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Reframing the Intra-Urban Retail Hierarchy

Abstract

Over recent decades there has been the development of a significant number of 'out of town' retail centres in Western countries. This paper reviews the theoretical background to retail hierarchies before analysing the changing UK retail context and long term forces shaping shopping centres. It reframes the intra-urban hierarchy concept under the banner of a 'convenience retail model'. This paper then examines the process of change in Edinburgh from the 1980s and the interface with planning. New out of town development was opportunity driven by the availability of vacant brownfield sites. Despite restrictive planning policy from the early 1990s out of town retailing continued to grow. The process was piecemeal and the physical nature of these centres were transformed over time. The city centre is found not to be a single entity and the largest outer centre is almost comparable in terms of size of fashion floorspace with individual central segments. The major distinction between in and out of town is now the scale of provision of restaurants and cafes. The paper confirms the dilution of the retail hierarchy and finds that planning policies need to embrace such urban change rather than seek to maintain the status quo.

Introduction

There has been the development of a significant number of 'out of town' retail units, malls and shopping centres since the 1980s in the UK. The same trends are apparent in other Western countries although the precise timings, scale and nature of decentralisation vary. The phenomenon provides a prima facie case that the traditional intra-urban hierarchical model that held for more than a century no longer applies. However, as yet there is little quantifiable evidence to assess this claim. At the same time the theoretical base for the hierarchical model is also challenged and a number of authors have previously concluded that a less structured and more pragmatic approach is needed (Brown, 1993).

This paper reviews the underlying reasons/economics of why intra-urban retail hierarchies are changing, and also why the role of a central place may still be relevant. It considers the dynamics of change in the retail hierarchy by reference to a case study of Edinburgh, a major metropolitan area in the UK. In undertaking this task it chronicles the interface between retail planning policies and market forces. The uniqueness of this paper is that it quantifies/compares retail space disaggregated by types of goods in the city centre and out of town centres retail space. It is also

the first paper that discusses and disaggregates the central retail area as segmented rather than as a unitary entity. Both these research questions have not been investigated to date anywhere and yet the answers are essential for urban retail planning policies that currently seek to maintain the status quo in the UK. This reassessment of the urban retail hierarchy at the beginning of the twenty-first century provides the basis for arguing for a reformulation of urban policy.

It begins by reviewing the theoretical background to the existence of retail hierarchies within urban areas before analysing the changing UK retail context, and the long term forces that have shaped shopping centres, such as the car, and the rise of brands. The role of online sales is also considered. It should be noted that the paper charts the decentralisation of shopping centres in the UK but that other countries with different planning systems, for example, will have variations on the specific patterns. The ultimate goal is to reassess the role of new out of town retail centres within a reframing of the intra-urban hierarchy concept under the banner of a 'convenience retail model'. This task is undertaken through an empirical case study of Edinburgh, a major city of the UK and typical of a modern metropolis. First the study chronicles the changing pattern of retail centres in the city, noting the role and influence of planning. The second step is to quantify and compare the nature and scale of retail space in individual shopping centres. The final section reflects on how and why recent retail development has evolved and relates to a hierarchy or the convenience model. These conclusions are then utilised to draw out the implications or takeaways for policy.

Central Place Theory and Intra-Urban Retail Hierarchies

A retail hierarchy has been traditionally conceptualised as a series of levels of centres or central places with each tier offering a broadly similar different range of goods and services following Christaller (1933). This central place theory is hierarchical in the sense that the higher the tier the wider the range of goods and 'higher order' goods available. Higher tier retail centres incorporate the range and goods sold in the next lower tier and so on. In this way the higher the tier the greater the floorspace and choice of shop types. The model is developed on a theoretical base that presumes a uniform plain on which transport costs are equal in all directions, with an evenly distributed population with equal incomes. On top of this structure there are also a series of underlying behavioural assumptions. These include households shop at the nearest shopping centre and shopping is undertaken via single purpose trips. The range or distance households are prepared to travel to buy particular types of goods varies, with longer shopping trips accepted for 'higher order' goods. At the same time retailers who are profit maximisers have spatial market

thresholds required to make their business viable: 'higher order' goods that people buy less often require large market areas served by the top tier of the retail hierarchy (Brown 1991, 1993).

Central place theory therefore has a series of restrictive and unrealistic assumptions yet the outcomes have been close to reality. Traditionally cities have been characterised as having an internal hierarchy that followed the central place concept of a core retail area offering comparison shops then a series of suburban high streets selling primarily convenience goods with neighbourhood centres offering a more limited range of goods and choice (Berry, 1963). In such a hierarchy it is presumed that households visit corner shops for daily needs, neighbourhood parades for specific shops, district/town high streets for weekly shops and regional centres to purchase comparison goods such as clothing (Schiller, 2001). This model, perhaps idealised, has underpinned spatial planning in many countries for decades despite numerous authors challenging this perspective as far back as the 1980s (Brown, 1993). An alternative related simpler explanation lies in the role of household shopping trips buying a range of goods creating the catalyst for a range of different types of retailers to group together and create a hierarchy of shopping centres (Brown, 1993). In the analysis below this is treated as the traditional model.

A further issue for central place theory is highlighted by spatial interaction theory that presumes shoppers trade off distance to individual centres and their relative attractiveness. They may travel further than their nearest shop/centre to frequent a more attractive centre. This theory is generally originally attributed to Reilly (1931) and has spawned an innumerable number of gravity models with more sophisticated measures of attractiveness rather than the original floorspace and distance. These improved models encompass for example travel time, together with the introduction of the role of intervening opportunities (Harris, 1964). In the world of the spatial interaction model catchment areas of shopping centres are overlapping but shopping trips are still generally single purpose and from home (Brown, 1993).

A final question for central-place theory is its presumption of equilibrium and how change is accommodated. Parr (1981), for example, analyses the issue of temporal change within a comparative static equilibrium framework. He shows how changes in transport costs can change the tiers in the hierarchy by at the very least extending the range people are prepared to travel for a type of good. However, this narrow internal dynamic is undermined by the wider role of car usage/lower transport costs in promoting suburbanisation and resculpturing the retail catchment areas/hierarchy. At the same time these undoubted changes occur against a background of an existing retail infrastructure and planning constraints that often seek to maintain these centres,

supporting locational inertia (Guy, 2002). Nevertheless, it is clear that a given retail hierarchy is not necessarily set in stone. Borchert (1998) argues that a combination of planning policy and post-World War II market trends in the Netherlands led to a collapse of the lower levels of the retail hierarchy proposed by Berry (1963).

This discussion on changing retail hierarchy leads on to a debate about its relevance today. The mechanistic underpinning of central place theory has been rejected some time ago resulting in few empirical studies in recent times. One exception is the exploratory study by Dennis et al (2002) that argues that elements of a central place system could be seen in the 1990s in England via nested catchment areas. However, this research relates to inter-urban rather than intra-urban retail catchments that is the subject of this paper. Further, while applicable when the paper was published hierarchies have changed substantially since that date with the growth of 'out-shopping' from small towns.

It has seen large centres growing at the expense of small town centres that have gone into decline. The evidence on what has been happening is limited but it is exemplified by Genecon (2011) that finds a large increase in clothing and footwear stores in UK regional centres with a parallel decline in sub-regional and town centres over the period 1998-2010. In Germany second and third-tier retail cities have suffered decline relative regional centres (Mensing et al, 2020). There is prima facie evidence that a tiered inter-urban hierarchy has been denuded although the regional centre remains as a central place. Central place processes therefore still exist even if there have not been academic studies (Jones, 2017; Taylor et al, 2010).

Undoubtedly there has been substantial change to underlying parameters since Christaller's formulation. This is most notably seen in the rise of car usage; for example in the UK it increased by 20% in the thirty years from 1983. In fact car usage is a complex interaction between rising levels of car ownership, the development and provision of roads and the location decisions of households and businesses in urban areas (Ferguson and Woods, 2009). Today's decentralised low density urban form with diffuse employment locations means that shopping travel patterns may be linked to commuting and work location as well as leisure activities. In other words shopping trips are not necessarily single purpose but can be multi-purpose such as shopping on the way home by car from work (Clarke et al, 2006). On the other hand the ease of using the car can also mean shopping trips to collect or buy a single item, or even shopping at multiple localities in one car trip facilitated by car parking adjacent to stores.

It is clear that the advent of the family car has had the capacity to challenge historic retail hierarchies and by supporting suburbanisation logically reframe retail catchment areas. In fact arguably formal catchment areas in cities no longer apply, given multi-purpose car trips no longer necessarily from a residence origin, increased consumer choice and competition between retailers (see for example Jackson et al (2006) for UK; Rabbanee et al (2012) in Australia; Cliquet and Guillo, (2013) in France). In particular it has brought decentralisation of retailing. An intra-urban retail hierarchy based on classic central place theory rests on a set of behavioural assumptions about how we shop that no longer holds, even approximately. Its detailed outcomes are also not applicable. An alternative explanation linked to households buying a range of goods in one shopping trip or at one centre is also contested by the flexibility of the car. In addition shopping flexibility in western economies has been augmented by the ubiquitous use of fridges and then freezers by households. On the other hand central places exist and a traditional a shopping centre hierarchy may also remain as a form of artefact, protected by restrictive planning policies (see later).

A new phenomenon since 2006, certainly in the UK, has been a growth of online sales. The ability to search online for goods means that the attraction of the range of goods available in central places, at least for utilitarian shopping, is significantly diminished (although it still does not replace touching goods). In the UK at least major retailers have promoted 'click and collect' as a response, whereby customers buy online and collect in store, and as consequence almost 90% of UK retail sales still involve physical stores (CBRE, 2019). This is facilitated by adjacent car parking, and has therefore reinforced a trend toward out of town shopping centres (Jones and Livingstone, 2018).

The conclusion is that today's 'convenience' model (to adopt a term from Portas (2011)) of shopping generates a spatial pattern of retail centres **within** urban areas that do not necessarily require a hierarchical form, both in terms of size and the range of goods sold. Set against this argument is the historic existing hierarchy often defended by planning policies in many countries that seek to reduce car use. Nevertheless, taking from the spatial interaction perspective a key measure of the attractiveness of a particular shopping centre is now the availability and location of free car parking. This is arguably more important than the distance deterrence for a car borne shopping trip. However, there is still a requirement for major shopping centres to be of a large enough size to provide agglomeration economies in the form of economies of scope. In addition, the growing interdependence of shopping and leisure activity supports the role of agglomeration economies and clustering (Howard, 2007).

To summarise the intra-urban retail hierarchy is not set in stone despite its defence by planning and it is changing. Car usage has been ‘the driver’ of change giving consumers more freedom of choice in what can be referred to as a convenience model of shopping that emphasises a combination of centre size and parking availability as important preferences. Online sales goes further and challenges the benefits of large centres but click and collect has emphasised the importance of car parking. While a city centre is the traditional peak (central place) of the retail hierarchy the convenience enabled by cars can mean that decentralised locations with car parking can be established with an equivalent wide range of shops. In this new convenience model of shopping distance is subordinate to retail centre attractiveness and catchment areas are so blurred as to be meaningless. From this starting point the paper now charts how retailing has been transformed over the last fifty years in the UK.

The Evolving UK Retail Landscape

The high/main street was the principal form of shopping centre from the nineteenth century, whether it was in the city/town centre or in the suburbs. From the 1970s on, in the UK, the car began to transform shopping patterns and retail development with significant consequences for existing shopping centres. In the US this process had begun much earlier with the first suburban covered shopping mall opening in 1956 (Eppli and Benjamin, 1994). The decentralisation process in the UK was supported by the removal of the legal requirement for retail prices to be the same everywhere in 1963 so that retailers were able to exploit economies of scale (Dawson, 2004). It was first seen in supermarkets leaving town centres, and was subsequently followed by new out of town retail forms, first retail warehouses, and eventually regional centres (Schiller, 1986; Fernie, 1995, 1998). In fact individual retail warehouse development began in the first half of the 1980s but by the end of the decade they were being grouped together to form retail parks (known as power centres in the USA). Retail warehouse development has continued to burgeon since, comprising over 4m square feet per annum on average in the thirteen years up to 2006 before the property market downturn brought a rapid development contraction (CBRE, 2014a).

The early developments focused on the sale of bulky non-food goods such as DIY, furniture, carpets and electrical appliances. Out of town locations for these types of goods had the advantage of more space and lower rents than the traditional high street, as well as better car parking facilities. At first this was beneficial to central locations that had suffered from serious historic supply constraints to expansion because of the existing urban infrastructure. However, over time retail warehouses have evolved in terms of their physical design, and the scope of the goods sold in

them has widened. The bulky goods stores that originally predominated in retail parks began to be replaced by 'high street' retailers in the late 1990s (Guy, 2000). Nevertheless by the beginning of the millennium only a small number of retail parks were dominated by clothing and fashion items. Thomas et al (2006) look in detail at the impact of a retail park in Swansea on shopping patterns in the urban area based on local consumer surveys. They conclude that their case study is an example of how the changed characteristics of retail parks have modified their function so they are best described as suburban high streets. They also argue that retail parks represent seriously damaging threats to town centres because they have attracted national high street retailers with an overlap in the goods on sale. In fact 'fashion parks' have become an established phenomenon (CBRE, 2014a).

Retail parks were not the only growing threat to town and city centre retailing. As Figure 1 demonstrates the development of out of town shopping centres gathered pace in the latter half of the 1980s. But the figure also demonstrates that the retail offering of city/town centres had also been evolving for decades in response to customer demands. From the late 1960s to the mid-1970s city/town centres had been transformed by the building of new in-town centre shopping malls. These in-town malls were subsequently refurbished and upgraded over time, with the greater flexibility to consumers offered by this retail format, contributing to the decline of department stores, the traditional anchors of high street locations (Jones and Orr, 1999). Nevertheless by the millennium Figure 1 shows that the building of out of town shopping centres was in the ascendancy, especially as much of the in-town developments were refurbishments and redevelopment. Small town centres were also increasingly suffering from car parking constraints (Portas, 2011).

Beneath the surfaces of these changes there was an internal restructuring of retailing. There has been a long term growth of multiple retailers, many of whom are now trans-national companies (Durand and Wrigley, 2009). Many locally based retailers have succumbed to the rise and influence of 'brand power', reinforced by national advertising, that has become a compelling attraction to consumers with the loyalty that is generated. The specification of new retail units has been driven by these brands requiring larger shops, with many small shops at the periphery of major shopping centres now obsolete and converted or being converted to alternative uses (Crosby et al, 2005). The demand for larger units by the dominant brands is also a major contributor to the attractiveness of retail parks for these retailers.

Prima facie these national trends raise questions about the intra-urban retail hierarchy. Empirical studies to date have focused on the location of floorspace alone. A comprehensive study of

change in Cardiff was undertaken by Guy (2010). He found that in the twenty years to 2009 that nearly all the growth of retail space had been out of town although he argues the city is atypical. However, this picture, of new development focused in out of town locations, is reiterated through a series of town case studies in England published by GVA Grimley (2010). The study finds that 'out of town' space overtakes the 'in town' space around the millennium in the majority of its case studies. An analysis of the cumulative impact of out of town retail development in Scottish cities also comes to similar conclusions. GVA Grimley (2009) reveals that retail warehouse floorspace is larger in 2008 than city centre space in Edinburgh, but overall in the four major cities of Scotland the ratio of floorspace is just 55/45 in favour of the city centre. The direction of travel is clear from these studies, and Figures 1, although new development will have slowed following the recession of 2008-9. However, these findings do not provide for a test of the changing intra-urban hierarchy as they do not quantify the space held by different types of retailers/goods sold within individual centres.

This paper addresses these failings by quantifying the spatial distribution of retail space broken down by type of goods in shopping centres within Edinburgh. It undertakes this task by an analysis of the scale and nature of direct competition to the city centre of Edinburgh from purpose built out of town retail space. The next section reviews Edinburgh as a retail centre and the evolution of surrounding subcentres. This section also provides the basis for the selection of retail centres for further analysis.

The Changing Retail Offering in Edinburgh

Edinburgh is the capital city of Scotland with a population of 492,680 in 2011, and a regional retail centre. As a retail centre it has been ranked between 12th and 15th in the UK on the basis of turnover (Ryden, 2017). It is also a major financial services centre and international tourist destination with much of its central core designated as a UNESCO world heritage site. Given the conservation policies in place it means that there are unusually severe constraints on the expansion of retail development in the city centre. The prime retail centre for central Edinburgh spans over three main streets Princes Street, George Street and Multrees Walk. It also encompasses two shopping malls, The St James Centre, which is located next to Multrees Walk, and Waverly Mall that links Princes Street to the main train station. The St James Centre has been partially closed for refurbishment since May 2016. A survey by the City Council estimated a total of 3.5 million square feet of retail floorspace in the city centre but it encompasses a wider area than the locations noted above (Edinburgh City Council, 2015). The estimate in this paper of the prime shopping

floorspace puts the figure at much lower, just over 1.9 million square feet (see Table 2) as it ignores linking streets that contain mostly cafes and restaurants and feeder streets where often food and convenience stores are located (this study ignores convenience stores focusing on large centres). The figure is a more realistic estimate of the prime retail space that attracts customers to the locality.

Princes Street is effectively Edinburgh's high street although it is probably unique in having shops on one side with a park on the other side. It is the location for main stream retail brands and major flagship national retailers. It was initially built in the first decade of the nineteenth century and represents the southern boundary of a planned residential development built at the end of the eighteenth century, and known as the New Town. George Street was originally a residential street of the New Town. It is the broadest street of the New Town. Many of its buildings were converted or redeveloped as offices especially for banks and insurance companies. Its role as an office location went into decline from the 1980s as new computer technology required different types of buildings. Many of the buildings were gradually converted into shops, restaurants and bars, although there are still offices located on it. George Street has a distinctive retail character as home to some of the more upmarket fashion brands.

Multrees Walk is a development opened in 2002 and located to the east of Princes Street and George Street. It is a pedestrian-only street consisting of ground retail units with offices above. The street has a department store that is occupied by a top rated fashion retailer. The theme of the development is high quality luxury and this is reflected in the brands that occupy the units. At one end of Multrees Walk is the St James Centre.

The St James Centre was an indoor shopping mall built in the early 1970s with an anchor department store and a food court. Its attractiveness to shoppers declined over the years and there have been many proposals to revamp it. Finally, in 2016 it closed for redevelopment: it is set to double its retail space when it eventually reopens in 2020. In the meantime the department store continues to trade. The other indoor shopping mall in the centre is Waverley Mall. The mall has had a chequered if brief history. It was opened as Waverley Market in 1984 but has been refurbished and redesigned three times to find a successful formula. In its latest incarnation it was reopened in 2016 as Waverley Mall with major brands amongst its tenants and a food court. It now incorporates the main tourist visitor centre for the city.

Edinburgh city centre is therefore not one entity but a collection of elements or segments, taking either the form of a street or mall. This pattern of distinctive components is mirrored in most city

centres (Jones et al, 2017). As a result to a degree each retail segment of the centre appeals to different clientele.

In common with many UK cities the first new out of town retail centre opened in the mid-1980s followed by a series of developments that encircle the centre. The Edinburgh and Lothians Structure Plan published in 2004 identifies the following nine major centres of strategic importance outside town centres – Wester Hailes shopping centre, Fort Kinnaird retail park, Cameron Toll shopping centre, Craigeith retail park, the Gyle shopping centre, Meadowbank retail park, Hermiston Gait retail park, Ocean Terminal shopping centre and retail parks at Straiton (Edinburgh City Council, 2004). Only Straiton is (just) beyond the Edinburgh ring road in the neighbouring local authority area of Midlothian. All but Wester Hailes shopping centre, effectively a neighbourhood retail centre, have been opened from the early 1980s on, and it these we consider in the analysis below. These are three indoor shopping malls and five major retail parks. To this list there are a small number of minor retail parks such as Edinburgh West (opened in 2016) and Corstorphine with less than ten units and total floorspace of less than 60,000 sq ft.

The largest centres and the opening dates and characteristics of these centres are detailed in Table 1. Cameron Toll, an indoor shopping mall, was the first to be opened in 1984. It is approximately 1.5 miles from the city centre and comprises almost 238,000 sq ft of retail space along with 1,050 free car parking spaces. The main anchor store is a food superstore, along with smaller stores that house national brands.

Fort Kinnaird Retail Park is located on the south east of the city at Newcraighall, 3.5 miles from the city centre. Its first phase opened in 1989 specialising in bulky goods, and it has since expanded through a series of extensions. In 2015 a 110,000 sq ft retail and leisure extension was completed. The development is the biggest out-of-town retail centre in the city and the fourth largest retail park in the UK (Trevor Wood, 2015). The total park gross area is now around 670,000 sq ft floor space and there are 2609 parking spaces. There are 66 stores with a wide range of brands represented, plus leisure and restaurant outlets and a cinema.

Craigeith Retail Park started initially in 1993 as a food superstore. It is to the north of the city adjacent to one of the main arterial routes of the city. The park comprises 395,000 sq ft of retail space and 471 parking spaces. There is a large DIY store, a major variety store and a food superstore. Smaller accompanying units have major brands as tenants.

The Gyle Shopping Centre was also opened in 1993 and is located to the west of Edinburgh just within the city bypass. The indoor mall covers 328,000 sq ft of floor space with a food superstore at one end and a large variety store at the other. There is a food court and 2,540 parking spaces. Close to the Gyle is Hermiston Gait retail park with access directly off the bypass. Hermiston Gait was built in 1996 and extends to 303,459 sq ft of floorspace with 1133 car spaces. Like Craighleith the largest store is a DIY store and there is a food superstore. These two units together account for 58% of the retail space. The other smaller units are let to national retailers.

The retail centre at Straiton incorporates the Pentland Retail Park, together with standalone large stores containing an international furniture/household goods store, a wholesale retail warehouse club, two superstores and a supermarket. The retail park opened in 1996 in the same year as the wholesale warehouse and superstore. The furniture store opened in 1999. The furniture store alone is over 190,000 sq ft and the overall comparison floorspace is 625,000 sq ft. There is also 170,000 sq ft of convenience floorspace within the area so that the overall gross retail space amounts 795,000 sq ft.

Meadowbank Retail Park was opened in 1997 and is located approximately just under a mile to the east of the city centre. The centre has a total of 144,963 sq ft of retail space, and the largest unit is a supermarket. The other units are occupied by national retail brands, together with a major leisure operator and a food outlet.

Ocean Terminal shopping centre was built to aid the regeneration of the dockland area of the city, and opened in 2001. The indoor mall has a waterfront location to the north east of Edinburgh. The major tourist attraction, the Royal Yacht Britannia is accessed through the Ocean Terminal shopping centre. The centre comprises 408,000 sq ft, and is the largest shopping mall in Edinburgh with 83 retail units and 1,500 covered parking spaces. There is a department store while the other stores are predominantly let to major brands.

These developments were initiated over a twenty year period from the early 1980s. The first four were instigated during an era when national retail planning guidance in the UK was pursuing a 'liberal' approach to out of town development. Over this time Guy (2002) reports that planning permissions for retail warehouses were usually approved, but out of town retail development became subject to more restrictive national retail planning guidance in 1993 and even more so after 1996. Since then planning permissions for new out of town shopping centres have faced a series of sequential tests to demonstrate that the vitality and viability of existing centres would not be adversely affected by the development (Guy, 2002). Only one centre in Edinburgh, Ocean

Terminal, began life after national planning guidance was tightened up. As note above it was justified on regeneration grounds and represented a substantial expansion of the retail space.

This justification of regeneration is not unusual: other UK cities have similarly made exceptions to planning designed to maintain the existing retail hierarchy status quo, especially town centres, and restrict off-centre development (Guy, 2010; Wrigley et al, 1998; Lowe, 2005). The issues around these policies also relate not just to the permission for the individual development but also to subsequent expansion. Cameron Toll, the Gyle, Fort Kinnaird and Straiton have received planning permission to expand since opening. In 2012 Cameron Toll was given permission to extend that would have enabled new retail units, restaurants and cafes as well as a cinema and additional car parking (Edinburgh City Council, 2012). This did not go ahead but Fort Kinnaird has experienced substantial expansion in a series of phases including the large extension noted above in 2015. Both these recent (proposed) extensions at Cameron Toll and Fort Kinnaird were based on expanding leisure facilities. In contrast a planning application to add a department store to Fort Kinnaird in 2013 was refused as it conflicted with the local plan and there was a cap on total space.

Straiton has seen substantial expansion creating planning controversy. The retail park as explained above is located in the neighbouring local authority area and Edinburgh City Council has on occasion objected to its continued growth. The Peel Centre at Straiton, for example, got permission to expand in 2002, 2005 and 2011. In 2005 its size was approximately 69,000 sq m when it received planning permission to increase its size by 11% to almost 78,000 sq m. In 2011 it received permission to double in size to include a department store and 'fashion terrace' but this has not been built yet (Scott, 2016)

To summarise the city centre dominates the surrounding centres in terms of floorspace as Table 1 indicates, with the next largest just over a third of its prime retail space. These floorspace statistics are underestimates as shopping centre boundaries are fuzzy and so should be taken as indicative of the retail agglomerations. This issue applies not just to the city centre but also to out of town developments where there often satellite stores. The major expansion of retailing floorspace since 1980 has been out of town but expansion in the city centre is tightly constrained particularly by conservation of the urban core. There have been two significant relatively recent expansions of the central retail offering, Mulltrees Walk in 2002 and Waverley Mall in 1984, the latter struggled to be successful. The main indoor mall in the centre, the St James Centre, also suffered a slow demise, and is now in the process of being redeveloped to double its size.

Retailing in the city centre embedded as it is within an historic environment contrasts with the purpose built out of town shopping malls and retail parks. The internationally recognised urban morphology of the centre is an attraction to leisure-tourist shoppers rather than just the functional/utilitarian shopper (Howard, 2007). Nevertheless the out of town centres have the alternative attraction of accessibility and free car parking, together with evening opening attracting leisure shopping. Retail parks have also extended the range of shops available often replacing DIY and electrical goods sectors that were their original mainstay. For example, in 2016 a major national fashion retailer replaced a DIY store in Straiton Retail Park at the same time extending its size (Scott, 2016). This fashion store will be the company's largest in Scotland and one of its largest in the UK (Scott, 2016).

Despite the planning restrictions on out of town development since 1996 out of town centres have grown and been refurbished in a piecemeal way. Indeed the restrictive policy has supported their success by limiting competition. Unlike in some countries there are no decaying out of town malls. Leisure representation has increased in these centres, and the design and format of stores have also being recast to look more like traditional shops.

The growth of out of town space has meant that some of these centres at least represent a sufficient size to potentially offer agglomeration economies in the form of economies of scope, that enable customers to minimize not only searching cost but also purchase costs. A key dimension of these economies is the scale of the range of shops and their diversity available at these out of town locations.

Comparative Analysis of Retail Space in Individual Shopping Centres

The paper now turns to examine the outcome of this gradual evolution in terms of the nature of the current retail centre hierarchy. As noted above distance and catchment areas are no longer relevant to any retail hierarchy and the attractiveness of shopping centres are the fundamental elements. The study therefore focuses on detailed characteristics of selected shopping centres in the Edinburgh area: spotlighting scale, the range of retailers and floorspace of different types of retailers and the role of leisure. The aim is to identify whether a centre hierarchy can still be discerned. This role of retail hierarchy is important because UK planning policies have placed great emphasis on maintaining one.

The analysis in this section is derived from a range of sources. The data relates to 2016 and was primarily obtained from two parallel sources, CoStar and the Valuation Rolls, the tax base for

commercial property. CoStar is a national database of commercial real estate, including information on the use and floorspace of individual properties. The comparative use of these two sources enabled the data to be validated and results were confirmed by a shop visit; it is presented in Bushby (2016). Additional information was derived from shopping centre listings. The one exception is for the St James Centre that was closed in 2016 for redevelopment. In this instance data was received from a letting agent on the occupiers prior to being decanted. Although the data is collected from a range of sources it is accurate and consistent measures of the floorspace and the use of shopping units. The data is therefore the total population of the sizes and uses of all retail units in the city centre and the selected shopping centres. This is the first time retail research has been undertaken at this detail.

The strategy is to compare a selection of out of town malls and retail parks with the city centre. All three malls are included in the analysis but to simplify the research only two retail parks are chosen. The five retail parks noted in Table 1 vary in size from 144,000 up to 800,000 sq ft (there are also smaller ones). The range of sizes alone suggest these retail parks cannot be described as a homogeneous set of retail centres. Meadowbank, Hermiston Gait and Craigleith have only a small number of stores, 9, 12 and 16 respectively whereas Fort Kinnaird has 67 including food court outlets. In terms of the original bulky items associated with retail parks only two of these centres have DIY stores, three have carpet/furniture stores and three have electrical goods stores. Hermiston Gait is the nearest to the archetypal traditional retail park with a very large DIY warehouse that accounts for more than one third of the total space. All but one these retail parks have an associated food supermarket.

In the comparative analysis below Craigleith and Fort Kinnaird are chosen for detailed study. They are two of the three largest retail parks and are chosen on the basis of size and that together they are a good representation of this form of centre. Straiton, the largest out of town centre in the Edinburgh area, is excluded because of its uniqueness, given its space is dominated by a large furniture store and a wholesale warehouse. Overall the paper now examines and compares the retail offering of the city centre and the major out of town retail developments within the city's built up area defined by inside the periphery of the Edinburgh road bypass.

The starting point for the analysis is the distinction between comparison and convenience shops. Given the role of leisure today as an important element of shopping the study also considers explicitly the significance of cafes and restaurants to retail centres. Other leisure activities such as

cinemas are excluded from the analysis as not so explicitly retailing (but many centres had links). A precise definition of comparison goods is not straight forward; it is considered here as fashion, jewellery, clothing, footwear, electrical and phones, furniture, gift shops, health and beauty, books and stationery, and toys as well as department stores. A case could also be made to include music although music represents only 1.5% of retail space in the city centre, and none at all in the selected 'out of town centres'.

The analysis below examines two dimensions of the pattern between centres – the absolute size of different types of floorspace and the relative contribution to each centre based on data given in Tables 2 to 5. The vacancy levels of individual centres and city centre components are generally low, with two exceptions vacant floorspace rates are below 5%. The highest are that of Waverley Mall with 15% and Ocean Terminal's 11% so there is no distinct pattern between in and out of town centres. Factoring out vacant units comparison floorspace (including books) accounts for 82.3% of total space in the city centre. This not surprising dominance of comparison goods in the city centre varies across the individual characteristics of its components and is even higher in Princes Street, Multrees Walk and the St James Centre. While it is much lower in George Street and Waverley Mall as these localities do not have a department store but they compensate with a high percentage of floorspace accounted for by cafes and restaurants, 32.8% and 28.3% respectively compared with 9.3% overall for the central area. This is an underestimate as streets linking the main retail streets as noted above contain cafes and restaurants as do department stores. With this caveat total floorspace of comparison and cafes/restaurants combined is more than 90% in each central component except the Waverley Mall where it is 84.5%. Overall the pattern of retail space in the city centre conforms to the dominance of comparison goods as befits the peak of the intra-urban hierarchy.

In comparison the relative contribution of comparison goods in the out of town centres is more variable, ranging from 41% in Cameron Toll (the smallest) through to 88.3% in Fort Kinnaird (the largest). The proportion of comparison space in Fort Kinnaird is higher than for Princes Street in the city centre, while in the Gyle and Ocean Terminal centres is equivalent to elements of the city centre. All of these centres have department stores and with the exception of Cameron Toll fashion, jewellery, clothing and footwear has a significant presence. Perhaps surprisingly given the history of out of town retailing noted above there are only three furniture stores in the selected centres, with the highest space found in Fort Kinnaird but still only 6.9% (compared with zero in the city centre). Cafes and restaurants are prevalent in the out of town centres, accounting for 7% and 8% respectively in Fort Kinnaird and Ocean Terminal.

Whereas floorspace allocated to food, convenience and pound shops in the city centre is very modest it is generally much higher in the out of town centres. In fact in Cameron Toll the majority of the space is accounted for by food (although in practice superstores also sell clothes etc). Two other centres, the Gyle and Craighleith also have significant food floorspace. However, Fort Kinnaird, the largest such centre has none. The lack of food retailing in the prime city centre pitches is also balanced by its location on adjacent streets so the apparent distinction in this respect between the centre and these outer centres can be viewed partly as a boundary definition issue.

There are also only two DIY/home improvement stores in the selected out of town centres, representing a very small fraction of their total space. There are no such specialist stores in the city centre although there may be some floorspace within department stores. Personal services, financial services and travel agents together represent a small amount of floorspace in the centre and outer centres.

Looking beyond the relative patterns of floorspace Fort Kinnaird as noted above, the largest out of town centre and almost entirely comprising comparison shops, is 34% of the size of the city centre as a whole. However, it is larger than all the shopping segments in the centre except Princes Street (69%). Three of the other outer centres of a comparable size with some elements of the city centre. Just focusing on fashion, jewellery, clothing and footwear the differences in the absolute levels of floorspace become less. Fort Kinnaird has 45% of city centre space and is almost on a par in terms of size with Princes Street.

The picture that emerges is that the centre retains its position in terms of total space in the intra-urban retail hierarchy but also in terms of the amount of retail space allocated to comparison goods and also to fashion. However, the city centre is arguably not a homogeneous entity with individual components of distinct character and specialism. The result is that a shopping trip is unlikely to either encompass the centre as a whole or indeed be attracted by the comprehensive range of shops available. Seen from this perspective the hegemony of the centre in the hierarchy is diluted, especially with regard to fashion shops.

The Christaller hierarchical concept of tiers of centres linked to ranges of goods sold is not clearly observed, with some of the smaller out of town centres predominantly encompassing comparison shops. There are two caveats to this conclusion. Food retail space tends to be only an important component in the outer centres although there is considerable variation further reinforcing the lack of clear tiers of centres. The city centre does generally have a higher proportion of space accounted for by cafes and restaurants suggesting that leisure shopping is more important at the

top of the retail hierarchy. Indeed it can be argued that the most significant discriminator between the city centre and the out of town centres in terms of retail offering is the range of cafes and restaurants.

Concluding Comments

The latter half of the twentieth century saw a revolution in the nature of shopping driven in particular by mass car usage. It heralded the arrival of out of town shopping centres that tested and threatened the existing shopping centres and queried theoretical models of retail hierarchy. The flexibility of the car meant shopping trips potentially became more complex, often as part of another activity. There were also wider changes to retailing with the ubiquitous rise of fashion brands and the increased size of units required by the industry. The rapid expansion of online sales has been a feature of the twenty-first century but to date it has reinforced the trend toward out of town shopping centres (Jones and Livingstone, 2018).

This paper has examined the process by which this occurred in one UK city and assessed the outcome. It substantially follows but extends Guy's path breaking approach to analysing retail change, by not just considering floorspace but also its use by retailer type. This is a novel contribution of this paper. This pattern of types of shops in a centre is taken as a measure of place in the retail hierarchy. Retail change is embedded in a restrictive planning system that has contributed to a lower than average retail sales area per capita compared with other developed countries, and in particular half that in the USA and less than that of Germany (CBRE, 2019). The national planning framework is shown to influence the pattern of retail decentralisation.

Each country will have its own approach to this task. It is interesting to note for example that while there is more retail space per capita in Germany (but slightly higher average incomes) it was able to successfully stem the growth of out of town centres, by introducing restrictions much earlier (Heineberg, 2000). It also seems that in doing so Germany reached a better accommodation with the car than the UK by providing more city centre parking spaces. In contrast the United States took a more liberal approach to suburban shopping malls and now has a surplus (Kaplan, 2017) This reinforces the role and significance of planning in combatting decentralisation trends.

Edinburgh is a useful case study because there is a stark disparity between a city shopping experience set within historic infrastructure and modern utilitarian out of town centres. Yet both

are offering the comparison goods and many of the same brands. The out of town centres offer convenience in the form of adjacent free car parking, together with evening opening.

The history of out of town development Edinburgh is typical of what subsequently occurred across the UK. New out of town development was opportunity driven by the availability of sites, often vacant brownfield sites from deindustrialisation. They did not involve the redevelopment of existing centres. Although planning policy became more restrictive in the early 1990s, to protect existing high street shopping centres in city/town centres and the suburbs, out of town retailing continued, justified for example on urban regeneration grounds or through 'stealth' via expansion/re-morphing in situ. The process was piecemeal with no overall plan and the physical nature of these centres themselves have been transformed as have the products sold since their inception. The result is a range of different types and sizes of out of town 'centre' with no coherent spatial pattern, that is turn a reflection of the convenience of the car enabling flexibility of location.

In this process the bulky goods and food superstores that were the original backbone of out of town retailing are no longer a prerequisite anchor for an out of town centre. Fashion is now the core retail offering of the larger centres in direct competition with the city centre, and they are large enough to offer a range of such shops generating economies of scope. Furthermore with the city centre not a single entity the largest out of town centre is almost comparable in terms of size of fashion floorspace with individual central segments. The same retail brands are also found in the different localities. The major distinction between in and out of town is now the scale of provision of restaurants and cafes. This phenomenon in turn is probably related to the draw of a city centre trip in terms of the 'buzz' and 'day out' experience.

The paper queries the traditional concept of the intra-urban retail hierarchy. However, it goes further in finding that within modern shopping centres there is considerable variation in store types that cannot be completely explained by centre size. Overall the research supports the convenience model promulgated earlier. However, the intra-urban retail hierarchy may not be quite dead with the city centre retaining its hegemony as a central place in terms of leisure shopping.

Takeaway for Planning Practice

The successful establishment of out of town shopping centres in Edinburgh has occurred despite national planning policies wedded to supporting and revitalising traditional retail centres. These

policies seek to deter out of town shopping centres on the basis that existing centres should be safeguarded, as they offer distinctive qualities including access to public transport. In addition Edinburgh's specific policies emphasise enhancing the vitality of the city centre and reversing the recent decline in its market share.

While the research is based on Edinburgh it has lessons for many countries where there are equivalent planning strategies aimed at maintaining the status quo. The evidence from the paper is that the energy in promoting these policies is misplaced. Despite policy over more than two decades aimed at restricting them the new out of town retail centres have become extremely popular, and can offer an equivalent range of stores as even the individual segments of the city centre. At the same time traditional centres have been in decline.

This raises important generic questions. First, there are serious question marks over the efficacy of policies that aim to maintain a historic retail hierarchy when cities are dynamic entities. This is particularly true as there is continuing and long-term urban decentralisation across the world. Second, in western economies where there are high levels of car ownership, the questions posed by Guy (2007, 30) are particularly relevant: what and who is retail planning for? Retail planning has to embrace the motor age (and online sales) and changing shopping patterns, and hence shape market forces to ensure a sustainable urban future.

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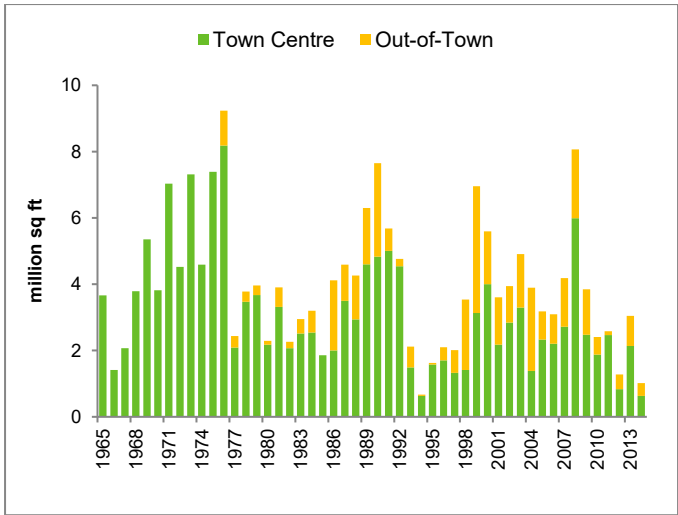


Figure 1 Annual Completions of Town Centre and Out-of-Town Shopping Centres

Source: CBRE (2014b)

Table 1 Overview of the Retail Offering in Edinburgh

Retail Centre	Floorspace (sq ft)	Initial Year of Opening	Description
City Centre	1,921,573	-	City Centre
Cameron Toll	237,724	1984	Indoor Mall
Fort Kinnaird*	654,452	1989	Retail Park
Craigleith	394,565	1993	Retail Park
The Gyle	327,930	1993	Indoor Mall
Hermiston Gait	303,459	1996	Retail Park
Straiton	795,226	1996	Retail Park
Meadowbank	144,963	1997	Retail Park
Ocean Terminal*	336,867	2001	Indoor Mall

*Excluding cinemas

Table 2 Floorspace by Type of Retail Units in Edinburgh City Centre

Retailer Type	Princes Street	George Street	Multrees Walk	St James Centre	Waverley Mall	Total
Department Stores	379,527 (40.3)		68,980 (53.1)	231,871 (60.3)		680,378 (36.2)
Electrical and Phones	66,546 (7.1)			5,677 (1.5)	329 (0.5)	72,552 (3.9)
Fashion, Jewellery, Clothing and Footwear	285,844 (30.3)	171,367 (47.9)	45,513 (35.0)	70,205 (18.3)	23,574 (35.0)	596,503 (31.7)
Furniture						
Gift Shops			1,183 (0.9)	3,237 (0.8)	10,503 (15.6)	14,923 (0.8)
Health and Beauty	61,902 (6.6)	27,989 (7.8)	3,491 (2.7)	23,765 (6.2)	1,281 (1.9)	118,428 (6.3)
Toys, Games, Hobbies				4,019 (1.0)	2,161 (3.2)	6,180 (0.3)
Books and Stationery	42,689 (4.5)	10,420 (2.9)	1,075 (0.8)	3748 (1.0)		57,932 (3.1)
Music	24,460 (2.6)			3,312 (0.9)		27,772 (1.5)
Cafes and Restaurants	22,830 (2.4)	117,249 (32.8)	2,986 (2.3)	13,756 (3.6)	19,085 (28.3)	175,906 (9.3)
DIY/Home Improvements						
Food	6,257 (0.7)				5,644 (8.4)	11,901 (0.6)
Pound Shops				14,413 (3.7)		14,413 (0.8)
Convenience/ Confectionery				1,580 (0.4)		1,580
Financial Services	36,533 (3.8)	28,561 (8.0)		5,979 (1.6)	3,843 (5.7)	74,916 (4.0)
Travel Agents	1,015 (0.1)	810 (0.2)	1,207 (0.9)	1,241 (0.3)		4,273 (0.2)
Others	14,409 (1.5)	1,568 (0.4)	5,430 (4.2)	1,584 (0.4)	1,011 (1.5)	24,002 (1.3)
Vacant	12,443	12,720	1,060	882	12,809	39,914
Total	954,455	370,684	130,925	385,269	80,240*	1,921,573

*excluding tourist office

Numbers in parentheses are percentages of the respective column total less vacant space

Table 3 Floorspace by Type of Retail Units in Selected Out of Town Centres

Retailer Type	Cameron Toll	Gyle	Ocean Terminal	Craigleith	Fort Kinnaird
Department Stores	20,500 (8.7)	103,226 (32.9)	112,728 (37.7)	70,708 (17.9)	86,750 (13.8)
Electrical and Phones	7,841 (3.3)	6,825 (2.2)	7,280 (2.4)	25,110 (6.4)	58,638 (9.3)
Fashion, Jewellery, Clothing and Footwear	23,556 (10.0)	58,165 (18.6)	62,227 (20.8)	79,072 (20.0)	267,746 (42.5)
Furniture			2,080 (0.7)		43,761 (6.9)
Gift Shops	2,540 (1.1)	1,649 (0.5)	13,154 (4.4)		
Health and Beauty	18,653 (7.9)	30,078 (9.6)	39,219 (13.1)	13,233 (3.4)	30,067 (4.8)
Toys, Games, Hobbies	6,609 (2.8)	3,014 (1.0)	5,138 (3.7)		37,052 (5.9)
Books and Stationery	17,327 (7.4)	17,998 (5.7)	12,234 (4.1)	8,524 (2.2)	31,965 (5.1)
Music					
Cafes and Restaurants	2,828 (1.2)	7,151 (2.3)	23,848 (8.0)		43,872 (7.0)
DIY/Home Improvements		108 (0.03)		48,315 (12.2)	
Food	118,479 (50.3)	76,962 (24.6)	11,538 (3.9)	126,074 (32.0)	
Pound Shops	6,052 (2.6)			23,529 (6.0)	10,522 (1.7)
Convenience			173 (0.06)		
Financial Services	5,280 (2.2)	3,593 (1.1)			
Travel Agents	5,137 (2.2)	4,121 (1.3)	1,037 (0.3)		6,465 (1.0)
Others	648 (0.3)	593 (0.2)	8,297 (1.5)		13,881 (2.2)
Vacant	2,274	14,447	37,914		23,727
Total	237,724	327,930	336,867	394,565	654,452

Numbers in parentheses are percentages of the respective column total less vacant space

Table 4 Floorspace by Type of Retail Units in Selected Out of Town Centres

Retailer Type	Cameron Toll	Gyle	Ocean Terminal	Craigleith	Fort Kinnaird
Department Stores	20,500	103,226	112,728	70,708	86,750
Electrical and Phones	7,841	6,825	7,280	25,110	58,638
Fashion, Jewellery, Clothing and Footwear	23,556	58,165	62,227	79,072	267,746
Furniture			2,080		43,761
Gift Shops	2,540	1,649	13,154		
Health and Beauty	18,653	30,078	39,219	13,233	30,067
Toys, Games, Hobbies	6,609	3,014	5,138		37,052
Books and Stationery	17,327	17,998	12,234	8,524	31,965
Music					
Cafes and Restaurants	2,828	7,151	23,848		43,872
DIY/Home Improvements		108		48,315	
Food	118,479	76,962	11,538	126,074	
Pound Shops	6,052			23,529	10,522
Convenience			173		
Financial Services	5,280	3,593			
Travel Agents	5,137	4,121	1,037		6,465
Others	648	593	8,297		13,881
Vacant	2,274	14,447	37,914		23,727
Total	237,724	327,930	336,867	394,565	654,452

Table 5 Percentage of Floorspace by Type of Retail Units in Selected Out of Town Centres

Retailer Type	Cameron Toll	Gyle	Ocean Terminal	Craigleith	Fort Kinnaird
Department Stores	8.7	32.9	37.7	17.9	13.8
Electrical and Phones	3.3	2.2	2.4	6.4	9.3
Fashion, Clothing and Footwear	10.0	18.6	20.8	20.0	42.5
Furniture			0.7		6.9
Gift Shops	1.1	0.5	4.4		
Health and Beauty	7.9	9.6	13.1	3.4	4.8
Toys, Games, Hobbies	2.8	1.0	3.7		5.9
Books and Stationery	7.4	5.7	4.1	2.2	5.1
Music					
Cafes and Restaurants	1.2	2.3	8.0		7.0
DIY/Home Improvements		.03		12.2	
Food	50.3	24.6	3.9	32.0	
Pound Shops	2.6			6.0	1.7
Convenience			0.06		
Financial Services	2.2	1.1			
Travel Agents	2.2	1.3	0.3		1.0
Others	0.3	0.2	1.5		2.2
Total	235,450	313,483	298,953	394,565	630,725