of respondents believe that the country is in early or mid-downturn (RICS Economics, 2019). Property news media is dominated by retailers' bankruptcies and company voluntary arrangements as their shops become economically obsolete due to e-Commerce (e.g. HMV, House of Fraser, Maplin and Toys 'R' Us). Further, Cobb (2019) suggests "the UK retail environment to be headed for a longer and more protracted slowdown over the coming year". However, the EU exit-linked 'wait and see' attitude cannot last forever as investors believe in the long-term strength of the market. RICS (2019) add that the UK is one of the most liquid and transparent real estate markets and has had a great rate of adoption, which has proven in the past that it can bounce back relatively quickly. The reduction in demand for retail is therefore likely to be compensated for by growing demand for real estate in other sectors (logistics and residential).

InternetRetailing (2018b) remark that the leading UK retailers stay ahead of the competition and stand out in terms of product reviews, apps personalisation, generous return and refund policies and easy navigation across channels. Argos, Boots, Marks & Spencer, ScrewFix and Tesco are among the top omni-channel retailers. However, Quill (2018) noticed that such retailers have a long way to go in supplying a streamlined, persuasive online experience to customers. The biggest area for improvement is content experience (e.g. mobile friendly websites to enhance transaction journey). Notably, among the best scoring retailers (Quill Quality Score) are retailers on the growth trajectory as well as those working hard to survive. On the other hand, fashion is a major category among the worst scoring retailers (brands such as H&M, Brantano, and Cotton Traders).

Investor Behaviour

UK active investors have been slow to react to a changing retail market that has left the UK with more retail space supply than necessary. At the same time in the US, investors have been more proactive converting non-performing retail schemes into other uses (Cobb, 2019). Retailers' investment will continue to be challenging as it can be expected that further shop closures will occur leaving investors with empty units. This slow market response and retailers' distress will bring higher polarisation of the market. This translates into stronger demand for the winning, highly differentiating schemes (URW, 2018) and accelerating fall of the less competitive schemes with substantial regional differences (House of Commons, 2019). Looking at the UK as a whole, there will continue to be opportunities requiring careful investors' consideration. While this research has not looked into inter-country variation, anecdotally, attendees at MIPIM 2019 suggested that London will be more buoyant than the rest of the UK.

Allocation to Retail Sector

In line with the past trends the allocation to retail in the UK is gradually falling from the exceptionally high level of nearly 50% in 2011 and as of 2018 stood at 35%[1]. These statistics confirm the results of the model discussed in section 6 with the logistics and hotel sectors being major beneficiaries of the reduced exposure to retail.

[1] Note that changes in MSCI reporting (sample size and structure) may have a distorting effect on this measure.

APPENDIX L – UK OUTLOOK

Asset Values and Returns

Total returns have fallen since 2014; in 2018 the UK retail sector returned -1.7% according to the MSCI Annual Property Index. Given that the whole UK market is suffering falls in total returns, there are mixed views with respect to current retail asset valuation. Cobb (2019) suggests that the recent revaluation might have been affected by the falling retail sentiment, while RICS (2019) urges valuers to minimise anchoring. Nevertheless, in the short term, if the oversupply continues, value corrections are likely to occur, which will put further downward pressure on retail real estate investment returns.

Other Sectors

In the UK the major sectors to gain from the distressed retail market are logistics and residential. Norman (2019), based on commentary from JLL, suggests that in 2018 UK online retail drove record demand for big box logistics in 2018 with e-Commerce-related take-up accounting for 27% of total Grade A take-up. This equated to 0.6m sqm taken up by both retailers and third party logistics businesses acting for retailers. The levels of demand over the last five years, against a backdrop of modest economic growth, reflect the structural changes that have taken place in the sector, particularly e-Commerce, as well as the essential role that warehouses play in modern supply chains.

Planning

Given the announced shop closures, and other retailers anticipating closures, an increase is predicted in planning applications for change of use from retail (A1) to other, multiple uses. However, this may not be a long-term solution as the use classes will need to be defined more broadly to allow for simultaneous and flexible uses. Hence, changes to planning regulations are required that may be more radical than the Ministry of Housing, Communities and Local Government is now considering (2018). In the meantime, pro-active investors together with local authorities need to work out feasible re-development solutions to replace surplus retail with more socially and economically sustainable land uses.

APPENDIX M – COMPARISON BETWEEN ALTERNATIVE AND RETAIL SECTORS OF KEY INVESTMENT PARAMETERS

Table M.1: Comparison of Key Investment Parameters of Logistics versus Retail Real Estate Investment

Attribute	Logistics and Fulfilment	Urban Warehouses/Parcel Local Distribution and Collection Centres (Last Mile)
Building type	Built to suit logistics/warehouse buildings. Some limited potential to recycle surplus retail space into logistics and fulfilment uses	Built to suit logistics/warehouse buildings. Due to location and size, strong potential to recycle surplus retail space into urban warehouse uses
Scale	Large-scale properties of scale comparable to smaller retail schemes	Smaller scale as compared to retail schemes Small facilities up to 1,000sqm, located in urban communities, not the CBD (JLL, 2013) Typically hand-picked operations, operated by local couriers, bike and small vehicles (Harrington, 2015)
Long-term contracts	Similar to larger, multi-tenanted retail schemes	More focus on mid- and short-term leases
Rental growth, inflation tracking	Yes, based on mid- and long-term leases	Limited, more focus on mid- and short-term leases
Turnover rent	N/A	N/A
Residual value preservation	Limited due to shorter lifecycle of industrial/ logistics structures	Limited due to shorter lifecycle of industrial/ logistics structures
Asset liquidity	Comparable to retail schemes	Comparable to retail schemes
Management intensity	Limited, allows for relatively passive management	Limited, allows for relatively passive management
Understanding tenants' business	Similar to retail, critical to ensure quality of covenant	Similar to retail, critical to ensure quality of covenant
Co-location synergy	Some potential around specific logistics hub areas, e.g. areas identified by the EU as strategic locations (Prologis Research, 2017)	Limited potential, as focus on particular urban area locations

APPENDIX M – COMPARISON BETWEEN ALTERNATIVE AND RETAIL SECTORS OF KEY INVESTMENT PARAMETERS

Table M.2: Comparison of Key Investment Parameters of Healthcare versus Retail Real Estate Investment

Attribute	Urgent-care Medical Facilities, Health and Fitness Providers	Acute Services/Hospitals	Healthcare Research and Development
Building type	Retail schemes may be adapted for health uses	Retail schemes likely to require substantial redevelopment	Retail schemes broadly adaptable for research and development uses
Scale	Much smaller individual asset value	In countries with more established private medical systems, wider opportunities to capture higher value assets and portfolios (e.g. Australia)	Wider opportunities in countries with more established private medical and educational systems (e.g. Australia, US)
Long-term contracts	Shorter leases, similar to office market or non-anchor retailers	Typically longer-term contracts due to fit-out requirements comparable to retail anchor tenants	Typically longer-term contracts due to fit-out requirements comparable to retail anchor tenants
Rental growth, inflation tracking	Comparable or lower indexation	Comparable or lower indexation	Comparable or lower indexation
Turnover rent	N/A	Very limited scope depending on the investment model	N/A
Residual value preservation	Comparable depending on local demand for services (catchment area)	Comparable depending on local demand for services (catchment area)	Dependent on technology and property parameters
Asset liquidity	Lower than retail	Lower due to more limited market, expected to grow as the market grows and matures	May be much lower due to specific property parameters
Management intensity	Similar to conventional retail	Dependent on the investment model	Limited
Understanding tenants' business	Variable, depending on the type of business. Focus on understanding contracting with the public sector and of the health insurance market, reputation, income stability, quality of services	Variable, depending on the type of business Focus on understanding contracting with the public sector and of the health insurance market, reputation, income stability, quality of services	Focus on understanding contracting with the private and public sector and reputation
Co-location synergy	Dependent on the catchment area, co-location as part of a retail or mixed-use schemes.	Typically separate location, potential synergy with short term accommodation	With other research and development or educational establishments

APPENDIX M – COMPARISON BETWEEN ALTERNATIVE AND RETAIL SECTORS OF KEY INVESTMENT PARAMETERS

Table M.3: Comparison of Key Investment Parameters of Accommodation Versus Retail Real Estate Investment

Attribute	Retirement and Aged Care Accommodation	Private-rented Residential	Student Accommodation	Hotels
Building type	Retail schemes require redevelopment	Retail schemes require redevelopment	Retail schemes require redevelopment	Retail schemes require redevelopment
Scale	Smaller individual asset value	Smaller individual asset value	Established market of sizable, often portfolio investments	Typically much smaller scale than retail schemes
Long-term contracts	Complex lease/part-buy arrangements often involving bundle deals relating to tenants' previous accommodation	Focus on short-term contracts (legal barriers to efficiently implement long term contracts	Depending on the management model – long-term operator contracts, short-term student contracts, potential for tie-up with educational institutions	Typically long-term contracts with operators
Rental growth, inflation tracking	Generally weaker but strongly dependent on the lease model	Generally weaker	Limited due to short-term contracts with end users	Dependent on the model, high dependency on performance
Turnover rent	N/A	N/A	N/A	Dependent on the model. Dependency on day-to-day operations
Residual value preservation	Comparable depending on local market conditions	Comparable depending on local market conditions	Comparable depending on local demand (attractiveness of the relevant educational institution)	Comparable
Asset liquidity	Much lower than retail. Smaller market subject to various types of arrangements	Lower due to more limited market	Lower due to more limited market	Lower due to more limited market
Management intensity	Dependent on the management model. Generally far more management intensive	Dependent on the management model. Generally more management intensive	Dependent on the investment model	Much more than retail. Intensity strongly dependent on the investment model
Understanding tenants' business	Focus on understanding contracting, occupiers' needs (health and care services) and life expectancy	Focus on occupiers' needs	Variable, depending on investment model	Dependent on investment model Focus on understanding both revenue generation and operational costs as well as capex requirements over time
Co-location synergy	Strong synergy with healthcare services. Limited scalability potential	Typically separate location. Potential for co-location with other community uses	Strong dependency on location relative to the educational institution Potential for co-location with educational, retail, entertainment, office and residential uses	Typically separate location, potential synergy with entertainment or business venues, may serve as extension of retail experience

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