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UNIVERSITY OF SOUTHAMPTON

School of Geography and Environment

UK high streets during global economic crisis

by

Leszek Dolega

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ABSTRACT

The 2008-09 global economic crisis has impacted UK high streets and town centres in complex and little understood ways. In addition, the vitality of UK high streets has been differentially impacted by three other forces and has become an increasing focus of government and public anxiety: These forces include: (i) the progressive rise of online shopping, (ii) the complex consequences of the implementation of a 'town centre first' policy in retail development and (iii) the rise of often underestimated influence of convenience culture.

This research investigates the response of UK high streets to these drivers of change, and seeks to make three main contributions. First, to provide new descriptive evidence on the differential performance of UK retail centres during and since the economic crisis. Although some of these findings parallel those suggested by specialist commercial research companies they also significantly extend available knowledge. In particular, they depict the discrepancy in the response of independent and multiple retailers to the economic and competitive shocks. Second, to identify the key drivers of town centre performance, by employing the multivariate analysis of that issue at both cross-regional and intra-urban levels. The cross-regional analysis derives seven factors associated with retail centre enhanced resilience or fragility to the economic crisis; the intra-urban analysis validates and reinforces the results of the cross-regional analysis and provides further insights into the dynamics of UK town centres performance in the post-crisis decade. Third, to conceptualise the nature of UK retail centres' complex adjustment to the shock of economic crisis and other forces of change, by exploring alternative interpretations of the resilience of economic systems. In particular, we use the concept of adaptive resilience to understand the dynamic process through which UK high streets have gradually and constantly evolved. We suggest a conceptual framework which links the notions of adaptive capacity and adaptive resilience and indicates how a position of a centre in adaptive cycle and the role of various actors are important to performance of that centre.

At a time when the economic health of high streets has generated a large amount of research, the findings of this study have the potential to contribute to the policy agenda and set a benchmark against which future research can be positioned and interpreted.

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DECLARATION OF AUTHORSHIP

I, Leszek Dolega declare that the thesis entitled

UK high streets during global economic crisis

and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- this work was done wholly or mainly while in candidature for a research degree at this University;
- where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
- where I have consulted the published work of others, this is always clearly attributed;
- where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
- I have acknowledged all main sources of help;
- where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
- none of this work has been published before submission, or [delete as appropriate] parts of this work have been published as: [please list references]

Signed:

Date:.....

List of Abbreviations

Abbreviation	Meaning
ACS	Association of Convenience Stores
B2C	Business to Customer
BCSC	British Council of Shopping Centres
BID	Business Improvement District
b.p.	basis points
BRC	British Retail Consortium
CCI	Consumer Confidence Index
CTN	confectionery, tobacconists, and newsagents
EDA	exploratory data analysis
EFS	Expenditure & Food Survey
GIS	Geographical Information Systems
GDP	Gross Domestic Product
HPI	House Price Index
IMD	Index of Multiple Deprivation
LDC	Local Data Company
NGO	Non-Governmental Organization
OFT	Office of Fair Trading
OLS	Ordinary least squares
ONS	Office of National Statistics
PPG	Planning Policy Guidance
PPS	Planning Policy Statetement
Sq Ft	Square Foot
UK	United Kingdom

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Chapter 1: Introduction

1.1 Economic health of UK town centres and high streets

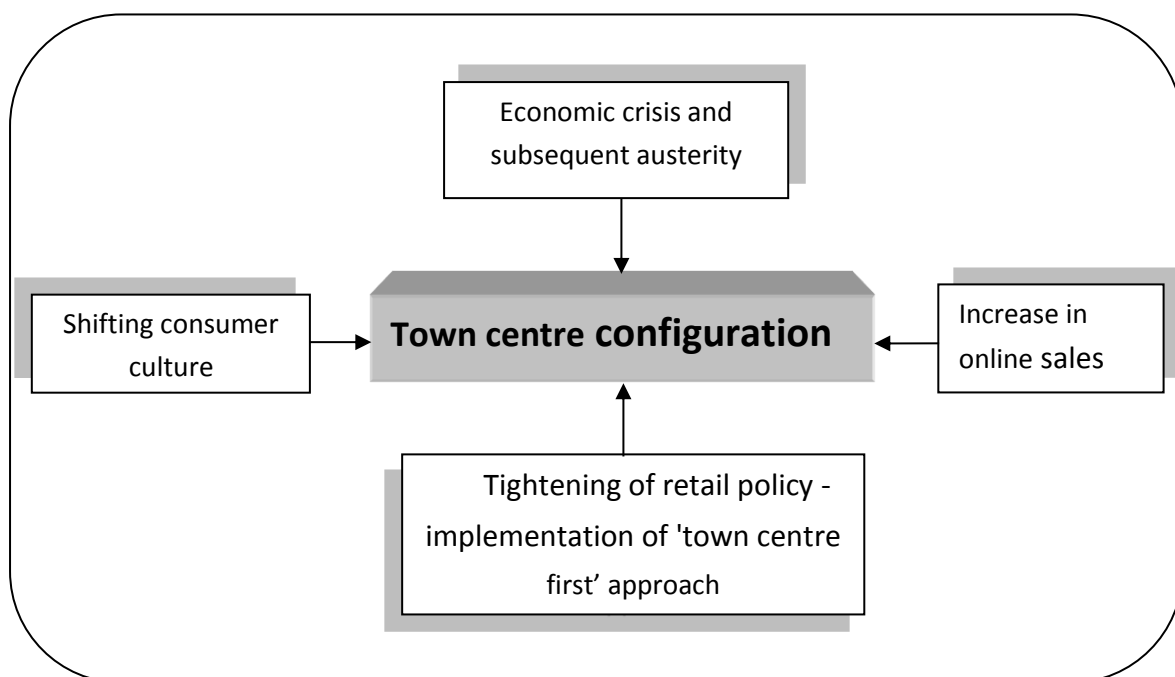
The UK retail sector has been highly successful over the past 25 years. Between 1986 and 2006, the market increased almost twofold in real terms, with the total value of retail sales in 2006 reaching the equivalent of 21% of GDP (BCSC, 2007). Given that an average person in the UK makes 200 shopping trips every year and approximately a third of an average household's annual spending is on retail goods, excluding food, some commentators have argued that shopping is a national pastime and many people treat shopping as a leisure activity in its own right (BCSC, 2007). Until recently, the success of UK retailing was primarily driven by high consumer confidence and the growth in real disposable income (Anagboso 2009; BRC, 2009). However, although many UK town centres and high streets have benefited from the dynamics, some UK retail centres have been struggling for years. Often viewed as lacking the investment or the vision to offer a compelling choice to local catchments, a growing number of predominantly secondary and tertiary retail centres have been failing to compete with better experiences offered by neighbouring towns or out-of-town developments (BRC, 2009). Indeed, the vitality and viability of British town centres and high streets over recent years – and particularly since the economic crisis of 2007-09 - has become an increasing focus of government and public anxiety.

As portrayed in Figure 1.1 four forces are widely recognised as causes of that concern. First, the progressive rise of online shopping, reaching in 2012 more than 12% of total retail sales has increasingly exerted direct and indirect pressure on traditional British high street (Burt and Sparks, 2003; Weltevreden 2007). Second, the long-term and cumulative impacts of competition from large out-of-town developments. However, because of the switch of policy to tightening retail regulation beginning in the mid-1990s (the PPG6, Sequential Test) and the subsequent implementation of 'town centre first' policies (Wood et al., 2006; Guy, 2007; Wrigley, 2010a) those impacts have become increasingly complex and difficult to read. Third,

Chapter 1

the rise of progressive, and often underestimated influence of '*convenience culture*' which has placed increasing doubts on the long term prospects of large format out-of-town retail (Wrigley, 2010) as consumers have recently rethought the economic and social cost associated with long rather than short distances to shops and the time cost associated with large and often inhospitable stores. Fourth, and most recent, the sharp drop in consumer confidence, observed in 2007-2008 following the global financial crisis and the subsequent plunge into the recession.

Figure 1.1: Forces (re)shaping UK high streets configurations



The speed and severity of the recession caught the vast majority of retailers by surprise with only a few retailers and manufacturers having a strategy in place to deal with the impacts of the economic crisis (IGD, 2009). In consequence, high streets and town centres across the UK have suffered from sharp increases in retail/service unit closures not only involving small independent shops, often perceived as most vulnerable, but also large corporate chains. In particular, the closure of more than 800 iconic Woolworth's stores coupled with other national chains such as Adams, MFI, Borders, Habitat etc. sparked increasing anxiety about the future of many retail centres. As a result the portrayal of UK town centres dramatically changed, from

buoyancy in the mid-2000s to cataclysmic decay towards the end of the decade. Furthermore, the new reality of 'Austerity Britain' characterised by painful public spending cuts and declining real personal income, has adversely affected consumer spending and increased further the fears about future of UK town centres and high streets (Wrigley and Dolega, 2011).

However, to what extent does the available evidence support those views and what is known about the differential performance of British high streets and town centres during the global economic crisis and emerging austerity? Surprisingly, research, which charts the complex and differential performance of town centres and high streets impacted by the shock of economic crisis and other slower drivers of change is extremely sparse and attempts to conceptualise the transformational change have not yet generated the large scale and detailed empirically-based studies, which may seem a logical consequence.

1.2 Aims and objectives

This study attempts to answer the above questions by performing an investigation of the complex adjustment of UK high streets and town centres to the 2007-09 global economic crisis and the other drivers of change which are (re)shaping their configurations. The key aims of this study are twofold:

1. First, to provide new empirical evidence of the differential response of UK town centres and high streets to the shock of economic crisis and of their adjustment to the emerging period of austerity.
2. Second, to conceptualise the nature of that complex adjustment to the shock of economic crisis and other forces of change by exploring alternative interpretations of the resilience of economic systems.

The aim of providing new empirical evidence has been satisfied in two ways:

(i) by utilising descriptive statistical analysis to depict the differential performance of UK town centres and high streets during the economic crisis and the subsequent period of emerging austerity. This analysis, which involved evaluating retail-composition surveys completed before and after the collapse of consumer confidence, attempts to capture the changes in retail/service configurations of UK town centres

and high streets' configuration during and since the economic crisis. Importantly, such simple analysis can be used to assess the components of the differential performance of particular retail/service types and can help to distinguish between the impacts associated with the shock of economic crisis those are attributed to the other forces of change.

(ii) by implementing top-down theoretically-driven statistical modelling to obtain the determinants of vacancy rates change – one of the key indicators of town centre vitality. In particular, we employ a cross-regional analysis – identifying the drivers of differential performance of UK town centres, measured by the vacancy rate change between the pre-crisis and within-crisis periods – to derive a set of factors associated with UK high streets' resilience/fragility. This is followed by the intra-urban empirical analysis, which can also be viewed as a validation process to test the extent to which the cross-regional determinants of enhanced resilience hold at the single urban area level. In this intra-urban analysis we make use of a 'third wave' of data to assess the economic performance of UK town centres between both the within-crisis and post-recession shallow recovery periods as well as the change between the pre-crisis and shallow recovery periods.

The aim of developing a theorisation of the reconfiguration of UK retail centres was tackled in three ways:

(a) by exploring the concept of resilience of economic systems that has recently become popular amongst economic geographers and extend it to the retail sector. Initially, we review three different concepts of resilience, then position our empirical findings against the type of resilience that stresses the anticipatory or reactive capacity of a system in order to minimise the impacts of a destabilising shock and which focuses on resilience as a dynamic and evolutionary process.

(b) by evaluating the consequences of that complex adjustment in terms of changes to the pre-existing evolutionary trajectories of UK town centres and high streets – assessing their resistance to the shock of economic crisis and examining the degree of their recovery in the shallow recovery period as the economy came out of the recession. Further, we investigate the nature of reconfiguration and reorientation

observed by UK retail centres, and to a lesser extent, we evaluate the extent to which town centres and high streets have resumed their pre-shock development paths.

(c) by considering what the implications might be for the design of policy proposals and instruments aimed at revitalising UK town centres and high streets. That task of identifying the problems concerning the post-crisis high street and formulation of policy instruments which might help ameliorate these issues also lies at the heart of the UK government's Revitalising the High Street initiative led by Mary Portas and launched by the Department for Business, Innovation and Skills in May 2011.

1.3 The value added by this study

There is a consensus amongst researchers that the adjustment of UK town centres and high streets to the shock wave of global economic crisis has been complex and is not fully understood. Some commercial research consultancies (e.g. Local Data Company), have regularly reported the declining fortunes of certain types of high streets and retail/service types during the plunge into recession in 2008, the shallow recovery of 2009-10 and the subsequent period referred to as austerity. In particular, they have highlighted increasing vacancy rates and large insolvency rates amongst comparison retailers and financial services providers. Those results however, are purely descriptive and have been often criticised for sparseness of their data and unsystematic methods (Wrigley and Dolega, 2011, Colliers CRE, 2009). Indeed, the higher order insights such as academic analyses and statistically supported scientific evidence are almost totally missing.

The value added by this study is threefold:

1. *It attempts to fill the gap in empirical knowledge and contribute to the evidence base on the differential performance of retail centres during the economic crisis.* In particular, by means of theory driven and top-down multivariate modelling, this study attempts to deliver a number of statistically significant indicators that can be associated with enhanced resilience or fragility of UK town centres and high streets to the shock of economic crisis. Providing such empirical evidence which can contribute to UK policy debate, in particular to the Portas' Revitalisation of High Street initiative

supported by the Government, is itself a novel undertaking with potentially very significant implications.

2. It offers new and valuable insights on the effects drivers of change have in re-shaping the configurations and evolutionary trajectories of UK retail centres; in particular, by assessing comprehensively the recent phenomenon of progressive rise and often underestimated influence of convenience culture and examining the extent to which persistently rising online sales impact various retail/service types especially during unfavourable economic conditions.

3. It seeks to conceptualise the nature of change in retail/service configurations of UK high streets and town centres by the concept of resilience of economic systems. Although the broad concept of resilience has been adopted from studies investigating the differential performance of regions, this research endeavours to identify the components and phases of the mechanisms controlling the adaptive capacity of UK town centres and high streets. Furthermore, by investigating the dynamic and constantly evolving nature of retail centres it draws our attention to the possibility of new interdependencies being formed, and by doing so it seeks to set a benchmark against which future studies investigating town centres and high streets resilience can be positioned and interpreted.

The thesis proceeds in the following way. Chapter 2 provides essential background on the impacts of the global economic crisis on UK high streets and outlines different concepts of resilience applied to economic systems. Chapter 3 considers the way in which the remaining forces of change have been impacting the economic health of UK town centres and high streets; in particular, the rise of online sales, the impacts of switching in retail planning policy and the emergence of 'convenience culture'. Chapter 4 then switches to the empirical basis of the study beginning with the design of the study, triangulated approach of implemented methodology and encountered issues and limitations. Chapter 5 then provides the details of empirical evidence found in the cross-regional analysis. In particular it reports on the complex adjustment of UK high streets to the global economic crisis evident in our descriptive analysis and derives a number of indicators responsible for the performance of UK town centres. Chapter 6 switches to the intra-urban level to check whether the cross-regional findings hold

steady at a local scale and in the context of a ‘third wave data’ it evaluates Bristol retail centres performance during the ‘post-recession shallow recovery’ period. In chapter 7, these empirical findings are utilised and linked to the concept of constantly evolving high streets. That concept of evolutionary changes underpins the theorisation of their adjustment to the economic and competitive shocks, based on the notion of adaptive resilience. Finally, Chapter 8 discusses the implications of the results, particularly the policy significant novel finding that both the policy-compliant corporate foodstores and independent small retailers have been beneficial for the vitality of UK high streets.

Chapter 2: The shock of economic crisis on UK high streets-contextualisation and theorisation

This chapter explains impacts of the global economic crisis on UK high streets and town centres and reviews the concepts of resilience. It firstly examines the response of UK retail centres to the 2008-09 economic crisis and then explores the determinants of vacancy rate – a key performance indicator of a town centre performance. Further, this chapter outlines the theoretical work related to the economic health of UK town centres and focuses on the factors affecting vacancy rate change as a product of filtering the economic shock through two systems - national/regional and local. Then, it reviews the three concepts of resilience which have recently become popular in the regional and economic geography. Finally, this chapter considers in more detail the emerging concept of adaptive resilience by exploring its components and explanatory frameworks and then positions the constantly evolving high streets in that context.

2.1 The shock of global economic crisis

The shock of global economic crisis of 2008-09, which followed the sharp drop in consumer confidence, has impacted UK town centres and high streets configurations in a complex and uneven way. Whilst many high streets have suffered significant erosion of their vitality and viability with substantial increases in vacant units, some centres have been able to survive the crisis and adapt successfully to the new era of austerity. One reason for the uneven impact of the economic crisis on UK town centres could be associated with the geographically different retail landscapes and the geography of demand itself. In addition, the adverse impacts of that shock can be associated with the speed and severity of the last recession which caught the majority of retailers by surprise. Indeed, only a few retailers and manufacturers admitted having a strategy in place to deal with the consequences of the economic crisis (IGD, 2009). Consequently, a large number of UK high streets and town centres have experienced a rise in retail/service outlets closures, which in fact were not confined to the small

independent retailers, often perceived as most vulnerable, but were also common amongst large corporate chains. As boarded up shops have become an increasingly common scene, the press and media started to claim that once-thriving UK high streets were turning into 'Ghost Towns' (The Guardian, 2010). These has raised serious concerns about the future of traditional UK high streets not only amongst the members of public but were also publicly expressed by the Government. Overall, the portrayal of UK town centres has dramatically changed from buoyancy in the mid-2000s to cataclysmic decay towards the end of the decade. Furthermore, the emerging reality of 'Austerity Britain' with painful public spending cuts, high inflation and low or non-existing salary increases has affected not only consumer spending but also consumer confidence, bringing it down again to a record low levels (Experian, 2012).

On the other hand, there were town centres that were able to withstand the shock of economic crisis; that is to say those retail centres that have maintained or improved their performance, measured by the change in vacancy rate. Importantly, despite low consumer confidence and unfavourable economic conditions the particular dynamics of those centres have not only continued to protect their vitality but also attracted some retailers to open new stores. Such distinctive response of UK town centres and high streets to the onset of economic crisis can be viewed as a function of those centres' differential abilities to be resistant to and to recover from the economic shock. However, in order to understand UK high streets' resilience to the economic crisis, first the intriguing question of what the determinants of a 'healthy centre' needs to be dealt with. The sections below contextualise those determinants and establish their expected impact on vacancy rate, then theorise the impacts of economic crisis by evaluating the concepts of adaptive resilience that have recently attracted considerable attention of economic geographers.

2.1.1 Determinants of vacancy rate

Vacancy rate is the most commonly used indicator of UK high streets' economic health and is an essential element of town centre health checks performed regularly by local authorities, commercial consultancies and town centre managers (Guy, 2007;

Findlay and Sparks, 2010). However, as pointed out by some commentators, there has been inconsistency in approaches to the assessment of high-street economic performance when using vacancy rate. For instance, Colliers CRE (2009) distinguishes two types of vacancies, the hard voids (empty units available for occupation) and soft voids (available units but trading) however, Goad Experian does not account for the latter, essentially splitting the category of 'vacant outlets' into vacant retail and vacant non retail. Despite limited benchmarking and a lack of agreed definitions, in general terms, vacancy rate refers to a number of vacant units relative to an overall number of retail/service outlets in a particular town centre/high street.

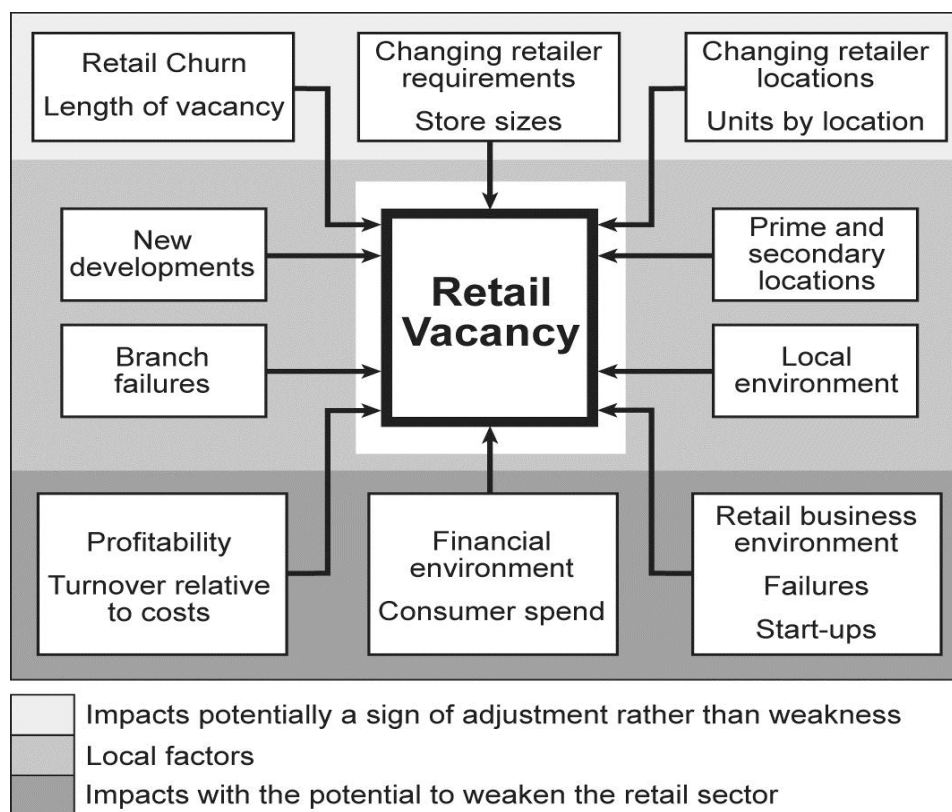
Typically, elevated retail vacancies are strongly associated with negative impacts of economic crisis; however, it should be noted that vacancy rates are not uniformly and inevitably an indicator of the fragility of a town centre/high street (Findlay and Sparks, 2010). They may equally be a sign of an on-going and essential readjustment, as even in stable economic conditions, a degree of what is termed *churn* is essential for a 'healthy high street'. Often rapidly changing retailers' requirements, in particular store formats, sizes, and preferred locations within town centres/high streets aid to accommodate and adjust to shifting consumer tastes and fluctuating levels of market demand. Nevertheless, high vacancy rates are perceived as harmful to a town centre's vitality and viability, and their causes have been investigated by numerous studies.

One of the first such studies claimed that local demographics and economic conditions are primarily responsible for retail market size and its economic performance (Di Pasquale and Wheaton, 1996), thus indicating that an alteration of either of these factors can easily cause an increase or decrease in vacancy rate. More recently, Zweeden (2009), who examined Dutch town centres, claimed that retail vacancies are derivatives of various exogenous and endogenous factors, and the extent to which they can be altered by retailers or local authorities is defined as a key difference between them. The exogenous factors including economic cycles, demographics of catchment areas, planning policies and online shopping, are believed to have been important, but they could not be controlled locally. On the other hand, local authorities and retailers could manage the endogenous factors such as accessibility, parking policy, average rent, opening hours, available store space,

diversity of stores, and presence of the most attractive stores. Consequently, it could be argued that town centre retailers in order to adjust to any change to the former indicators would have to reorganise the latter factors, which in turn, might have direct impact on retail vacancies and high streets structures.

Similarly, as Findlay and Sparks (2010) schema (Figure 2.1) implies, the increase in vacancy rates can be seen as a product of filtering the shock of economic crisis through two different systems. First, through the national structures that have the potential to weaken retail sector such as financial environment or failures of national chains. This can produce regional, sub regional and local variations in both levels of consumer confidence and in levels of demand across the immediate catchment areas (Wrigley and Dolega, 2011).

Figure 2.1: Determinants of retail vacancy - the view of Findlay and Sparks (2010)



Second, through the existing economic structures of the town centres/high streets themselves such as pre-existing mix of businesses, the relationships and interdependencies between those businesses, and through local institutional

structures supportive or less supportive of their business-practice environments and entrepreneurial cultures.

In terms of the first dimension, the location of a retail centre and its embeddedness might be important as some researchers e.g. Dorling (2010) reported a clear north-south divide in the UK which has the tendency to produce local variations in affluence, spending patterns etc. Various aspects of local variations, often controlled by the demographics, have been widely examined by both retailers and researchers as recognising local consumers' characteristics and predicting their potential behaviour enhances substantially the understanding of local catchments. Campo et al., (2000) investigating the relationship between the composition of local population and a town centre's sales levels, have found that the total retail sales' increase/decrease is based on the local market spending potential or purchasing power. This has indicated that local demographic factors such as increase in population, age and affluence of a particular catchment area have the capacity to influence neighbouring vacancy rates. Similarly, BCSC (2007) has linked the success of retailing in recent decades to the growth in customers' real disposable income, and the demographic factors such as increasing wealth of middle classes and significant population growth. Moreover, they have also pointed out that the changing age structure, in particular the substantial increase of the 20 to 44 year-olds, which is a key, high-spending group, has been a vital determinant of the growth in the retail sector. Besides, Guy (1998) draws our attention to the fact that vacancy rates in UK town centres/high streets could be impacted by the increase in car ownership, which is one of the key parameters changing shopping behaviour as more private car ownership allows people to visit large edge-of-town and out-of-town shopping centres and retail parks.

Since the economic crisis is an exogenous global factor, the necessary elements in self-organising anticipatory or reactive reconfiguration have been strictly related to the second dimension, the economic structures and configurations of town centres/high streets themselves, which in turn comprised the following groups of endogenous factors:

- a) The mix and interdependencies of business,

- b) Local supportive or unsupportive institutional practices influencing attractiveness of the town centre/high street,
- c) The physical configuration of the town centre or high street and the extent to which that might help facilitate reconfiguration and renewal.

2.1.2 The mix and interdependencies of business

The importance of retail mix, especially in a success of medium sized and smaller town centres has drawn attention of researchers analysing shopper's attitudes to choice of shopping location (BCSC, 2007). Considerable presence of local and independent retailers, which is the key enhancement of high street diversity, has been argued by small-retailer trade organisations and NGOs to be beneficial and protective of UK town centres (Wrigley, 2010), however potentially fragile. Furthermore, different centres have diverse potentials that might be associated with their past functions, and failure to address these issues can prejudice successful retailing (Dawson, 2000; Findlay and Sparks, 2009). For example, the lack of a major food store in a market town or deprived area can lead to outshopping or poor urban fabric can lead to retail blight.

By extension, the importance and benefits of corporate foodstore presence or entry via a town centres first policy-compliant in-centre or edge-of-centre site to the economic performance of a town centre have been discussed by various researchers such as Thomas and Bromley (2003); Powe and Shaw (2004); Wrigley et al., (2010b). They have demonstrated that a large-format food retail development can not only integrate functionally with other parts of a centre, but also generate high levels of linked trips, which is an essential element of a vital and vibrant town centre. Finally, the right balance between retail and service outlets within a retail centre, with the increasing importance of services, has been viewed as a potentially important determinant of vacancy rates. Indeed, customers value the availability of different services in close proximity to stores; in particular the recent escalation of 'fun/hedonic shopping' sees the presence of bars, restaurants and coffee shops as an inherent element of this phenomenon (Moeller, 2009; Zweeden, 2009). These findings simply specify the desirable 'retail mix' which attracts higher footfall as one that comprises

food stores alongside vibrant independent stores and numerous services. It could be argued that town centres with such 'retail mix' are equipped better to withstand the impact of economic crisis and should be able to preserve their vitality and viability better than those lacking diverse independent retailers, corporate foodstore or service and leisure outlets.

2.1.3 Local supportive or unsupportive institutional practices influencing attractiveness of a town centre/high street

Developing and maintaining an attractive trading environment is crucial to the economic success of a town centre. *British Retail Consortium* (2009) indicates that not only customers but also employees and businesses must feel that the high street is safe, welcoming and clean.

The overall attractiveness of retail centres requires a visionary management approach (Portas, 2011), substantial investments into the design and maintenance of the built environment and 'streetscape' (BRC, 2009). This, however, not always has been the case and despite UK town centres and high streets having traditionally been at the heart of the land-use planning system, in many cases the state of retail fabric forming an integral part of town centres and high streets has been a cause for concern (Findlay and Sparks 2009b). Nevertheless, as *British Retail Consortium* (2009) acknowledges, a number of other policy initiatives that required co-ordinated activity between local authorities, public bodies and private interests have addressed the issue of deteriorating town centres. These include various schemes and partnerships with the most common and often highly successful including Town Centre Management Scheme and Business Improvement Districts (BID's). Findlay and Sparks (2009) evaluating town centre management schemes have noticed that their impacts were far from uniform, mainly due to the implementation of various approaches, however, they concluded that such schemes were helpful in seeing the town centre as a functioning whole. Business Improvement Districts (BIDs) on the other hand, have provided additional services such as regeneration or improvements to town centres establishing various partnerships between local authorities and local businesses. They are normally funded in whole or in part by a levy on ratepayers and co-ordinated by the Association of Town Centre Management (Sear and Parry, 2012). BIDs however, differ from town

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centre management crucially in the involvement of local businesses and although they are being currently developed across England, their impacts have not yet been fully evaluated.

But how do we measure town centre attractiveness? It could be argued that attractiveness and image of retail centres are difficult attributes to define and measure quantitatively; therefore, a range of qualitative measures could be more applicable (Dennis, 2005). Nevertheless, in one of the first examples of such a study McGoldrick and Thompson (1992) adopted the former approach by modelling the attributes associated with perceptions of shopping centres' attractiveness. Remarkably, they have found that perceptions of attractiveness were strongly correlated with simple addition of the satisfactions and dissatisfactions that customers experienced during shopping. The qualitative approach however, has been far more popular. Guy (1998) highlighted that the general qualities affecting consumer choice of shopping destination include not only a variety of goods and a price, but also the spaciousness of a centre and quality of car parking. Dennis et al., (2002), evaluating shoppers' perceptions of the attributes responsible for town centre attractiveness, has indicated such merits as quality of stores, cleanliness and availability of toilets as important.

On the other hand, some qualitative attributes that are easier to quantify e.g. presence of anchor/food stores or adequate parking provision have been used by several studies to determine the measures of town centre attractiveness. The studies by Finn and Louviere (1996) investigating the shopping centres in Edmonton and Feinberg et al., (2000) evaluating the prediction of US mall patronage from attraction scales, found that specific anchor stores had a substantial impact on consumers' images of shopping centres, accounting for 'most of the variation in centre patronage'. Findings such as these, demonstrate that most attractive shopping centres are expected to attract the most successful and popular retailers (Dennis et al., 2002) in order to maximise their footfall. Attracting sufficient footfall is a crucial part of retail success and town centre vitality and viability, therefore additional elements associated with easy access for shoppers, retail staff and deliveries are vital. Weak transport links and inadequate parking provision threaten the viability of high street retailers (BRC, 2009) as the majority of shopping places in the UK are almost entirely reliant on the

car-borne shopper. According to BCSC (2007), car as a means of transport accounts for 61% of all trips undertaken for shopping whether as driver or passenger. Walking is the second most popular way of getting to a town centre with 25% of shopping trips, whilst 9% of people go by bus. Rail and all other means of transport have only a minor share, making up only 3.5% of the total.

Taking this into account it is not surprising that some commentators argue that retailers perceive parking provision as the most important location criterion (Timmermans, 1986). In addition, it has been found that shoppers when choosing a shopping destination rely not only on the car park provision but also consider important the type of parking, with surface car parks seen as more favourable than multi-storey ones (Walters, 1996). However, studies examining those aspects such as Still and Simmonds (2000) showed that the effects of parking restraint policies had only a very weak statistical relationship between accessibility and urban economic vitality. Nevertheless, there seems to be support for a view that without decent accessibility town centres might experience leakage in customers' spending as consumers are more likely to visit other centres in the neighbourhood with better accessibility or choose to do their shopping online. Furthermore, Findley and Sparks (2009) found that in poorly provisioned areas consumers tended to shop outside the area for food, seeking out large food stores for their weekly shopping.

Finally, several factors such as the increasing cost and finite supply of oil, concerns over CO₂ emissions, congested roads and political opinion have been exerting pressure for controlled car access to shopping places by restricting the supply of parking or raising prices. However, the demand for more and simultaneously affordable car parking is a major issue with shoppers. This needs to be addressed by local authorities as the research indicates that measures making cars more difficult or costly to use are at present more likely to increase online sales than get people onto public transport (BCSC, 2007; Portas, 2011).

2.1.4 The physical configuration of the town centres and high streets

Town centre physical configurations and their potential impacts on vitality and viability, investigated over last few decades, have taken into account several aspects.

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First, the concept of centre size, introduced by Timmermans (1986) as an important retail location factor, considered both number of outlets and retail floorspace. Some examples of studies that employed both those measures include Mintel (1997) linking the number of retail outlets to the attractiveness of shopping and town centres, Guy (1994) applying retail floorspace as a proxy measure when defining retail hierarchy in Cardiff and Dennis et al., (2002) who used retail floorspace to establish the defining point for a substantial competitor. However, the lack of consistent approaches when using centre size, in particular to calculate vacancy rates was pointed out by Findlay and Sparks (2009) as potentially problematic. In particular, they observed that in some secondary shopping areas there could be a large number of vacant units comprising relatively small floorspace, whereas the primary areas of the centre can comprise fewer but larger vacant outlets. Employing only one measure could create biased results; therefore, they have concluded that both measures are likely to be useful.

Generally, larger centres have been associated with higher attractiveness, offering more variety and better customer experience. On the other hand, the competition within large centres can be tough and the high presence of multiple retailers could be a detrimental factor for small independent retailers, thus contributing to a decrease in town centre diversity. Despite prevailing levels of competition, larger centres offer a potentially wider variety of niches, which facilitate flexible reconfiguration when compared with the typically older less adaptable retail fabric of many UK smaller town centres/high streets (Wrigley and Dolega, 2011). It is clear that the views linking retail centres size/position within retail hierarchy and their resilience capacity to the economic shock have been divided. On the one hand, the BCSC (2007) predicted that centres with large, modern shop units towards the top end of the retail hierarchy would remain highly competitive, whereas centres further down the hierarchy, with many small stores and poor retail fabric would face challenges. On the other hand smaller centres were found to be more resilient to the shock of economic crisis measured by the vacancy rate change (Wrigley and Dolega, 2011), a finding which was confirmed later on by the LDC's results (2010).

A second factor related to town centres' physical configuration which could have been responsible for the recent rise in retail vacancy rates, involved the increased

demand for a new retail floorspace, largely imposed by the economic prosperity of the first half of 2000s. The statistics compiled by CB Richard Ellis (2010) show that on average over past 30 years, 13 million square feet (Sq Ft) of gross retail space has been added per annum, predominantly in primary shopping areas. Retail centres with a relatively large amount of newly completed retail/service floorspace shortly before the economic crisis, could have been faced with difficulties in letting the new space during the unfavourable economic conditions leading to, presumably temporarily, increases in vacancy rates.

Finally, the level of what can be termed structural vacancy in the town centre/high street, defined as long-term empty units in existence for more than two years, has also been viewed as a potentially important factor in determining the vacancy rate (Findlay and Sparks, 2009; Zweeden, 2009). High proportions of such units usually indicate poor retail fabric and can be harmful to the attractiveness of a centre as a shopping destination. That is to say, the level of 'bad' vacancy as opposed to the short-lasting 'healthy' vacancy associated with normal churn and which facilitates both adjustment of store formats, sizes, and in-centre locations by existing retailers/service providers and a necessary level of entry and exit.

2.2 Theorising the impacts of economic shock

The growth path of UK high streets and town centres has been far from smooth and intact, having frequently been a subject to various types of interruptions and disruptions such as changes in planning policy, emergence and rapid increase in internet sales and periodic economic crisis. Martin (2011, p. 4), drawing on Keynesian business cycle theory, argues that *'major recessions can be viewed as system-wide shocks that periodically interrupt and disrupt the process of economic growth and development'*. He also argues that there is evidence that three major recessionary shocks, which have occurred across the advanced economies during the last thirty years, have been far from geographically even in their occurrence. Further, he claims that 'geography of recession' facilitates an evaluation of regional responses to major recessionary shocks and is often interlinked to a long-run regional growth patterns, and the existence and evolution of regional disparities in economic prosperity. In

consequence, the recent economic crisis has triggered an alteration of local and regional development discussions *'broadening it from a preoccupation with growth to one that captures the notion of resilience'* (Dawley et al., 2010, p. 1).

UK high streets and town centres could be viewed as diverse and relatively well-organized economic systems, therefore their adjustment to the onset of 2008-09 economic crisis has been complex and as of yet not fully understood. Exploring the notion of 'resilience' in the context of UK retail centres adjustment to the recessionary shock seems to be highly relevant and potentially significant (Simmie and Martin, 2010). However, it is important to recognise that the application of resilience to local and regional systems remains embryonic (Christopherson et al., 2010; Dawley et al., 2010) and its application to town centres and high streets is virtually non-existent. Thus, the consideration by this study of the anticipatory or reactive capacities of town centres and high streets to minimize the impacts of major shocks is a novel undertaking, which has the capacity to extend the understanding of a link between the evolutionary trajectories and the differential performance of those centres.

2.2.1 Three concepts of resilience

The concept of resilience broadly defined as the ability to 'recover form and position elastically' following a disturbance of some form, has been used for some time in the physical, engineering and ecological sciences, but only very recently has attracted attention from regional analysts, spatial economists and economic geographers (Pendall et al., 2010; Christopherson et al., 2010; Hassink, 2010; Simmie and Martin, 2010; Martin, 2011). Dawley et al., (2010) pointed out that the inspiration has been largely drawn from recent analyses of the response of how regions, localities and public policies have adapted to disastrous events and environmental shocks, ranging from 9/11 to Hurricane Katrina (see, Foster 2007; Hill et al., 2008). Essentially, interest has focused on the capacity of local economic systems to recover from an external shock, what Hassink (2010, p. 45) describes as *'one of the most intriguing questions in economic geography ... why some regional economies manage to renew themselves, whereas others remain locked in decline'*. Although most commentators argue that such performance ought to be seen as a result of an on-going evolution and

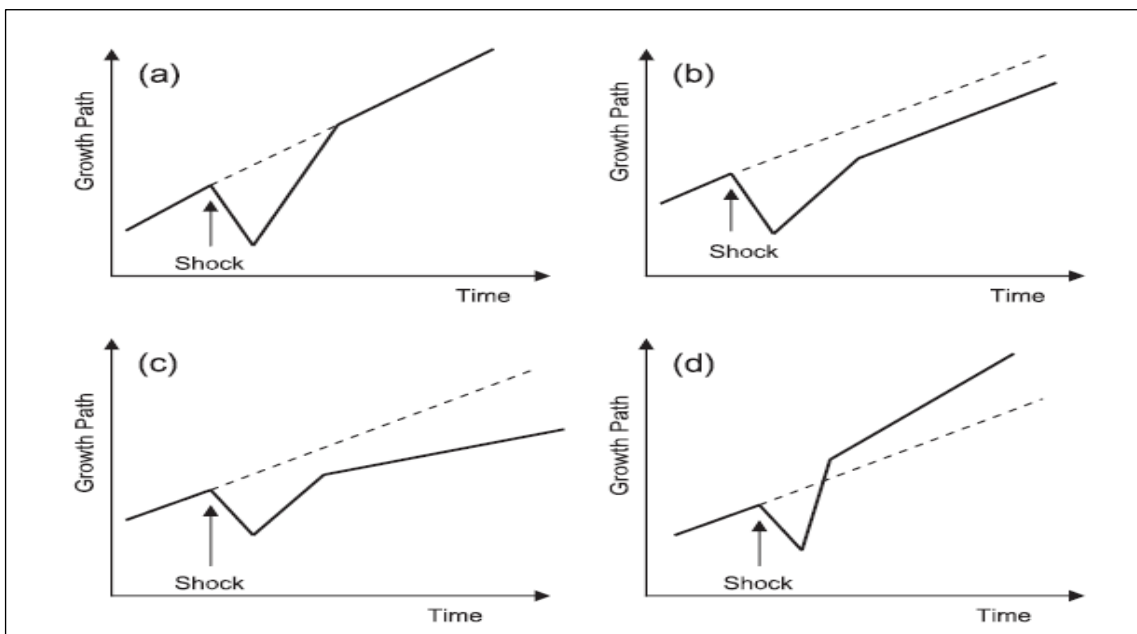
adaptation as an alternative and fuller conceptualisation of resilience. Simmie and Martin (2010) and Martin (2011) draw our attention to three different interpretations of the concept of resilience, adopted in different scientific traditions: (i) the engineering resilience interpretation found in physical science; (ii) the ecological resilience interpretation found in biological science; and (iii) the adaptive resilience interpretation found in complex systems theory.

(i) Engineering resilience focuses on the ability of a system to bounce back to its pre-shock state or growth path; i.e. on the resistance of a system to economic shock and the speed of returning to a stable configuration. Martin points out that a system is assumed to be in 'equilibrium' before the shock and a disturbance moves the system off its equilibrium growth path; however, self-correcting forces and adjustments eventually bring it back onto that path. The resilience, in this instance, is measured by the differential capacity to being moved off the path and the speed of returning to its pre-shock 'equilibrium' state or configuration (Figure 2.3 a). The problem with this type of resilience is that regional, local economies or town centres do not need to be necessarily in an equilibrium state. Pike et al., (2006) argue that the perceived qualities of a successful region such as dynamism contrasts with the equilibristic approach, which implies that a resilient economy would not necessarily change over time.

(ii) Second definition, the so-called 'ecological resilience' focuses, as Martin shows, on the scale of shock a system can absorb before it is destabilised and moved to a new configuration. Despite some ambiguities of what constitutes the resilience, it can be measured by the magnitude of the disturbance that is absorbed before the system changes its structure, in other words, the level of 'elasticity threshold' required by the system to be pushed into a new, stable configuration. The key difference offered by the 'ecological resilience' is that the new configuration can also be superior or inferior relative to the pre-existing one, which respectively is associated with higher and lower resilience (Figure 2.2 b, c and d). In this context, Simmie and Martin (2010) demonstrated that a resilient regional economy would adapt successfully to the economic crisis and either resume, or even improve its long-run equilibrium growth path. Conversely, they argued that a non-resilient regional economy would presumably fail to transform itself successfully and instead become 'locked' into a long-run

outdated trajectory or under-performing equilibriums of decline. Such a response, on the one hand, implies that a resilient regional economy or town centre is one that is capable of absorbing and accommodating extreme shocks without any significant change to its form or function, thus somewhat resembling the engineering resilience (Simmie and Martin, 2010). However, on the other hand, it offers an approach that is more dynamic, linking resilience with adaptability of a system's structure and function, and according to McGlade et al., (2006) is much richer when the evolutionary aspect is considered. In the context of the responses of UK town centres to the external shock, both engineering and ecological interpretations of resilience are present in the debates which inform and frame policy. The concept of 'bouncing back' has often been implicit and the notion of 'tipping mechanisms', which move town centres/high streets beyond their elasticity thresholds, has been present in public debate on the future of UK high streets (Wrigley and Dolega, 2011).

Figure 2.2: Responses of a regional economy to an external shock, a) engineering resilience, b) stable, c) inferior and d) superior new configurations found in ecological resilience, Simmie and Martin, 2010



Indeed, both small-retailer trade organisations (e.g. the Association of Convenience Stores) and anti-corporate-food-retail or environmentally focused NGOs, have mounted arguments relating to the potentially adverse impacts of corporate foodstore

entry on the fragile ecologies of small and specialist independent-retailer-dominated town centres and high streets (Wrigley and Dolega, 2011). Yet, despite acknowledging that ecological resilience offers some analytical leverage, neither of these interpretations quite captures the subtle nature of town-centre/high-street adaptation to the economic crisis.

(iii) The third interpretation, identified by Martin as adaptive resilience, focuses on anticipatory or reactive reorganisation of the form and function of a system to minimise the impact of a destabilising shock, and thus offers far greater traction. As Martin observes, complex adaptive systems are distinguished by self-organising behaviour and adaptive capacity which enable them to reconfigure their internal structures spontaneously. As a result, the adaptive resilience interpretation focuses on resilience as a dynamic and evolutionary process. Furthermore, this interpretation, in Martin's view, resonates with Schumpeterian (1942) notions of the 'creatively destructive' potential of macroeconomic shocks in which the sweeping away of outmoded economic structures opens up opportunities to develop new configurations and new trajectories of growth. In the context of UK town centres and high streets, the closure of Woolworth stores, often criticised for their lack of identity, or Borders, not being able to compete directly with Amazon, can be seen as examples of such creatively destructive force in action.

2.2.2 Adaptive resilience: the emerging concept

In the context of resilience and evolutionary adaptation of economic systems to an economic shock, Simmie and Martin (2010) distinguish four conceptual frameworks: 1) generalised Darwinism, 2) path dependence theory, 3) complexity theory and 4) panarchy. Generalised Darwinism, which emphasises variety, novelty and selection, suggests that adaptability is about the potential to adjust to changing circumstances in an appropriate way. Variety or in our case the enhanced diversity of UK high streets are perceived as more resilient structures being on the one hand less prone to shocks and on the other able to recover faster, than the more homogenous 'cloned' town centres. Additionally, the widely discussed shifting diversity of UK high streets, the fragile ecologies of small and specialist independent-retailer dominated centres, seen

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by some NGO's as in need of protection, could be viewed in the context of what is termed the Jacobs versus Marshall-Arrow-Romer (MAR) debate (Glaeser et al., 1992). In particular, the issue of concentration versus diversification, considered within that debate, has important implications for the ability of regional economies to cope with changing competitive dynamics flowing from the macroeconomic shocks of rapid globalisation of industries.

Path dependent process links the adaptive capabilities of a region's economy to the nature of its pre-existing state where the system can become 'locked into' a particular trajectory of economic development. As Simmie and Martin (2010) pointed out the effect of path dependence on resilience is open to interpretations, nevertheless the economic shock has the capacity to 'de-lock' the system from one of the multi equilibrium paths (David, 2005; Martin and Sunley, 2006). Translating this into retail, the interpretation of 'lock-in' as a negative characteristic which holds back the adaptation of town centres to a shock, involves such attributes as poor existing retail fabric or lack of new and modern stores. On the one hand, such configuration decreases attractiveness of a high street and on the other hand, prevents the necessary and desirable *retail churn*, increasing consequently the unwanted structural vacancy. The adaptively resilient high street would emerge through opportunities or decisions to leave the path from the past in favour of a new, related or alternative trajectory or niche, such as regeneration or demolition of outdated retail/service outlets (Dawley et al., 2010).

Further, the complex system theory, which is characterised by non-linear dynamics and self-reinforcing interactions among system components (Martin and Sunley, 2007), highlights self-organisation, and adaptive growth as mechanisms responsible for adaptation of their structures to changes in the external environment e.g. economic crisis. However, there are some implications of this approach as the increased connectedness of complex economic systems has the capacity to decrease their adaptability and therefore resilience to the external shocks (Simmie and Martin, 2010). This overlaps with the framework of 'panarchy', defined by Simmie and Martin as a model that adopts a four-phase process of continual system adjustment, explicitly associates resilience with the adaptive cycles. There are two explicit loops in that model;

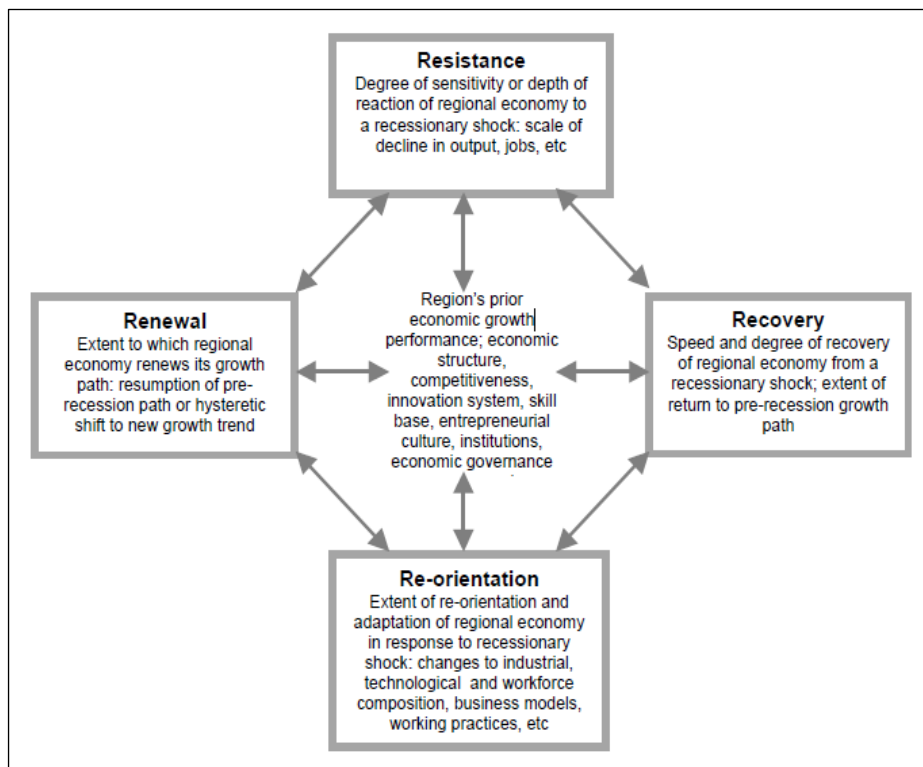
one related to the emergence and development of a growing path and another related to the decline of that structure but simultaneously opening up the potential for its reorganisation. Dawley et al., (2010, p.7) summarising these adaptive cycles have shown that the accumulated resources available to a system lead to increased connectedness and dependency within the system, resulting in lower adaptability and reduced resilience to a shock or long-term structural decline. However, due to that decline, relations once again become looser and more diverse as part of a second release reorganisation loop which in turn nurtures innovation, technological change and new growth trajectories.

The conceptualisation of evolutionary trajectories of economic systems, offering explanations for the differentiated resilience of places, has been closely linked to the notions of adaptation and adaptability. Pike et al., (2010, p.62) drawing largely on previous work of Grabher and Stark (1997) defined adaptation as a *'movement towards a pre-conceived path in the short run ... whereas adaptability as the dynamic capacity to effect and unfold multiple evolutionary trajectories'*. They pointed out that these definitions can be seen 'in tension with each other' as resilience through adaptability may involve decisions to leave the successful pre-shock path opening up opportunities to a new, related or alternative trajectory. Nevertheless, in their view adaptation and adaptability may offer a complementary explanation on how the dynamics of particular places may interrelate in order to provide more complex resilience to both external and internal shocks.

In order to envisage and outline the response of regions and town centres to the shock of economic crisis, the four interrelated dimensions: resistance, recovery, re-orientation and renewal, identified by Martin (2011) and shown on Figure 2.3 seem to be highly relevant. Firstly, the resistance defined as the degree of fragility or vulnerability of a system to macroeconomic shock such as recession. On the one hand, the resistance of a system will be determined by the nature and strength of the shock itself but on the other hand, the degree of sensitivity will largely depend on the underlying characteristics and dynamics of town centres and regions in which they are embedded, as different configurations create diverse adaptability. A second dimension is the recovery, in particular its speed and extent plus the way it relates to the degree

of resistance. The hypothesis here is that systems, which had strong and sound underlying dynamics such as healthy retail mix and attractive physical environment attracting high footfall, exhibit stronger resistance and in turn, are more likely to recover quicker from the economic crisis. The third aspect focuses on the extent to which the regional economy or town centre undergoes structural re-orientation and what implications such re-orientation has for the town centre's vitality and viability. Finally, the renewal is defined as the extent to which economies resume their pre-shock growth path. The degree of both the re-orientation and the renewal can be established by analysing the structures of UK high streets and town centres in the post-recession period. Additionally, Martin highlights the fact that all four dimensions are interlinked and can interact in different ways to produce different outcomes in terms of the observed resilience.

Figure 2.3: Four Dimensions of Regional Economic Resilience to Recessionary Shock, Martin (2011)



In summary, drawing from an emerging concept of resilience of economic systems, the response of UK town centres to the economic shock can be seen as a function of

the mix and interdependencies of existing business, the dynamics of those centres such as diversity, attractiveness, accessibility and the national planning policies or institutional supportive/unsupportive actions. Those characteristics and action are responsible for building town centre adaptive capacity which in turn, disturbed by an economic or competitive shock can create new opportunities for development and innovation (Pendall et al., 2010; Raco and Street, 2012). These substantiate the emergence of sufficiently adaptable systems, which are characterised by enhanced resilience and are able to withstand future shocks in better shape. The resilience framework strengthens some basic arguments derived from evolutionary economics such as the advantages of diversity, seeing regional economies as path-dependent systems (Hassing, 2010) or the potential of novelty and selection in economic system adjustment to evolving circumstances (Simmie and Martin, 2010). However, some commentators expressed their criticism to an idea of bringing the concept of resilience into economic geography in order to explain regional differences. In particular, Hassink (2010) and Pike et al., (2010) were concerned with the focus on equilibrium or multi equilibrium state and the neglect of state and policies at various spatial levels. They claimed that the notion of equilibrium appears to contradict with the constantly changing form observed in regions and town centres. Moreover, as Swanstrom (2008, p.3) pointed out the issue of power and conflict *'present in regional governance in ways they are not present in ecosystems'* is itself problematic. In terms of town centres, the conflict of interests between developers and large multiple retailers on one side and the policy makers and town planners on the other has been present since the 1990's. In the view of some researchers (e.g. Hassink, 2010; Hudson, 2005) the role of state and policies are the most important factors in explaining regional differences. However, Martin (2011) claims that recessionary shocks can cause sudden and intense structural change and re-orientation of a system, resulting in hysteretic change to a region's growth path and for that reason resilience should be central to any conceptual framework explaining the evolution of the economic landscape. In particular, as Pike et al., (2010, p.62) pointed out, the notions of adaptation and adaptability should be perceived *'as central causal concepts in explaining the geographically uneven resilience of places'*. Nevertheless, as the research investigating the adaptive resilience of UK

high streets and town centres is almost non-existent, there is an urgent need to develop a conceptual framework against which future studies could be positioned and interpreted.

Chapter 3: Other forces driving UK High Streets' performance and geography of demand

This chapter summarises the remaining three forces of change which have been driving high streets evolution and performance over last fifteen years and positions those forces in the context of retail demand. First, it outlines the rapid rise in online retailing and its impacts on the traditional British high street, then compares the two approaches to that issue adopted by various studies - the revolutionary versus evolutionary approach. Second this chapter summarises the long-term and cumulative impacts of competition from large out-of-centre retail developments and outlines the changes in retail planning policy over the last twenty-five years as a response to those impacts. In particular, this section highlights the implementation of a 'town centre first' policy to retail developments and the subsequent adaptation to that agenda by corporate food retailers. Third, it investigates the emergence of 'convenience culture' and the nature of corporate food retailers' entry into the small convenience store sector. Finally, it looks at different aspects of the demand for retail goods and retail space. This chapter also analyses different factors responsible for the change in that demand and its geographical variation.

3.1 The increasing impact of online retailing

The rise of online retailing, also referred to as B2C (business to consumer), e-commerce (electronic commerce) or e-tailing, has generated substantial amount of interest amongst academics, politicians, industrialists, managers, entrepreneurs, and principally retailers (Doherty and Ellis-Chadwick, 2010). In general, the technological change has been widely seen as the major cause of industry changes (Dosi et al., 1997) and indeed, the rapid advancement in the World Wide Web technology had been named 'the greatest technological evolution in traditional retailing in the past decade' (Sethuraman and Parasuraman 2005, p. 109). The potential of the internet as a vehicle for promoting goods and capturing sales was apparent, offering unrestricted

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convenience, especially global reach, ease of access, flexibility and speed, cost efficiency and ease of maintenance (Doherty and Ellis-Chadwick, 2010; Williams, 2009). Many innovators and entrepreneurs pursued the newly arisen opportunistic strategy, however as Williams (2009) demonstrated, often in a rapid and erratic way. The initial period can be associated with the emergence of mega stores such as Shopping.com, specialist sites such as Amazon.com, price comparison, event planning and auction sites e.g. eBay. Exceptionally large rates of new e-commerce business start-ups, driven by the prospect of a quick growth, generating large profits and often underestimating the barriers and impediments lying ahead, created the so-called 'dot.com' bubble. In that period, many e-tailers had poor business models, which tested against the reality of capital markets, had little chance to generate profit. For instance, early e-tailers spent exceptionally high amounts on marketing and advertising comparing to the physical retailers, with average respective figures at \$26 and \$2.50 per order (Rosen and Howard, 2000). Additionally, the damaging costs of collection and delivery involved in operating an infrastructure of completing orders placed over the internet, together with issues of tactility and security (Wrigley, 2009) certainly contributed to a spectacular end of 'dot.com' bubble in 2000. This initial period of e-tailing, viewed by many as a 'disruptive technology/innovation' (Christensen and Raynor, 2003), had the capacity to *'alter the existing basis of competitive advantage in the industry, lowering barriers to entry and circumventing the value chains of traditional retailing'* (Wrigley, 2009, p. 402). Moreover, some academics have argued that e-commerce has challenged traditional retailers at a time when they were beginning to assume an increasingly important role in the global economy (Wrigley, 2009; Williams, 2009). Initially, many retailers demonstrated some reluctance and defensive retreat in relation to the new trend but, by the end of the 1990s, larger and more established traders had considered adaptation to that change as a way forward, developing strategic responses (Burt and Sparks, 2003). Traditional store-based retailers began to transfer part of their business online and reorganise themselves into multichannel organizational forms, referred to as 'bricks and clicks' retailers (Burt and Sparks, 2003; Williams, 2009; Wrigley, 2009). They had considerable advantage over virtual retailers, having warehouses, supply-chains, distribution

systems, customer-support centres, and product-return networks already in place; they could simply add e-commerce operations to their existing businesses (Wrigley, 2009). On the other hand, e-tailers as opposed to 'bricks and clicks' retailers, had high fixed costs related to building their brand identities, forming marketing alliances and increasing business efficiencies such as taking it to economies of scale e.g. Amazon, eBay. As a result, the so-called 'pure-play' retailers have not become as significant as originally predicted, representing only about a third of the UK's total online retail spend at the end of the 2000s [KPMG/Synovate Retail Think Tank (RTT), 2011]. However, Wrigley (2009a) demonstrated that several years after the 'dot.com' crash, e-commerce had recovered strongly and become a popular form of shopping not only in the U.S. and Western Europe but worldwide. Although, issues such as tactility, sociality and ease of fulfilment urged B2C retailers to penetrate different product sectors, the growth was largely driven by the established store-based retailers developing multichannel operations. Beginning with Tesco opening the online retail channel in 1999, the last decade has seen an ever-increasing numbers of traditional retailers joining the multi-channel players with Zara, Selfridges and Gap being examples of 2010 entrants (RTT, 2011). Main factors contributing to these expansions given by Wrigley include, existing know-how, growing consumer trust in both the established retailers and security of online shopping, and an increasing range of 'virtual products' that could be transported within electronic space not compromising the quality such as music, software or games. Further, Williams (2009) identified additional attributes strongly associated with e-tailing such as increased possibility of price comparison, 24/7 convenience, selection of a product not limited by physical space and much wider geographical reach. Finally and most recently, the shock wave of global economic crisis and subsequent adjustment to the emerging reality of 'Austerity Britain' with highly limited economic growth and public spending cuts affecting family incomes have increased and accelerated the progress of substitution effects, defined as longer-term structural shifts to online retail. As a result, online sales have been growing exponentially in the UK, increasing tenfold in the past twelve years from merely £581 million in 1999 (Verdict, 2000) to over £50 billion in 2011, which was about 12.0% of the total UK retail sales. In the foreseeable future, online sales are

expected to continue their fast growth, and are predicted to reach around £60 billion by the end of 2012, a 14.0% share of all UK retail sales (Centre for Retail Research, 2012). However, it needs to be noted that there has not been common consensus in the way online sales have been estimated by different consultancies, creating considerable discrepancy; for instance, Interactive Media in Retail Group (2012) claimed that UK online sales reached £68 billion in 2011

3.1.1 Evolution or revolution in e-commerce?

Although arrival of B2C e-commerce has been seen by some early commentators as a hyped e-revolution within retail industry (Mahajan et al., 2002) the term of evolution, often used to describe how retail innovations and formats have changed over time, became increasingly prevalent (Thomas et al., 2005; Williams, 2009). Dawson (2000, p. 142) claimed that *'while much is talked about a "retail revolution", there is in reality little evidence of either major paradigm shifts or of change of a revolutionary nature.'* Similarly, Doherty and Ellis-Chadwick (2006) reviewing the literature on e-commerce have concluded that in terms of strategy formulation the question of evolution or revolution has not been answered by academic research.

Williams (2009) however, largely drawing on Davies' (1998) work, has developed a framework for e-tailing evolutionary changes, as opposed to revolutionary changes. He has distinguished four stages of the evolution process in e-tailing, namely hype and experimentation, retrenchment and sobriety sustainability phase, and focus and fragmentation. The initial stage was characterised by a rapid change in 'technological ferment' pursued by e-tailing pioneers exploiting transient opportunities using different strategies and formats, however they were often too fragile, specifically at dealing with larger competitors. E-tailing at that stage had the potential to shift traditional retailing, offering the convenience and lower price, but the high cost of marketing and distribution had questioned the sustainability of many businesses. Despite high rate' of insolvencies within e-commerce businesses during that period, Murray and Tripsas (2004) advocated the entrepreneurial experimentation and saw this stage as a continuous progression and learning.

The second stage, according to Williams (2009) occurred when larger retailers began to enter e-tailing, establishing good market coverage. These were mostly the leaders from other retailing sectors, primarily catalogue and store-based retailers who entered e-tailing directly such as Tesco, J.C. Penney, Office Depot, The Gap, L.L. Bean, and The Limited; by acquisition including CWP buying Drugstore.com and finally by forming alliances with an early e-tailing pioneer e.g. Toys'R'Us and Amazon. Their efficient operation drove down costs; however, many conventional retailers were still slow at coping with or taking advantage of the technological change. Although Williams (2009) argues that there were no clear boundaries between particular stages, the 'dot.com' bubble crash has been viewed in an evolutionary framework as a defining moment in e-tailing evolutionary change, accounting for the end of the revolutionary period and entering a longer period of stabilization. One of the important implications of this stage, differentiating it from the previous one, was the emphasis on profitability and high standards. The established store-based retailers saw e-commerce as a new channel facilitating deeper exploitation of new opportunities and maximising sales through improving the professionalism and overall quality of e-tailing. The development of dual or multichannel retailing by major retailers acted as a competence enhancing and sustaining force for existing virtual retailers (Williams, 2009).

The third stage of maturity is typified by increased stability and differentiation, and according to Davies (1998), the focus strategy of dominating 'clicks and bricks' retailers based on major market segments and cost leadership and reflected in lower prices was an important part of this stage. This was the basis of increased efficiency and effectiveness, where 'pure play' was the norm (Bower and Christensen, 1995; Burt and Sparks, 2003). Moreover, it has been argued that in this stage e-commerce retailers pursuing cost efficiencies seek out economies of scale and tend to neglect small market segments, so-called niches (Levy et al., 2005). Finally, increasing specialisation and customer targeting, where lower price is seen as an important component of e-commerce strategy, determine stage four, which is still underway. Williams (2009, p. 229) gives an account of such instances where *'Reflect.com sold customized cosmetics; Dell ... enables customers to order custom-built PCs directly from the company; and e-*

tailers, such as Zappos, permit buyers to customize their web pages'. The development of business partnerships or marketing alliances between various e-tailers and even manufacturers has become increasingly popular. For instance, about 30% of all products sold on Amazon.com come from third party retailers (The Economist, 2008). Recently, as social networking came to a prominence, it has increasingly been viewed by e-tailers as providing virtual gateways or distribution mechanisms, allowing the penetration of virtual communities and providing products and services to niche markets (Kirkpatrick 2007).

Nevertheless, the evolutionary framework, according to Williams (2009), suffers from a number of limitations common to other theoretical models of retail evolution. He pointed out that while focusing only on one dimension of retail change, the evolutionary framework, is purely conceptual and has not been empirically evaluated. It does not identify the causes of e-tailing changes; neither does it specify the mechanisms of change, nor account for geographical differences. Furthermore, Williams (2009) claims that the boundaries between traditional retailing channels are blurred, evolving into multichannel retailing; the evolutionary framework should be envisaged in that context, rather than analysing e-tailing as an isolated channel.

3.1.2 Impact of online retailing on UK high streets

The rapid growth of e-commerce, its nature and impacts on the traditional UK high streets and town centres have attracted over the past fifteen years much attention of both academic and commercial researchers. Doherty and Ellis-Chadwick (2010) pointed out that amongst early commentators there was a consensus view envisaging significant impact of Internet shopping on future retail sales, presumably due to the fact that e-tailing had the potential to make existing retail business models redundant (Wrigley et al., 2002b; Burt and Sparks, 2003). However, the degree of predicted changes varied significantly from the demise of 'physical market place', which could be replaced by the 'virtual market space', to much more restrained forecasts.

Doherty and Ellis-Chadwick (2010), reviewing literature on e-commerce, have found that early commentators predicted three main threats likely to affect the traditional UK high street in the foreseeable future. First, the elimination of a

middleman, as it was believed that manufacturers through the Internet could target their consumers directly and have a more intimate relationship with them. Second, some commentators (e.g. Doherty et al., 1999) speculated that 'virtual merchants' or 'pure play' retailers, with no established high-street presence could, by using e-commerce software, bypass traditional distributors, fundamentally changing the distribution channels. Third, the danger associated with the pressing need imposed on traditional retailers to develop a presence on the web in order to protect their market share. Becoming a '*brick and click*' enterprise raised some concerns amongst traditional retailers related to '*cannibalisation*' of their existing operations (Enders & Jelassi, 2000) and base cost inflation when operating dual channels (Alba et al., 1997). Such views were later castigated by Burt and Sparks' (2003, p.276) evaluation of online retailing, which stated '*short history of consumer Internet purchasing is littered with spectacular overestimates*'; however it is fair to make an observation that some studies have been far more sensible in their approach. For instance, Weltevreden (2007) investigating the implications of e-commerce, has attempted to establish the extent to which online retailing should be associated with substitution, complementarity, and modification of traditional retailing. Weltevreden has viewed substitution as the extent to which e-commerce replaces physical shopping such as Internet purchase replacing a trip to a physical store. The complementarity, according to the Dutch researcher, could be attributed to two different factors: enhancement and efficiency, but in his view, it was difficult to distinguish them in practice. Nevertheless, the former happens when e-tailing influences physical shopping e.g. online advertising provides incentives generating additional trips to the store, and the latter, when physical shopping is a necessary component of e-commerce such as picking up a product ordered online from the traditional store. The latter implication, suggested by Weltevreden, pertained to the extent to which e-tailing has modified traditional retailing or physical shopping. This could be attributed to a number of factors such as the duration and mode of transportation, or the destination of a shopping trip. A potential customer could have done some online research on the product, compared prices etc. before going to a physical store, and although the physical trip to the store still takes place, it would certainly be modified by the

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Internet. Likewise, BCSC (2000) has predicted that the impact of e-commerce on traditional retailers, to a large degree, would depend upon the extent to which e-tailing develops as a complimentary or substitution channel.

Furthermore, various academic and commercial researchers investigating impacts of e-commerce on traditional UK high street retailers have demonstrated that those would vary substantially amongst retail sectors (Burt and Sparks, 2003; Weltevreden, 2007). In particular, as Wrigley (2009) observed, some types of traditional retailers appeared to have increasingly suffered from the emergence of a new demographic group - the so-called 'digital generation' who had grown up in the Internet age. They have created new types of consumption referred to by Currah (2006) as the 'digital storm', which progressively have challenged the copyrights of music, film and publishing industries; in effect, having serious implications for the traditional retailers. Indeed, those claims have been confirmed by Weltevreden (2007) who has found that in the Netherlands a wide range of 'digitally supplemented' retail categories have been adversely affected by increasing internet sales, with the most evident including CDs, videos, DVDs, books, travel, computer hardware, software and second-hand items, often bought on online auctions. The trends recorded in Great Britain have been comparable (Burt and Sparks, 2003); however, given the leading position of the UK in online sales, ranging in 2011 between 12% and 14%, it could be argued that they have been even more robust. In consequence, the rapid expansion of online shopping has increasingly been viewed as a major cause of changes to the structure of traditional UK high streets. Indeed, once big names such as Borders, Zavvi, Thomas Cook or Game, have entirely withdrawn or substantially limited their presence in UK town centres only within the last two years. However, it should be highlighted that other retail categories such as DIY, groceries, clothing have observed a more diverse impact of online retailing (Burt and Sparks, 2003; Weltevreden, 2007), with complementarity or modification effects having been more relevant than the substitution outcome.

Finally, as the Internet has begun to be perceived as an integral part of retail fabric in the UK (RTT, 2011), the consideration of e-commerce impacts on the future of UK high streets was vital. Although it might be difficult to predict with any degree of certainty how the Internet will shape the destination of UK high streets, it is almost

certain that online sales will continue to grow in the foreseeable future. Commentators have been cautious in their predictions and seem to be somewhat unclear when it comes to long-term projections, on the one hand, predicting a growing threat to the viability of a traditional high street, especially with the recent economic crisis and the emerging reality of austerity Britain undoubtedly accelerating this process. This seems to be supported by the fact that both the retailers and the customers increasingly search for efficiency, rationalisation and cost savings (RTT, 2011). But on the other hand, recognising that shopping activity is multifaceted and led by different motives (Crewe, 2000) researchers have believed that the traditional high street provides additional benefits unavailable in virtual shopping, in particular, the sociable aspects associated with the leisure shopping making it a heart of towns and communities (Burt and Sparks, 2003; Portas, 2011).

3.2 Competition from out-of town retail developments and implementation of a 'town centre first' approach

3.2.1 'Free for all' approach and economic health of UK high streets

Much of the Government's planning policy advice on town centres reflects concern about the impact of out-of-town retail developments on the health of individual town centres. Out-of-town developments have largely resulted from the policies of Thatcher's Conservative Government who saw the town planning system as an impediment to economic development. They believed that speeding up and simplifying the planning system would lead to economic growth (Thornley, 1991). This 'loose' government approach, referred to by Guy (2007, p.32) as 'free for all', coupled with the consumer spending boom of the 1980 resulted in a 'third wave of decentralisation' (Schiller, 1986). Following a well-established trend in North America, this period was characterised by the rapid expansion of retail development of all types including large stores in out-of centre locations, retail parks and regional shopping centres. According to the new planning system regulations, such developments were likely to be rejected only in the case of the potential loss of Green Belt land, when there was a risk of creating traffic problems, and unacceptable levels of impact on existing town centres (URPI, 1990). Arguably, as the empirical evidence on the impacts of out-of-centre

developments on existing town centres was sparse or non-existent, such developments were likely to receive a planning consent. One of the main retail policy concepts of the 1980s was to encourage the 'balance' between town centre and out-of-centre retailing (Guy, 2007); however the fast and large growth in the latter type of developments began to raise considerable concerns about the economic health of UK high streets and town centres. In this context, a healthy and vibrant town centre became a central element of both national and local level retail planning regulations. The notion of 'vitality and viability', introduced in 1985 by a Parliamentary statement, became the key indicator of town centre performance and was used as a criterion for impact studies (Guy, 2007). A report commissioned by the DoE proposed separate definitions of vitality and viability. One reflected how busy the centre was at different times and in different parts and another referred to the ability of a centre to attract continuing investment (URBED, 1994). Furthermore, the 1993 PPG6 guidelines indicated that the defining criteria should include a mixture of quantitative measures such as commercial yield, pedestrian flow and diversity of uses and qualitative measures including the physical structure of a centre or perception of safety.

Nevertheless, as Guy (2007, p.57) claims *'there was clear evidence of political dogma affecting retail planning policy'* as *'...conservative antagonism towards local authority planning practice was also a factor'*. Indeed, the private sector was expected by central government to take the initiative, within broad planning constraints, however, this was unacceptable to many public sector bodies and commentators who believed that such an approach had mainly benefited affluent 'car borne' shoppers rather than the whole society. As concerns about the economic health of UK town centres grew, an additional evidence of impacts of out-of-centre developments on the existing town centres became available. Several studies, which investigated retail parks (Bromley and Thomas, 1988; Guy, 2000), regional shopping centres (Rowley, 1993) and large 'one-stop' supermarkets (DETR, 1998), concluded that such developments became powerful competitors to the traditional high street. By the early 1990s, it became clear that a shift in national retail planning policy towards town centres support was increasingly needed and would have been welcomed by local communities and planning authorities.

3.2.2 'Town centres first' decade – the impacts of regulatory tightening

Following the 'laissez-faire' approach to retail planning policy, which had resulted in the rapid expansion of out-of-town developments, the new decade of the 1990's saw a gradual reversal from that system. Initially, sustainability and regeneration was introduced to the agenda and then amendment of the Planning and Compensation Act gave more power to the local planning authorities in terms of land designations. However, it was the 1993 PPG6, that in response to the adopted 'sustainability agenda', had primarily emphasised the benefits of developments in town centres, whilst seeking a 'balance' between in-centre and out-of-centre developments. In particular, it encouraged local authorities to enhance the 'vitality and viability' of town centres by promoting the 'diversification of uses in the town centre as a whole' and ensuring easy access to shopping areas. Moreover, the 1993 PPG6 defined the edge-of-centre as a preferable location for foodstores and provided criteria for evaluating the impacts of proposed development on town centres. Although the out-of-centre locations were more suitable for large-format developments and retail parks, this clause was removed by later guidance, strengthening the 'town centres first' approach. Although it was widely criticised for not doing enough to protect town centres, it was not until 1996, that the revised version of PPG6 was published, which eventually prioritised the 'vitality and viability' of UK town centres. One of the most significant changes introduced by the 1996 amendment to PPG6 was the adoption of the so-called 'sequential test'. This test essentially privileged retail development within town centres, followed by edge-of-centre, district and local centre sites and only as a last resort the out-of-centre locations that were accessible by a choice of means of public transport (Wrigley et al., 2002a). Other important changes included detailed instructions on the preparation of development plans in retail policies and a requirement for impact assessment, which had to be submitted with planning applications for out-of-centre large developments of above 2500 sq m (Guy, 2007). Moreover, the new guidance encouraged local authorities to draw up a traffic management strategy to compete effectively with out-of-centre developments, defined the facilities that should be present in district and local centres and imposed the requirement of monitoring changes in town centres.

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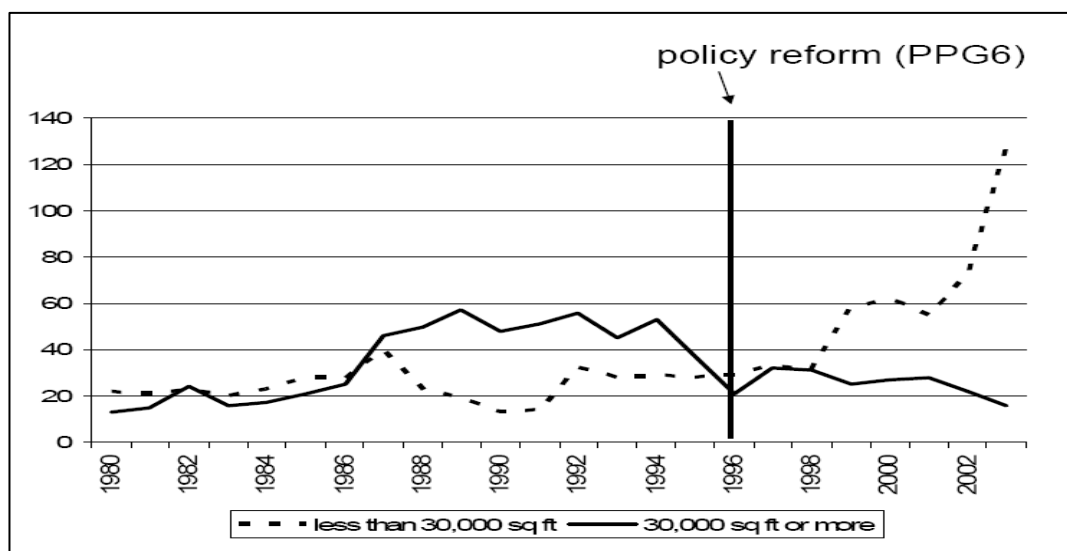
Subsequently, as a result of a High Court judgement in 1998, developers applying for planning permission for 'out-of-centre' development were required to show there was a 'need' for additional retail space and that there were no central locations that were suitable and available (Guy, 2007). Furthermore, a series of Ministerial speeches, clarifications statements, responses to Parliamentary Committee reports and so on, continued to tighten the policy, especially introducing a stricter 'class of goods' interpretation of the 'sequential test'. By the end of the 1990s, despite numerous attempts to shape the interpretation of PPG6 by the major retailers and their trade associations, obtaining planning permission for out-of-centre developments had become progressively more difficult (Adlard, 2001; Wrigley et al., 2002 and Wood et al., 2006). Moreover, with the election of a Labour Government in 1997 other issues such as 'social inclusion' and 'urban regeneration' came to prominence. The Department of Health expressed concern for residents living in areas with poor access to fresh food and other retail goods in so-called 'food deserts' (Wrigley, 2002). Simultaneously, in many parts of the UK, the implementation of the above agendas has been increasingly seen by retailers as a clever device to obtain planning permissions for large format developments. The Cardiff/Hiller Parker 2004 review of PPG6 confirmed these trends and highlighted areas for improvement – many of which were incorporated into a draft of updated planning guidance Policy Planning Statement 6 (PPS6). The new PPS6 was viewed by many as the start of a new positive and proactive style of planning, far more ambitious than PPG6 in its vision for planning town centres' (Hill, 2004). The principal objective of the draft PPS6, and then its final version published in 2005, was the promotion of 'vitality and viability' of UK town and district centres and the enhancement of consumer choice and further improvement of accessibility to shopping areas. Furthermore, wider government policy aims including tackling social exclusion, promoting economic growth and regeneration of deprived areas were incorporated into the planning framework (Guy, 2007). The Guidance also appeared to promise a more 'proactive' and responsive planning system to retailers i.e. by partial withdrawal of the 'class of goods' interpretation of the 'sequential test' and by strengthening the role of regional spatial strategies in determining location for major growth, including possible creation of new centres (Guy, 2007). However, some

commentators argued that despite many months of deliberation PPS6 retained a 'planned emphasis and a focus on town centres', with the assessment of 'need' and the 'sequential test' being the key tools (Findley and Sparks, 2005).

3.2.3 Effects of policy tightening on retail developments

One of the immediate effects of the 1996 PPG6 was the submission of impact statements, assessing predominantly the influence of the proposed out-of-centre developments of over 2500 sq m on vitality and viability of a nearby town/district centre. As a result, the development rate of large stores in out-of-centre location in the UK had slowed down substantially, falling from about 60-80 completions a year in the early 1990s to less than 40 in the year of 2000 (Guy, 2007). However, retail development has not disappeared, but in response, had adjusted to the constraints of the new post PPG6 era in various ways including more flexibility regarding both store formats and the sites they were willing to develop (Wrigley, 2010a). Firstly, the average size of retail development began to fall in the late 1990s and as Figure 3.1 shows the number of 'policy friendly' stores mainly located in-town or edge-of-town centres increased substantially.

Figure 3.1: Store growth in post-planning regulatory tightening, Griffith and Harmgart (2008)



Another response of retailers was to maximise the potential of already existing stores in the capacity of store extensions or the so-called 'mezzanine floor loophole' as

such developments did not require any planning consents from local authorities (Wood et al, 2006; Wrigley, 2010). Both schemes were widely implemented until the amendment of Planning and Compulsory Purchase Act in 2004 and then the PPS6 that regulated such developments. Finally, the major retailers began to reconsider the potential of developing new stores on what previously had been regarded as marginal locations. Brownfield sites or those located in deprived council housing estates began to attract the attention of food retailers as they were exploring different ways of working *with the grain* of 'town centres first' policy (Wood et al., 2006; Wrigley, 2002; Guy, 2007). Moreover, Wrigley (2010a) argued that such an approach arose from public expectations regarding the link between corporate growth prospects and their social and community responsibilities including urban regeneration and social inclusion projects.

3.2.4 Retail-led urban regeneration programmes

The adoption of the urban regeneration agenda by major retailers, although by necessity, has led to a development of many partnership stores in neglected and deprived urban areas across the UK. The wider urban regeneration schemes take place for several reasons such as improving the appearance of the area and providing space for new or relocated economic activities (Guy, 2007). Most of these regeneration programmes have been based around partnership schemes involving major retailers and the local authority, employment agencies or community organisations. Since the late 1990s, such partnership-based urban regeneration schemes have become increasingly common, becoming larger and more complex over time (Wrigley, 2002; Guy, 2007). During the 1990s many Urban Development Agencies set up to encourage private sector investment into inner cities' derelict areas, used retail development as a device to 'kick-start' broader urban regeneration schemes (Wrigley et al., 2002a). An additional benefit of such partnership was that retailers were prepared either to purchase sites outright or offer far more money 'up front' than any other developer. An interesting example of such development took place in the former Cardiff Bay Development Corporation area where the retail component was the first to be developed on site leading to further office, and residential development. These include

The Penarth Haven development where Tesco opened its store in 1994 and The Ferry Road development of a large Asda Store and 11 retail warehouses on a former gas and oil storage site.

In effect, during the 1990s retailers had developed inner and outer city 'brownfields' far more than is often realised. For instance, Peter Sitch from Safeway (quoted in Willis, 2001) claimed that 40 per cent of its stores built in the 1990s (some 250 developments) were in fact, built on 'brownfields'. Although no comprehensive data are available for the whole UK, some indication is provided by the Scottish Government statistics which shows that out of 30 new retail developments approved by local authorities in out of centre locations 22 were 'brownfield' schemes, adding up to 136 000 square meters (Wrigley *et al.*, 2002). In the late 1990s, however one type of regeneration-based development emerged to be increasingly important. It was the redevelopment of purpose built district shopping centres, built mainly by local authorities in the 1960s-70s. Often poorly maintained and composed mainly of small shops, such centres already approaching the end of their economic life cycle were characterised by high vacancy rates and often attracted vandalism. Thus, the offer of redevelopment by the private sector, often food retailers, was attractive to local authorities. Such regeneration schemes would normally offer various advantages to local authorities; in addition to financial profit of selling the land, the area physically would be more attractive, safer and the investor could provide employment and training opportunities for local residents, particularly the long-term unemployed. It was an arrangement, which became increasingly attractive to the major retailers as it offered the prospective of building very large stores in the 'sequential test era' of very restricted planning regulation (Wrigley, 2002). Indeed, Tesco, Asda and Kingfisher became progressively more involved in the urban regeneration agenda (although other retailers e.g. Sainsbury in Castle Vale, Birmingham also participated). Asda opened its partnership store in Hulme, Manchester in 1998 and followed with the announcement of the development of another such store in the east Manchester redevelopment area.

However, it was Tesco that adopted the most extensive regeneration programme in terms of retail-led urban regeneration (DTZ, BITC, BCSC, 2008). The corporation entered into partnership with public sector agencies including local authorities,

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training providers, the Government's Employment Service and Basic Skills Agency as well as local community representatives (Guy, 2007).

Table 3.1: Regeneration partnership stores in the UK, after Cudworth (2009)

STORE	YEAR OPENED	FLOOR AREA
Tesco Seacroft, Leeds	2000	97 000 sq ft
Tesco Springburn, Glasgow	2001	90 000 sq ft
Tesco Dragonville, Durham	2001	69 000 sq ft
Tesco Alloa, Clackmannanshire	2002	55 000 sq ft
Tesco Beckton, London	2002	100 000 sq ft
Tesco Shettleston, Glasgow,	2003	50 000 sq ft
Tesco Long Eaton, Nottingham	2004	108 000 sq ft
Tesco Stockport, Manchester	2004	120 000 sq ft
Tesco Dumfries, Dumfriesshire	2004	102 000 sq ft
Tesco Pollock, Glasgow	2006	85 000 sq ft
Tesco Wick, Caithness	2006	50 000 sq ft
Tesco Failsworth, Manchester	2007	88 000 sq ft
Tesco Cradley Heath, Birmingham	2007	60 000 sq ft
Tesco Deysbrook, Liverpool	2007	36 000 sq ft
Tesco Haydock, Liverpool	2007	37 000 sq ft
Tesco Rutherglen, Glasgow	2007	80 000 sq ft
Tesco Maesteg, South Wales,	2007	56 000 sq ft
Tesco Aston, Birmingham	2008	80 000 sq ft
Tesco Cheetham Hill, Manchester	2008	52 000 sq ft
Tesco Gorton, Manchester	2008	88 000 sq ft
Tesco Orpington, London	2009	80 700 sq ft
Asda Llanelli, South Wales	1997	64 000 sq ft
Asda, Hulme, Manchester	1998	59 100 sq ft
Asda Widnes, Manchester	2003	47 000 sq ft
Asda Huyton, Liverpool	2004	147 000 sq ft
Asda Milton Keynes, Northamptonshire	2005	110 000 sq ft
Asda Romford, London	2006	50 000 sq ft
Asda Hounslow, London	2006	43 000 sq ft
Asda Feltham, London	2006	45 000 sq ft
Asda Bootle, Liverpool	2006	40 000 sq ft
Morrisons Alloa, Clackmannanshire	2007	30 000 sq ft
Sainsbury's Castle Vale, Birmingham	2000	64 000 sq ft
Sainsbury's Shaw, Oldham	2008	35 500 Sq ft

In 2000, they appointed a 'Regeneration Manager' and increasingly saw the social exclusion agenda with their own property programme as a 'win-win' for communities, customer and business (Tesco, 2005; 2). By 2004, Tesco had opened 11 large regeneration partnership stores, in 2005 a further six stores and had plans for a dozen

more in the following years. Table 3.1 provides the aggregated data of the urban regeneration partnership stores developed by major retailers by the end of the 2000s.

Less research has been conducted on the contribution of non-food retailers to urban regeneration programmes. However, it is widely known that they too actively took part in such schemes. In the year 2000, B&Q began working with local government regeneration programmes which focused on areas in need of development (Kingsfisher, 2002: 24). In addition, Ikea has participated in several of these schemes to support the planning applications for its large stores.

Overall, retail-led regeneration projects appeared to be encouraged by retail policy and widely supported by local authorities. Such projects were not required to prove 'need' nor to submit prediction of impacts with the planning application. Lacking many other options of developing large stores, retailers increasingly came to see inner and outer city brownfields as 'attractive sites' for new developments. However, in response to the 'town centre first' approach, retailers have incorporated the social inclusion agenda too.

3.2.5 Social exclusion and the underserved communities agenda

The social exclusion agenda, viewed in the context of tightening retail regulations, certainly had the capacity to re-shape the configurations of UK town centres and high streets. It became a key issue after the election of the Labour Government in 1997, giving much attention to poor access of deprived areas to fresh food and other retail goods. Social exclusion happens when people or whole areas suffer from a combination of linked problems such as unemployment, poor skills, low incomes, unfair discrimination, poor housing, high crime, bad health or family breakdown (ODPM, 2004: 4). Soon after the election, a Social Exclusion Unit has set up within the Cabinet Office and in 1998 presented to Parliament its action report '*National Strategy for Neighbourhood Renewal*'. Based on academic and government research the report highlighted the increasingly polarised position of the poorest neighbourhoods in Britain showing that between 1979 and 1995; net income of the richest tenth of population had grown by 68%, whilst those of the bottom tenth had fallen by 8% (Speak and Graham 1999; Wrigley, 2002). In response to the report, the national

Chapter 3

strategy for neighbourhood renewal proposed 18 action teams working on fast track projects to develop policy solutions and an action plan by 2001. One of the teams involved in this process, PAT 13, developed a strategy for improving access to shopping in poor neighbourhoods. Their views were influenced by the earlier work of the Low Income Project Team, which had described the nutrition and public health problems of the areas with poor retail access. The term 'food deserts' was coined for such areas by the Department of Health Nutrition Task Force (Beaumont et al., 1995) and soon caught the imagination of both commentators and those involved in policy planning. It was soon established that 'food deserts' would typically describe urban areas which lack adequate food shopping facilities within 500m from people's homes. Poor levels of access to sources of good quality and healthy foods such as fruit and vegetables was seen as a factor that had been exacerbating the poor levels of nutrition frequently observed in areas of social deprivation (Wrigley et al., 2002a, Guy, 2007). The promotion of tackling social exclusion and addressing the problem of people living in 'food deserts' arose from the Cabinet office and the Department of Health. However, the first recognition of the issue of underserved communities as a new criterion for retail planning policy (Wrigley, 2002) was in a speech of Planning Minister Nick Raynsford (2000) who said that *'tackling social exclusion is the new main task for retail planning policy'*.

Large retailers rapidly recognised that there were development opportunities for them, especially if they could position their stores as regeneration investment for deprived communities. Retailers argued that not only would such stores provide better access to food in such areas, improving diet and health, but they could also act as a catalyst for economic development and enhance local employment skills (Guy 2004; Cummins et al., 2005; Wood et al., 2006).

However, it became clear at that stage that such retail development proposals claiming the contribution they could make to reduce social exclusion entirely lacked scientific evidence. Firstly, the study by Clarke et al., (2002) by identifying areas of poor access to food retailing in Leeds/Bradford and Cardiff provided a benchmark against which food deserts could be identified, then studies commissioned by the ESRC/J Sainsbury and the Department of Health examined the nature of 'food deserts' in

various cities across the UK. It became clear that overall the diet in deprived areas was relatively poor, including low fresh fruit and vegetable consumption (Guy, 2007). Importantly, the Seacroft study, examining the relationships between poor food accessibility and occurrence of unhealthy diets, has shown the increase in intake of fresh fruit and vegetables amongst those shoppers who switched to the newly opened Tesco store (Wrigley et al., 2002a). A similar study conducted in Glasgow has identified only a very weak statistical relationship between those two factors mainly due to the specifics of the study design (Cummins et al., 2005); however, it reported other positive impacts associated with the opening of a large foodstore in a deprived area. These included not only significantly improved food provision and increase of physical and economic accessibility, but also wider regeneration effects and decreasing vacancy rates. Additionally both studies found that a large proportion of shoppers from the deprived areas were using the new stores and walking as a means of transport has significantly increased. Nevertheless, despite the reported benefits, it has become explicit that the issue of food poverty is a multi-dimensional one. Guy (2007) argues that physical access to good quality food at a reasonable price is only a minor factor decreasing food poverty in deprived areas and should rather be associated with a combination of demographic and socio-economic factors such as attitudes to diet and nutrition and individual life style including amount of exercise and alcohol and tobacco consumption. Although many commentators castigated such developments as merely 'clever devices to get stores built and passed by planners' (The Scotsman, 20 September 2000), major retailers have managed to mount a strong argument for participation in such schemes (Wood et al., 2006). The argument was mainly based on the benefits that large retailers could offer to the deprived communities which included the redevelopment of an existing but often derelict local retail centre and the employment of the local workforce.

3.3 Convenience culture and entry of corporate retailers into the small convenience store sector

The dominant role of convenience in western culture has emerged as increasingly important at the turn of 20th and 21st century (Buckley et al., 2007). This trend can be

closely associated with technological advancements, which have altered household structures, social norms and values. According to Buckley et al., (2007) such alteration has resulted in shifting demand for all types of consumer goods including food, with the role of convenience emerging as increasingly important. Despite the acknowledged importance, convenience has attracted relatively little attention in the literature, and although some conceptualisation efforts are known, the attempts to develop comprehensive measures of it have been limited (Seiders et al., 2007). Historically, the notion of 'convenience oriented consumers' had attracted the attention of some researchers (e.g. Yale and Venkatesh, 1986; Morganosky 1986), but afterwards, it became clear that different customer factors such as employment status or affluence produce variations of convenience orientation rather than 'convenience oriented consumer' *per se* (Brown and McEnally, 1993). One of the first aspects considered by convenience conceptualisation included time and effort; in particular a number of researchers (e.g. Berry et al., 2002; Seiders et al., 2007; Buckley et al., 2007) viewed the lack of time and/or energy as the drives for convenience. In relation to those two elements Berry et al., (2002) developed a model of service convenience utilising five dimensions: purchase decision, time and effort associated with access, transaction, benefit and finally the post-benefit convenience. Furthermore, Dawes and Rowley, (2009) implied that convenience may operate at two different levels: a) at product attribute level, where convenience is viewed as an integral part of the offered good, such as assorted ingredients in a ready meal and b) at consumer segmentation level which accounts for additional variables such as spatial, psychological, sociological, situational and philosophical factors, which are responsible for a decrease or increase in consumer preference for convenience.

The pioneering food-related lifestyle research was conducted by The Centre for Research on Consumer Relations in the Food Sector in Denmark, (Brunsø, et al., 1996) and although the concept was still somewhat vague, they have established that a food related lifestyle comprises a set of 'declarative and procedural characteristics', which reflect the values of the individuals. Likewise, Reimers and Clulow, (2004) who investigated attitudes related to food convenience found that it should be associated with a wide range of factors responsible on the one hand for changing customer

behaviour such as rising levels of consumer awareness or affluence, and on the other hand, for shifting social trends towards increasingly individualistic lifestyles and the growth of non-traditional households. Moreover, other demographic factors such as longer working hours, increasing leisure orientation and the changing role of women leading to an increase in the number of male food shoppers, were found significant in the formation of convenience culture. More recently, Buckley et al., (2007) examining food-related lifestyle mechanisms, have identified comprehensive measures associated with the convenience lifestyle and determined additional forces driving the demand for convenience. These included an ageing population, changing household structure, healthy eating, breakdown of traditional mealtimes and value for money.

This study seeks the nexus between shifting consumer patterns responsible for the rise of convenience culture and the entry of corporate foodstore retailers into the small convenience store market. Wrigley, (2010) defines 'convenience culture', as a rising demand for local stores, normally within easy walking distance, that can essentially offer access to good quality fresh produce associated with superstores. This relatively new trend in consumer culture can be viewed as a major force driving the expansion of large grocery retailers into the small convenience store sector. Wrigley, (2010) also claims that convenience stores are often seen as a 'choice edited' version of the larger format superstores, thus have the potential to generate large footfall, mainly from local catchments. Since shopping in convenience stores involves less travel and shopping time commitment, it has become an attractive option to many types of households. According to Mintel (2008) convenience stores are not serving the main shopping needs, however, they play an important role during the week, predominantly as 'top up' and 'on-the-move' shopping. Mintel's report also claims that over half of all adults from the immediate catchment area shop in local convenience stores at least once a week, with the most frequent users being under 35s.

At this stage, it is important to consider two further issues pertaining to the patronage behaviour and the importance of the small convenience store sector to the corporate retailers. First, portrays consumer's expectation in terms of the local grocery store and identifies the drivers of the store choice. Although several studies have shown that those expectations can vary substantially, the general perspective

offered by the Office of Fair Trading (2006), views consumer's choice of food store as a derivative of weighing factors such as convenience, price and loyalty to a particular store. More specifically, Pan and Zinkhan (2006) found that the convenience factors normally associated with large multiple retailers, in particular, the accurate, speedy checkout, uncluttered aisles and convenient location played a vital role when it comes to store choice and patronage behaviour. The other important factors relate to physical aspects of a store and customer service, in particular the reliability and standard procedures in solving problems such as return of purchased goods (Huang, 2009; George (2005).

Second, attempts to answer the question why a 'top up' shopping was so important to the corporate retailers and has resulted in a rapid expansion of the major food retailers into the small convenience store sector. One reason given by Moeller, (2009) views the entry of major retailers into convenience store sector as an essential aspect for remaining competitive. However, some commentators suggested that there were other significant reasons for the corporate retailers to enter the convenience store sector. Wrigley et al., (2010) and Wood et al., (2010) argued that the Competition Commission (2000, 2003, 2007) has provided a shelter for such developments interpreting the wider UK grocery market as a combination of two separate sectors, the 'one stop', which was highly regulated and the secondary/convenience store sector, which was highly fragmented and neglected by the large retailers.

Despite the protests of various NGOs such as the Association of Convenience Stores (ACS) the corporate retailers expanded fast into the small convenience store sector. Indeed, in 2000, the four largest supermarkets owned 54 convenience stores in the UK but, by 2005, this figure had risen to 1,306 (OFT, 2006). By the late 2000s, Tesco developed more than 650 'Express' stores and 500+ 'One Stop' branded units. This was largely due to the acquisition of 1215 T&S convenience stores in 2003 and the 45 outlets of London based chain Adminstores. Meanwhile, Sainsbury's has developed a portfolio of more than 300 'Local' stores, largely resulting from acquisitions of convenience stores from Jacksons and Bell in 2004.

The 'essential responsiveness' of large grocery retailers to the changing consumer culture became increasingly explicit. However, the changes in consumer culture are not even in the geographic terms as the demand (footfall) is driven by different factors for different types of retail centres. Some types of centres therefore, should be more attractive to a corporate investment than others, and it needs further investigation. In addition, a somewhat more philosophical question could be asked: which came first, convenience culture or a rise in convenience stores?

Other types of convenience stores such as symbol group and non-affiliated independent retailers have too recorded substantial increases in their store numbers. In fact, both the Competition Commission (2008) and Wrigley et al., (2009a) reported that in terms of unit numbers symbol group and independent retailers expanded faster than corporate retailers, with independent retailers having the biggest share of that increase. Nevertheless, the expansion of corporate retailers into the convenience store sector can be associated with the increase in standards amongst both symbol group and independent retailers as they become more competitive in fulfilling the raising consumer expectations (Competition Commission, 2006). Many independent retailers have joined various symbol groups, as in addition to the above reasons, they could also enjoy some benefits associated with being a part of a larger organisation such as lower purchase price or bigger distribution network. Such rapid increase in convenience store numbers has contributed largely to the growth in sales. In 2010, sales in convenience stores represented around 21% of total grocery retail sales. Effectively, convenience stores have been established as one of the most buoyant sectors of food retailing, with the market worth £32.1 billion in 2010 and the overall number of outlets in the UK at 48,410 (IGD, 2010).

3.4 Geography of demand

3.4.1 Shifting consumer behaviour and spatial trends

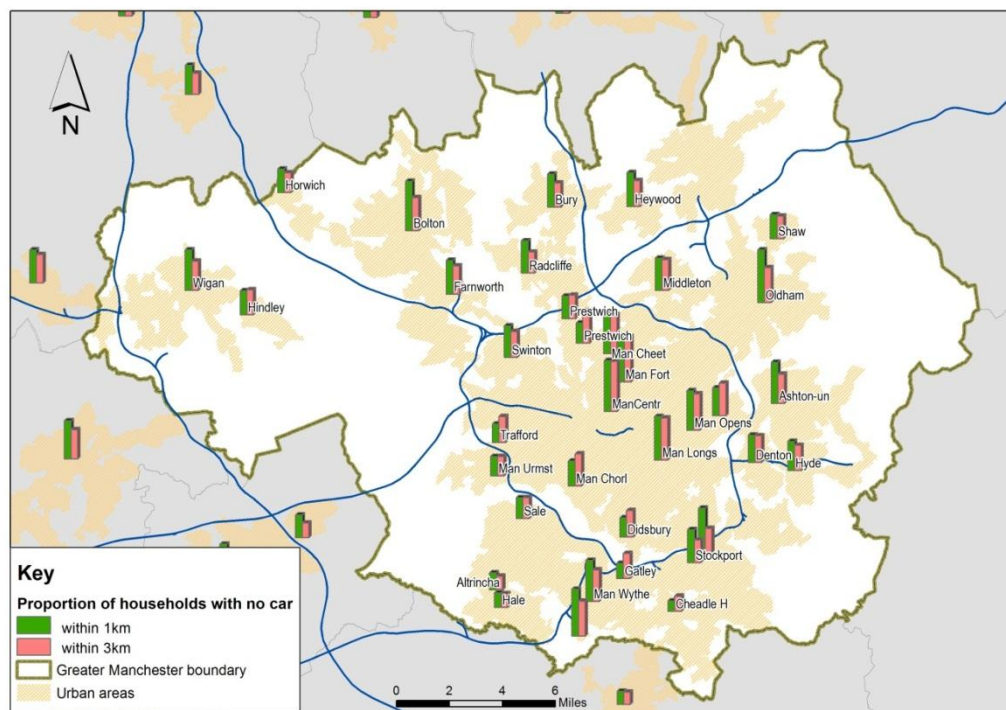
The forces impacting the performance of UK high streets and town centres discussed above should be also perceived in the context of demand for retail and services facilities and its geographical variation. Birkin et al., (2002) claim that demand

is a lifeblood of the retail industry. Consumers, in particular their choices and behaviour, are fundamental drivers of the demand and therefore are closely related to evolution of the retail landscape. As mentioned in the section on convenience culture, consumer's behaviour and attitudes are constantly changing, which also has important implications to the retailers, town centre managers and policy makers.

There are several widely recognised indicators of that shift and importantly they all vary spatially and therefore are directly related to the geography of demand for retail facilities. The first and perhaps the most important factor is related to the increased mobility of consumers. As the car ownership has increased substantially over last few decades, consumers spend more time travelling to work or shops. In some ways, the retail system itself was a driver for an increasing use of cars, with most prominent examples being the rise of out of centre retail developments and regional shopping centres (Guy, 2004). Despite numerous attempts of policy makers to revitalise British town centres, seen predominantly in the planning regime promoting the 'town centre first' approach, the out of centre retail developments have not vanished. Rather, they have performed well, largely due to the car-borne shoppers, who often take advantage of the free parking space offered (Guy, 2007). Nevertheless, the car ownership varies spatially and across different social groups, for instance the ratio of cars per household in the deprived areas on the fringe of a larger city would be substantially lower than that in the more affluent rural areas. Figure 3.2, showing the spatial variability in the proportion of households with no car within Greater Manchester, indicates that the percentage of such households for some deprived areas e.g. Manchester Wythenshawe or Longshaw was twice as high as in the affluent areas of Altrincham or Cheadle Hulme. Second important factor relates to the overall and long term rise in disposable income, in particular during the period of prosperity. This was partially linked to the restructuring of labour market across the Western countries with the most common trends being a decline in manufacturing and manual skilled jobs and growth in the service economy (Birkin et al., 2002). Importantly, this trend was not uniform and has led to an increasing polarisation between the rich and poor. In terms of geography, this was visible at both regional and local scales. The previously heavy industrialised regions such as the North East, North West or the Midlands have seen

large increases in unemployment, which ultimately translates into a decline in disposable income (Dorling, 2010). However, within the last decade those regions have transformed their labour markets substantially, with the general tendency to growth in the public sector employment. Such a model was not sustainable which was exposed by the economic crisis and austerity period when the vulnerability of a heavy dependence of those regions on the public sector jobs was exposed by the spending cuts (Fingleton et al., 2012), Wrigley and Dolega, 2011).

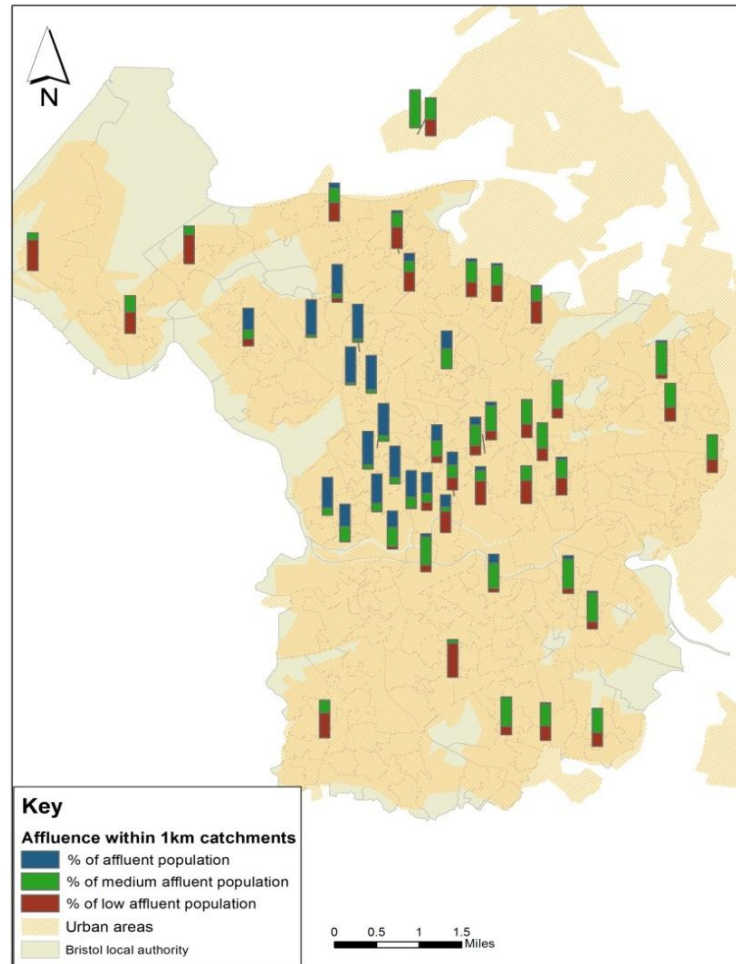
Figure 3.2: Proportion of households with no car within 1km and 3km catchment areas of analysed town centres in Greater Manchester



The service economy in the UK, on the other hand, was mainly driven by the prosperous Greater London and the South East. The southern regions, although affected to a degree by the downfall in housing market and soaring financial sector, were still performing better than the northern regions. That geographical split has also the capacity to produce regional, sub-regional variations both in levels of consumer confidence and in levels of demand across the immediate catchment areas of UK town centres and high streets. It could be argued that even more important from the demand for retail spaces view are the local variations. One of the key indicators for estimating potential demand for the retail spaces is the affluence of a local area and its

micro variations. Figure 3.3, showing the affluence in Bristol urban area, indicates that there is a significant spatial variability at the intra-urban level.

Figure 3.3: Spatial variability of affluence in Bristol urban area



The geography of demand has profound implications for the retailers, who have increasingly endeavour to understand the geography of income (Birkin et al., 2002). There is a consensus that understanding the evolving geodemographics of local catchments responsible for the change in consumer behaviour and their spatial variation is crucial to the viability of both retail centres and retailers themselves.

3.4.2 Consumer characteristics and catchment areas

It has been long argued that the viability of a retail centre or a store depends to a great extent on their capability to satisfy the expectations of the consumers that live in the catchment area (Wood et al., 2010). In terms of understanding the consumers of a

particular catchment area there are two widely recognised components, the quantity and quality (Gonzales-Benito and Gonzales-Benito, 2005). In terms of the quantity, in other words the market size, population growth/decline, its density and redistribution are important attributes of the demand prediction process. In the UK, some areas such as Liverpool, Manchester or the West Midlands have seen population decline while Essex, Hampshire or Cambridgeshire have witnessed substantial increases in population (Birkin et al., 2002). These trends certainly have implications for the long-term demand predictions and viability of some centres or stores, in particular those located in the areas with negative projected population growth. Conversely, in the case of large population growth retailers explore the possibility of exploiting the potential arising in those areas and therefore often consider them when choosing new sites. Indeed, large retailers constantly monitor those trends and reassess the viability of their stores in that context.

Arguably, even more important is the understanding of the qualitative aspects of a consumer such as age profile, income, spending habits, household size etc. As the life expectancy increases, the growing elderly population is increasingly active and now form 'a substantial consumer niche in its own right' (Birkin et al., 2002, p.13). Although that general trend has been well documented in the UK and other developed countries, it is worth mentioning that it is far from being geographically uniform. Some areas such as coastal towns or the so-called 'cathedral cities' are much more attractive to this type of consumers than the large urban areas, city centres etc. There is an agreement amongst researchers that in the areas dominated by the elderly the demand for items such as fashion, leisure, entertainment and sport-related products will be much lower than in those areas where young adults predominantly dwell. On the other hand, the middle-to-old-aged adults will increase the demand for financial services, holidays, home furniture and appliances (Birkin et al., 2002).

Also consumers' expenditure patterns have changed over last two decades, especially in the developed economies. In the period of prosperity, UK consumers spent smaller percentage of their income on food, fuel and clothing; however some commentators claim that this trend has been interrupted by the current economic crisis. Income is a crucial factor driving expenditure; therefore the decline in disposable

income combined with the bottom low consumer confidence, recorded during the economic crisis, subdued the growth in expenditure and shifted the spending patterns observed in the period of prosperity (Wrigley and Dolega, 2011). What seems to be almost an undisturbed trend is that consumers are still spending more of their income on services and leisure. It is often associated with hedonic/fun shopping which provides the 'unique experience' (Moeller et al., 2009), however this can vary considerably depending on the type of consumer. Another important change in consumer lifestyle is the rapidly decreasing average household size. This has some implications to the retailers; in particular the rapid increase of single households and non-married couples indicates a growth in the demand for household appliances, residential services and convenience (Birkin et al., 2002). As all these changes vary for different types of consumers, the spatial aspect of consumer behaviour should not be underestimated. Understanding both overall changes in demand for retail spaces and goods and their spatial variations is the key aspect for a viable location of a new store.

3.4.3 Demand and supply factors - location techniques

Fundamental to the viability of a retail centre is right balance between the demand for retail goods and services created by local catchment and supply of retail/service spaces offered by the centre. From a retailer's point of view, the assessment of a new location is based on two key factors: a) market factors, relating to the potential of a particular location in attracting consumers and therefore enhancing sales and b) operational factors, relating to the effort involved in opening and operating the store. In a somewhat simplified view, the former refer to the ability to generate income, and the latter refer to the costs involved (Gonzalez-Benito and Gonzalez-Benito, 2005). Moreover, there is growing evidence that location of a store should also be assessed in relation to the location of other complementary facilities such as other retail stores, post offices, banks, libraries, leisure facilities etc. (Wood, 2010; Findlay and Sparks, 2009). These complementary facilities are often associated with generating additional footfall partially explained by the mechanism of linked trips (Wrigley et al., 2009b), where consumers are likely to combine different destinations and purposes. Therefore it could be argued that the complementary facilities are helpful in retaining the

expenditure within a particular retail centre which otherwise would have leaked to neighbouring and more attractive centres that simply provided those facilities (Popkowski Leszczyc et al., 2004; Wrigley et al., 2009b). Besides, some shopping needs arise when consumers are far from their residence, during leisure time or at the workplace. This is an important constituent of the so-called 'convenience culture' and has become one of the key factors increasingly considered by the store location analysts.

The attractiveness of a retail location also depends on the location of the competitors. A location close to competitors may imply the overlapping of catchment areas and consequently, resulting in the so-called cannibalisation of a market share (Ingene & Lusch 1981).

Another important demand and supply factor is the role of a hierarchy of retail centres. Centres towards the lower end of the scale tend to cater for day-to-day purchases of regularly consumed items such as food, grocery or regularly consumed household items. Conversely, sub-regional and regional centres cater normally for a broader range of goods and services that encapsulate both food and non-food retail goods. They tend to be focussed on higher order discretionary purchases including diverse household goods and clothing, bulky goods and leisure (Dennis et al, 2002).

Essentially, retail location decisions, taking into account factors responsible for creating local demand, existing supply and their spatial variations, became very complex. They can be managed at different levels of geographic aggregation: regional, sub-regional, metropolitan, intra-urban area or a specific site. Although there always will be an element of intuition, the techniques of site selection have become increasingly complex. Specifically, the large food retailers have developed highly sophisticated and data rich-methods of store locations, which rely on a remarkably accurate revenue forecasting (Birkin et al., 2002). Typically such approaches implement detailed geo-demographic data and focus on modelling the extensive catchments of large stores, predominantly over 10,000 Sq Feet in size (Wood, 2006). The main techniques of store location and forecasting sales used by the large corporate retailers are the gravity modelling of retail expenditure, analogue store models and regression analyses (Benoit and Clarke, 1997).

Gravity modelling and GIS techniques

Gravitational models apply the Newtonian laws of physics to the modelling of shopper behaviour based on the influence and the attractiveness of the store and the distance between the shopper's home and the store. They provide an approximate store trade area by considering the spatial distribution of all locations, including competitors, and evaluating each locations relative attractiveness (Rogers, 1984). The probability of a consumer using a given store declines at an exponential rate as travel time or in other words distance increases. Initially, although this modelling technique was useable in theory it was far less successful in practice (Openshaw, 1973). However, the development of the information technology and in particular the advancement of Geographical Information Systems (GIS) has considerably improved the effectiveness of this method (Wood, 2006). The spatial representation of geo-demographic and retail data provided by GIS is very powerful and based 'on a crossing of digitalized cartography in addition to relational databases' (Mendes and Themido, 2004, p. 14) allows non-GIS specialists to quickly interpret and understand complex geo-demographic patterns and trends.

The implementation of GIS methodology has, for example, allowed site location analysts to base their models on 'drivetime' rather than simple Euclidean distance, which is likely to misrepresent the real world. Although GIS has become increasingly popular amongst retailers it needs to be pointed out that there are some limitations to that technique. Some of the main issues relate to defining the catchment areas and adequate treatment of the competitors (Birkin et al., 2002). In terms of the catchment areas, although the drivetime is more accurate than the straight line distance, there is an issue of giving equal weight to all households within the buffered zone, and equal costumer drawing power in all directions. What it means in practice, is that the household located very close to the store are given the same patronage as those located few miles away. In terms of the competitors within the catchment areas, it is very challenging task to estimate accurately the share of revenue for a new store without modelling of the complex spatial interactions in that catchment.

Analogue stores approach

The analogue store approach is a popular technique for site location in the UK. It is 'directly associated with the historical sales performances of existing stores' (Drummey, 1984, p. 281) and utilised to forecast the potential sales and results of spatial interaction models (Clarke et al., 2003). The technique evaluates the potential site 'by drawing comparisons (or analogies) with other stores in the corporate chain that are alike in physical, locational and trade area circumstances' (Birkin et al., 2002, p. 137).

Typically, by using regression or descriptive analyses, it measures market share by distance from the store and is underpinned by data from food spend levels, loyalty cards or customer surveys (Rogers and Green, 1979). In addition to store location, this method is also used for store formatting. This is potentially an important decision, as similar size town centres or local centres may require different formats, depending on their geo-demographic characteristics (Birkin et al., 2002). The technique is largely dependent on the experience and judgment of a store location analyst but also the extent and variability of the store network is important. Wood (2006) pointed out that on the one hand a retailer with a few examples of a particular format in its portfolio may suffer from a lack of analogous stores from which to choose and on the other hand; a retailer with an extensive store base may encounter a difficult task of finding appropriate analogue stores. Another problem with this technique relates to the fact the performance of similar stores with comparable geo-demographics may vary geographically or the analogue stores may over/under perform at a time of data collection.

Regression modelling

Another simple but robust technique for location assessment and estimating the demand for retail facilities is regression modelling. Both linear and logistic regressions are used to predict the revenue of a single store as well as the entire network (Birkin et al., 2002). In general, regression model establishes a number of independent variables that explain the variance in the dependent variable, which in the case of a retail store it would typically be the turnover. The usual independent variables include geo-

demographic data such as age profile, socio-economic status, market size related data or information on competition stores within the catchment area. Although regression analyses are more objective and sophisticated than more manual analogue store techniques Birkin et al. (2002) identify several weaknesses. Most important limitation pertains to the inability of regression models to handle effectively complex spatial interactions or customer flows. They simply do not account for the processes generating the footfall or are responsible for customer flows. Another important weakness they highlighted was that regression models evaluate sites in isolation with no consideration of the impacts from competitor or the company's own network stores. Finally, they pointed out the problem with a feature of the regression which assumes that the explanatory variables in the model are independent of each other and uncorrelated. When modelling a store turnover, often this is not the case as several variables are more than likely to be correlated to an extent; the issue referred to as the multicollinearity (Ghosh and McLafferty, 1987). For instance, independent variables such as a floorspace and a number of car park spaces, although seemed to be physically unrelated, they are likely to be correlated. This can lead to unreliable estimates or serious misinterpretation of the results, which in effect may be linked to a limited understanding of certain catchment areas, depending on the business experience of the location analyst.

3.4.4 Available data sources

Clearly, all the above methods are only as good as the data that they employ; therefore estimating the demand for retail and services facilities at different spatial and temporal levels is of an uppermost importance. Measuring the demand at a small Outputs Areas level provides the retailers with a number of benefits as the detailed data on neighbourhoods can be aggregated into a store or shopping centre catchment areas, or even the whole regions. Although the major retailers collect their own data, predominantly derived from the customers' loyalty cards, Clarke and Rowley (1995, p. 5) claim that they must 'proactively seek strategies which allow the generation of additional datasets which support effective monitoring of customer activity'. There are a number of external data supplying agencies providing geo-demographic data

including CACI (ACORN), Acxiom (Personcix) and Experian (MOSAIC) (Gonzalez-Benito and Gonzalez-Benito, 2005). This data typically provides consumer segmentation in terms of lifestyle, family structure, age profile and income level and can be utilised in combination with data from the Expenditure & Food Survey (EFS) from National Statistics, the National Census, NOMIS/employment statistics, dwelling stock figures, house price changes, business rates etc. (Wood, 2006). Ultimately, GIS techniques can be used as a platform combining some or all the above sources into data rich catchment maps, which in turn are crucial to 'analysing sites based on drivetime, demographic as well as psychodemographic variables, competitive information, and customer information' (Mendes and Themido, 2004, p. 14). In doing so, the use of GIS and gravity models allows more precise and accurate decisions to be made which becomes more important as the number of available sites reduces and those remaining are all the more marginal and complex (Byrom et al., 2001).

Loyalty cards

One of the most popular sources of information on consumer's dynamics, which presents opportunities for understanding customer behaviour but is also beneficial to a decision making on site location, is the loyalty card (Wood, 2006; Ziliani and Bellini, 2004). In essence, major retailers in return for some sort of discount are entitled to collect valuable data on their customers such as, favourite items, average spend, frequency of shopping etc. Using the raw data, retail analysts can determine consumer's expenditure patterns, geographical discrepancies, as well as to analyse the shift in consumer behaviour. Wood (2006) pointed out that there a number of unique benefits loyalty card data provide to the retailers: a) it allows a precise understanding of customer lifestyles and their requirements e.g. decisions on product range within certain catchment, b) it permits a more comprehensive analysis of the competitors, store openings e.g. an assessment of an impact on sales cannibalisation and c) by utilising GIS techniques they allow a comprehensive scope of 'gaps' in the store portfolio and subsequent decision to supplement with additional units. The main challenge with loyalty card information is to identify 'data with meaning' (Byrom et al.,

2001, p. 221) and develop a more precise understanding of how current stores trade spatially and temporally (Wood, 2006).

Geo-demographics data

The complex information on consumer characteristics is normally provided by specialist firms who implement the so-called geo-demographic segmentation. The geo-demographic segmentation aims to capture the spatial heterogeneity of the market in a certain catchment area by classifying the characteristics of its residents (Gonzalez-Benito and Gonzalez-Benito, 2005). It is also a tool indicating the shopping needs and habits of different geographic areas. There are two underlying principles of that technique: a) similar residential areas have similar shopping needs and habits and, consequently, similar response patterns (Batey & Brown 1995; Birkin 1995) and b) individuals with similar characteristics tend to reside in the same areas and share similar backgrounds – that is to say, residential areas tend to be internally homogeneous so that their residents do not differ significantly from an average profile (Gonzalez-Benito and Gonzalez-Benito, 2005).

The most prominent examples of the geodemographic data providers in the UK include CACI (ACORN) and Experian (MOSAIC). ACORN is a geo-demographic segmentation of the UK's population at the small neighbourhoods' level which offers 5 major categories, 17 smaller groups and 56 detailed types. Its competitor MOSAIC classifies the UK's population into 11 Main Groups and 61 distinct types.

Although the geo-demographic data has many strengths such as high quality (largely based on the census data), is easily understood, visualised and applied, it is not free from limitations. Birkin et al., (2002) list a number of such weaknesses: the unrealistic assumption that all individuals within certain area have the same characteristics, not taking into account pastimes, values and preferences of the population or the low frequency of census which goes easily out-of-date.

Additional useful data

Databases have grown exponentially over past two decades and therefore the demand for retail and services facilities can be estimated from all kind of sources other

than census (Birkin et al., 2002). The most useful sources include Expenditure & Food Survey (EFS) from National Statistics, NOMIS/employment statistics, data on house price changes, business rates or rents.

The EFS is an annual voluntary sample survey of private households which provides comprehensive information on daily expenditure for two weeks. In addition, detailed questions are asked about the income of each adult member of the household and personal information such as age, sex and marital status is recorded for each household member. Besides, information about regular expenditure, such as rent and mortgage payments, is obtained from a household interview along with backdated information on certain large, infrequent expenditures such as those on vehicles (Economic and Social Research Council, 2012).

NOMIS provides official most detailed and up-to-date labour market statistics at various spatial levels including national, regional and neighbourhood. The data comes from a variety of sources including the Labour Force Survey (LFS), claimant count, Business Register and Employment Survey (BRES), New Earnings Survey (NES), and the 2011, 2001, 1991 and 1981 Censuses of Population. There are two main ways of viewing the data: a) the labour market profile at the Local Authority level, which contains information on employment and unemployment rates, economic activity and inactivity, employment by occupation, qualifications and average earnings; and b) detailed statistics at the Lower Super Output Area which provide access to the full range of data (Office for National Statistics, 2012).

Data on house price changes can be obtained from the Land Registry, who generates on a monthly basis the House Price Index (HPI). By using their own dataset of completed sales they provide the most accurate independent house price index in the UK. The HPI figure compares the average current house price to what it was in January 1995, with the index set then at 100. In addition, Land Registry publishes on a monthly basis the average house price and it compares it to the data from previous year. Both HPI and average house price figures are available at national, regional, county and London borough level (Land Registry, 2012).

Business rates are taxes charged on most non-domestic properties. In England and Wales business rates are worked out by multiplying the 'rateable value' of a property

set by the Valuation Office Agency by the business rates multiplier, set by central government (Gov.uk, 2012). In order to reflect changes in the property market a revaluation takes place, usually every 5 years. Whilst the data on business rates can be obtained from local council it is much more difficult to get hold of systematic data on rents, which is unfortunately not freely available. Typically, rents vary geographically with regional and sub-regional variations being common but also it is recorded at the local micro-level scale e.g. the difference between primary and secondary shopping areas may be significant. Rents are substantial operating costs to the retailers and therefore, the level of local rents might shape the demand for retail facilities.

3.4.5 Demand and supply issues considered by the study

Following the 2008-09 economic crisis, the widespread decline of UK high streets reflected in increasing vacancy rates, became increasingly important in policy debates and attracted significant media attention. In these debates, the vitality and viability of UK high streets was viewed as driven predominantly by local supply factors: much of the government regulation related to the economic performance of UK town centres focuses on the supply side. For instance, PPS6 (2005) indicates that the need to promote town centre vitality and viability should be satisfied by enhancing consumer choice and the provision of a range of shops, leisure and local services that meet the needs of the entire communities including the socially-excluded groups. Another supply factor promoted by the PPS6 includes accessibility, in particular improving the existing accessibility and ensuring that existing or new development is accessible and well-served by a choice of means of transport. And perhaps the most significant is the PPG6 (1996) which implemented a 'town centre' first approach to retail development and has been widely adopted by the large corporate retailers.

However, more recently, attention has been drawn to the importance of the consideration of consumer characteristics and the general role of demand in the study of high street performance. In particular, recent research (e.g. Experian, 2009b) has showed that the impact of the 2008-09 economic crisis varied spatially, suggesting that the role of demand in the adjustment of UK high streets to the recession was most possibly underplayed. It could be argued that some areas, presumably due to their

geodemographic characteristics, are more vulnerable than others. Clearly, the response of individual town centres to the 2008-09 economic crisis, is related to the pre-crisis characteristics of their immediate catchment areas and the extent to which the economic crisis impacted consumer spending power at local and regional scales. For instance, the temporal and financial implications of the crisis are felt differently by the catchment areas characterised by a large proportion of young professionals than those populated with elderly pensioners or low income families in deprived areas. In the regional context, the consequences of public spending cuts are believed to impact most severely the post-industrial areas suffering from a long-run decline and heavy dependence on public sector jobs (Hastings et al., 2012).

Moreover, the economic crisis had the capacity to change some of the trends in demand for retail spaces. As the increasing retail sales recorded prior to the economic crisis, were mainly related to an increasingly low price of comparison goods such household items, clothing and furniture and leisure services (Anagboso, 2009), the increased demand for these types of goods was satisfied by rapidly growing retail space in UK town centres. In 2008-09, presumably due to the property market crash and the declining disposable income, household goods stores became the largest contributor to the downward trend observed in non-food stores sales (Anagboso, 2009) and as a result, the demand for retail spaces declined and many stores had to close increasing vacancy rates. In addition, the economic crisis has increased the demand for 'good value' products which paved the way for rapidly increasing online sales. Nevertheless, it is clear that the economic performance of UK town centres is to a large extent determined by a mix of demand and supply factors of particular catchment areas and their broader hinterlands. What is unclear however, is the role which geodemographics and other demand factors play in that performance as opposed to the supply factors.

This study attempts to consider both demand and supply factors in order to investigate changes in UK high streets configuration during economic crisis and austerity. In the above context it could be argued that both types of factors play a considerable role in sustaining town centre vitality and viability and therefore they can be associated with enhanced resilience or fragility of retail centres to the competitive

and economic shocks. The interesting question here however is to what extent demand factors as opposed to supply, can explain the differential adjustment of UK high streets and town centres to the economic crisis and austerity. By using both types of variables, those that quantify demand and provide proxies for supply factors, this thesis aims to answer this research question.

Nevertheless, this study tends to evaluate in more detail the supply factors which are 'controlling' tools for both policy makers and local authorities. The nature and design of the study aim to enhance the available empirical basis on the instruments available to the policy makers involved in the *Revitalising the High Street* initiative. Therefore the complex relationship between various supply factors which have the capacity to impact the performance of UK high streets, are of a particular interest to this study. The multivariate models analysing that performance consider in particular the role of mix and interdependencies of local businesses, physical structure of retail centres and institutional support.

Recognising the importance of demand factors, the study employs a set of socio-economic indicators to assess the performance of retail centres. However, given the fact that MOSAIC and Census 2001 data contain outdated information, the outcome is likely to be affected. Importantly, none of these data sources portray the recent changes in the demand for retail spaces, those related to the crisis. Therefore it has to be acknowledged that the study could benefit from an inclusion of other up to date statistics such local employment data or house price changes. Increasing unemployment and falling house prices can depress consumer confidence (BRC, 2009) and disposable income elasticity (Meen 2001) so in consequence these factors are more likely to depict the recent variability in consumer spending. The inability to use these factors, due to the complexity of spatial hierarchy of the sample catchment areas, should be perceived as a limitation to this study.

Chapter 4: Study design and methodological issues

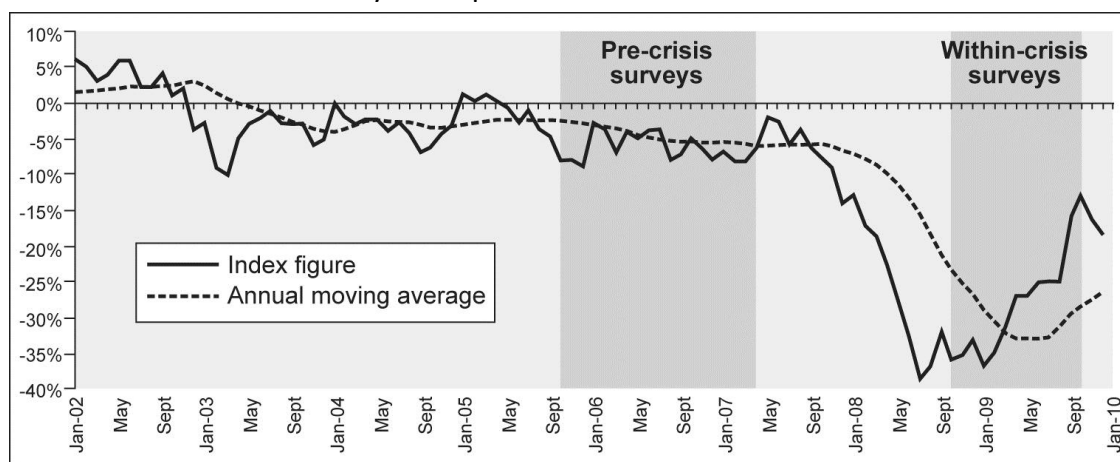
This chapter outlines the study design, data availability and methodology used by the research; moreover it discusses the preferred approach adopted to achieve the objectives as well as the limitations to the study. It begins with the design aspects such as time series of Goad surveys, differential performance of UK high streets and town centres and their complex adjustment to the shock of economic crisis. Then it moves onto the data availability, characteristics and spatial distribution of the cross-regional sample and in addition, this chapter provides the details on other secondary data used in the study. Furthermore, it explains the measures used to depict town centre performance and provides the explanatory data analysis. Then Chapter 4 considers the employed methods and positions them against other similar studies. Finally, this chapter elaborates on a number of methodological issues and uncertainties, which had to be considered throughout the study.

4.1 Study design

This study is part of a broader research programme at the University of Southampton focusing on the consequences of a decade long tightening in UK retail planning regulation. As some of the data sample came from the period that immediately followed the steep plunge in consumer confidence, it was not entirely clear how the 2008-09 global economic crisis affected the obtained results. The opportunity arose with ESRC RIBEN support - to design a study depicting the differential performance of UK high streets and town centres as they adjusted to the onset of economic crisis. Essentially, the main task involved comparison of town centre configurations in two consecutive periods: a) the immediate pre-crisis period (2006-07) and b) the period which followed the steep plunge in UK consumer confidence (2008-09), as shown in Figure 4.1. Such comparison has facilitated a thorough assessment of the changes that occurred to the occupancy rates in each retail/service category, including vacant retail outlets.

Consumer confidence began to weaken in the summer of 2007 and the contraction continued through rising global commodity prices and falling property prices (BRC, 2009). Figure 4.1 shows that following the steep fall recorded during late 2007 and the first half of 2008, the CCI began a steady rise throughout late 2008 and 2009, showing the expectation of a quick recovery. However, Consumer Confidence started to decline for the second time in December 2009 demonstrating signs of a rather shallow and weak recovery.

Figure 4.1: UK consumer confidence index 2002-09 showing the periods in which pre-crisis and within-crisis surveys took place

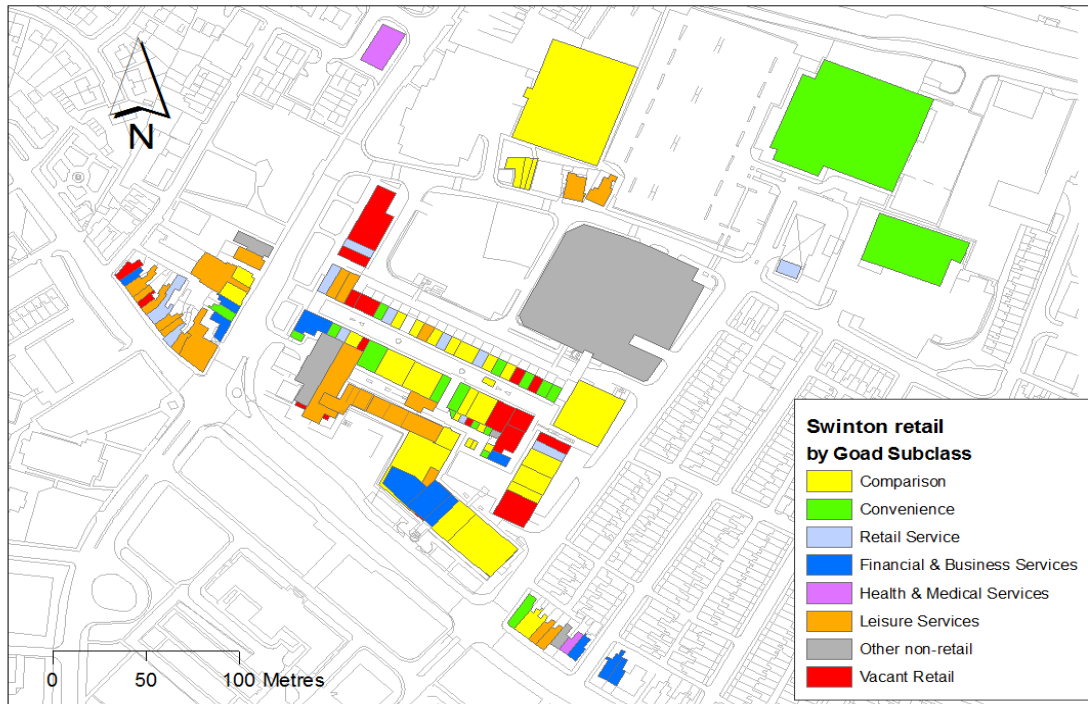


Given that the consumer confidence index is a *leading indicator*, it was not until Q4 2008-09 that the effects of the economic crisis began to be felt most strongly by UK high streets and town centres. This is to say that a time lag of a minimum of 12 months, measured from the time that the CCI had begun to fall, was applied to ensure that the impacts of the economic crisis have been strongly reflected in the data. In addition to the adjustment of UK high streets to the onset of economic crisis, this study has investigated the speed and extent of the recovery and has also made an attempt to assess the degree of the reorientation process by using a ‘third wave’ post-recession shallow recovery period data. Although such data were available only for some centres, the intra-urban analysis has offered a great potential to broaden our understanding of UK high streets’ resilience; in particular, we used the concept of adaptive resilience which focuses on a dynamic and evolutionary process through which retail centres gradually change and benefit from the new configurations.

4.1.1 Goad plans and Goad surveys

The study relied on retail composition information drawn from the detailed and long-established Goad/Experian surveys - a data source which has increasingly been used to provide vital evidence-based research for UK regulatory enquiries and policy debate. The Competition Commission (2008, A5(1) 8-18) and Wrigley et al., (2009a, p.2066) discuss the strengths and weaknesses of the Goad/Experian data; however, importantly, the Competition Commission (2008, A5(2) -9) has publicly expressed confidence in the quality of the data. The Goad/Experian retail survey data provides detailed maps and the associated databases for over 2,300 retail centres in the UK. Essentially each retail unit in a centre is mapped onsite by Experian surveyors, and retail occupancy information on the fascia of the occupying retailer/service provider, their retail/service category, and the floor space of the unit is collected. An example of such data-driven mapping, portraying a Goad Plan for Swinton town centre, is shown in Figure 4.2. All outlets have been divided into broad retail/service types which include comparison retail, convenience retail, retail services, leisure services, business & financial services, health & medical services, non-retail and vacant units. The broad retail/service types are subdivided by Goad further into smaller categories, e.g. convenience retail comprises butchers, bakers, convenience stores, supermarkets and so on. For the entire list of Goad Subclasses and categories, see Appendix 1. The initial surveys and maps date back to the mid-1960s when Charles Goad's company started the Goad town centre plans and databases at the request of the then Department of Trade and Industry. Since then, the coverage of retail centres has been progressively extended over time, both geographically and to include smaller centres. Currently, the top 500 'ranked' retail centres in the UK are surveyed on an annual basis with the remainder being surveyed every two years. The longitudinal richness of the available data on large numbers of centres has resulted in increasing use of the information outside the retail and property industries. Nevertheless, there are some limitations of using Goad data too, such as already discussed irregular frequency of undertaken surveys, alterations to classification of retail categories or the issue of constantly evolving boundaries of retail centres proved to be at times problematic. These issues however will be discussed in more detail later on in this chapter.

Figure 4.2: Swinton town centre Goad plan by Sub class



4.1.2 Available data

Initially, there were more than 360 retail centres across four UK regions that had their Goad surveys completed in either the pre-crisis or within-crisis period. However, only 267 town centres/high streets had their surveys completed in both those periods providing necessary data to assess the differential performance of retail centres as they adjusted to the economic crisis. Most of the pre-crisis surveys (218 centres) were conducted in 2006 surveys and most of the within-crisis surveys (238 centres) were carried out in 2009. A genuine effort to have consistent survey dates in each respective period has been made, however this was not always possible as some centres had their surveys completed less frequently than others. Table 4.1 shows that the pre-crisis sample had to be supplemented with surveys from 2007 and in addition a small number of surveys came from the second half of 2005. In turn, surveys from Q4 2008 and January 2010 have been added to the within-crisis sample. At this stage, it needs to be acknowledged that such study design, resulting purely from the data availability, had some limitations. Although it could be argued that vast majority of surveys (more

than 80%) came from the consistent periods of 2006 and 2009, the remaining data could potentially cause some issues.

Table 4.1: Goad surveys - availability and distribution across the sample

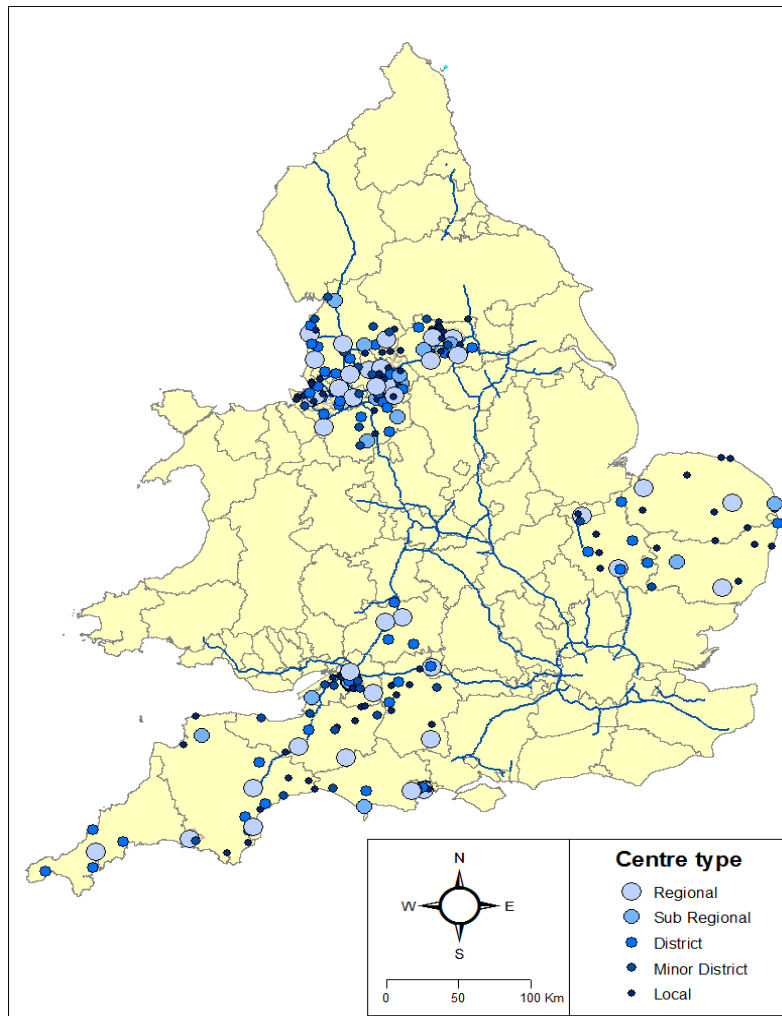
Pre-crisis		Within-crisis		Shallow-recovery	
Year	No of centres	Year	No of centres	Year	No of centres
2005	10	Q4 2008	27	2010	47
2006	218	2009	238		
2007	39	Jan-2010	2		

In particular, the small subsample of surveys coming from years other than 2006 or 2009 could create some inconsistencies and ambiguities in the observed responses of UK high streets to the shock of economic crisis. The main concern was that the unequal gaps in applied time lags were likely to depict different stages of the economic downturn reflected by differential impacts on UK high streets. For instance, as Woolworths ceased trading at the end of 2008 – which was during the within-crisis survey - there was a discrepancy in recording those stores by the Goad survey. The surveys completed in Q4 2008 recorded the Woolworth’s department stores as trading units, whilst the surveys completed in 2009 categorised - by then already unoccupied stores - as vacant units. However, given the size of the sample and the evolving nature of town centres some degree of uncertainty was unavoidable; therefore the preferred approach involved monitoring of such cases and undertaking some precautionary measures if necessary.

4.1.3 Spatial distribution of the dataset

The 267 centres/high streets (shown in Figure 4.3) were divided into two groups– a ‘southern’ group of 150 centres (119 located in the South West and 31 in East Anglia) and a ‘northern’ group of 117 centres (93 in the North West and 24 in West Yorkshire). The southern subsample comprised one large urban area – Bristol and several mid-sized cities such as Bournemouth, Exeter, Gloucester, Norwich and Cambridge, however the market towns, scattered across rural areas, were undoubtedly predominant.

Figure 4.3: Location and type of 4-region sample of centres/high streets by type



The South West sample not only had the largest number of centres but has also covered the greatest area extending from Penzance in Cornwall to Bournemouth on the south coast and Tewkesbury in Gloucestershire. Importantly, a large part of SW data came from Bristol where 47 high streets had their surveys completed in all three analysed periods. The sample from East Anglia was rather small, predominantly comprising market towns and smaller retail centres. In contrast, retail centres from the northern sample were concentrated around few large urban areas including Manchester, Liverpool and Leeds, thus occupying significantly smaller and primarily urban area. The North West and West Yorkshire samples were situated very close to each other, with no apparent geographical split, however their dynamics were somewhat different.

The choice of data represented a pragmatic ‘least cost’ supplementation of Goad surveys to which University of Southampton had access as a part of on-going and larger industry-funded research project (see Wrigley et al, 2010, Ch 14). Nevertheless, despite the pragmatic and constrained nature of its design, the sample offered good representation across centre size and retail hierarchy. All types of retail centres, as defined in PPS4, including city, town, district and local centres were represented in the dataset rather well. Although the urban/rural and South/North spectrum, displaying distinguished underlying dynamics, were captured relatively well (see Dorling 2010), it was not a sample that was sufficiently large or spatially structured to be representative of the whole UK. Significantly, it excluded London, where different retail and service growth patterns had been found in the first half of the 2000s by both the Competition Commission (2007) and the University of Southampton research group (Wrigley, 2007; Wrigley et al, 2009a). In consequence, the adjustment of London retail centres to the economic shock would display a somewhat different propensity than both the Southern and the Northern subsamples. For instance, London enjoyed significantly lower vacancy rates in both the pre-crisis and the within-crisis periods, which was reported by various commercial consultancies such as LDC or Colliers CRE.

4.1.4 Other data employed by the study

This study has also used a number of other supplementary sources of data such as Experian Mosaic, consumer classification, Census data, IMD2007, detailed data on UK supermarkets, Venuescore retail hierarchy and Bristol retail surveys. These reliable sources of secondary qualitative and quantitative data have complemented the Goad surveys by providing specific and valuable information on UK high streets and town centres.

Experian’s Mosaic

The Mosaic UK consumer classification comes from Experian and provides accurate understanding of the demographics, lifestyles and behaviour of all individuals and households in the UK. Most of the information used to build Mosaic UK, some 62 %, is sourced from Experian’s Consumer Dynamics Database, which provides consumer demographic information for the UK’s 47 million adults and 24 million households. This

database includes edited Electoral Roll, Council Tax property valuations, house sale prices and lifestyle surveys. The remaining 38 per cent of the data come from Census estimates for 2009, which is an accurate and up-to-date measure of the key demographic characteristics of local areas that have taken place since the 2001 Census (Experian, 2009a). This study has implemented the 2009 version of Mosaic UK mainly used to extract some demographical variables which were utilised to explain the variance in vacancy rate changes. In particular, the up-to-date estimates of affluence in each high street catchment area were beneficial to the statistical modelling stage.

Index of Multiple Deprivation 2007

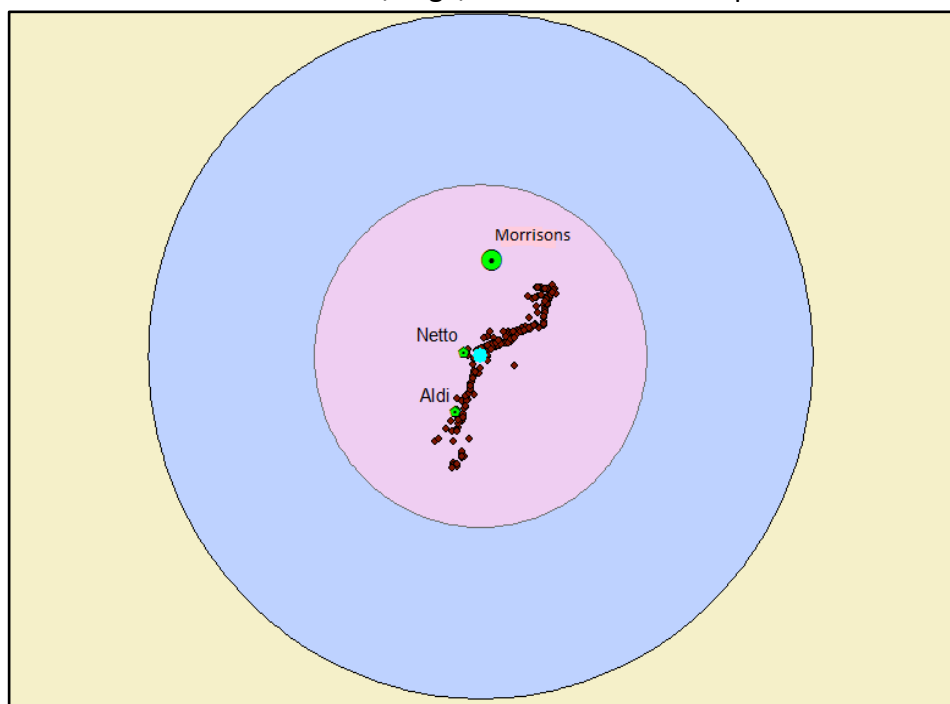
The Index of Multiple Deprivation (IMD) from 2007, which effectively is a measure of a multiple deprivation at small area level, is an updated version of the IMD 2004. It contains seven components, referred to as domains, which relate to income deprivation, employment deprivation, health deprivation and disability, education skills and training deprivation, barriers to housing and services, living environment deprivation, and crime (Department for Communities and Local Government, 2007). Each domain consists of a number of ONS measures that aim at capturing the proportion of the population experiencing some sort of deprivation in the area. For instance, income deprivation, which was employed by our model to explain the change in Bristol's vacancy rate, comprised numerous components: adults and children on Income Support, adults and children in Income-Based JSA Households, adults and children in Pension Credit (Guarantee) Households and so on.

Various elements of IMD 2007 were tested in the multivariate modelling but the most significant proved to be the income deprivation, used by this study as a proxy of affluence for the intra-urban analysis. Each high street and town centre had a 500m buffer created around and the average scores for the relevant lower super output areas have been calculated. Although it might be argued that the 500 m buffer depicts the dynamics of a rather small catchment area, this can be justified by the large density of Bristol's retail centres and the very specific and fragmented picture of deprivation within the city. Moreover, it was believed that such an approach has resulted in providing the best possible proxy which depicts the average values in a consistent way.

Corporate foodstore data

Tesco has provided the detailed and up to date information on all corporate foodstores' entry/presence in the UK. It has provided systematic data on all existing grocery stores including the information on facia, holding company, store format, opening date, floorspace area and the exact location. Indeed, this was a particularly valuable source of data and has been used extensively, especially to establish all edge/out-of town foodstores present in different periods, as Goad only covers in-town-centre locations. Figure 4.4 shows the GIS buffer method that was applied to define the edge/out-of-town centre supermarkets. It can be seen that in this particular high street there were two supermarkets including Aldi and Netto located in-town centre. Additionally, Figure 4.4 shows that there was a Morrison superstore located on the edge-of-town centre, which has not been accounted for by the Goad survey.

Figure 4.4: Criteria used to define in/edge/out-town centre corporate foodstores



The criteria used to define edge-of-town developments applied a 400m buffer zone from the primary shopping area, which is a distance of a convenient five-minute walk. The outer blue layer, defining out-of-town centre developments, used an 800m buffer and accounted for large supermarkets of more than 15,000 Sq Ft only. Although in this

case no such foodstore was present, it was generally believed that only large out-of-centre stores would have significant impact on a nearby high street or town centre, so for that reason the small and medium stores were omitted.

Venuescore

Venuescore is an annual survey compiled by Javelin Group, which ranks the UK's top 2,000 retail venues including town centres, stand-alone malls, retail parks and factory outlet centres. These rankings are widely used by retailers, developers, local authorities and various consultancies as they provide straightforward tools for understanding some of the key differences between shopping venues, such as scale of offer, market positioning, fashionability and age positioning (Javelin Group, 2011). This study has employed the results of its 2009 survey, which again was supplied by Tesco's research unit. In addition, in order to enable a more comprehensive understanding of UK high street performance, those Venuescores were used to create an explanatory variable referred to as 'centre hierarchy'. However, the final model did not retain this ordinal independent variable, mainly because it had omitted a number of the smallest centres and has been found to interact with the 'centre size' variable.

Bristol retail surveys

Further useful source of secondary data, widely used by our study, included the Bristol citywide retail study which was commissioned by Bristol City Council. It has provided comprehensive insights into the 1500 household and 2000 local shopper surveys as well as the retail centres health check analyses carried out in 2006 (DTZ, 2007). The surveys have been a respected source of qualitative data on catchment area demographics, perceptions and habits of Bristol shoppers providing such valuable information as reasons and frequencies of visits to the main high streets, mode of transport and opinions on a particular centre's strengths and weaknesses. Importantly, the health check study contains detailed Goad plans for each Bristol retail centre, which were very useful in establishing the alterations to their configurations. On the other hand, Bristol retail health check analyses were used to construct some explanatory variables, especially those that depicted the qualitative aspects of each

high street such as the shopping environment quality, ease of parking, perception of safety and occurrence of crime.

4.2 Methodology – triangulated approach

To depict the differential performance of UK high streets and town centres between the pre-crisis, within-crisis periods as well as to establish their trajectories in the era of austerity, this study has employed a wide range of computing tools and quantitative techniques such as GIS, spatial and multivariate analyses. Adequate selection of methods and validation processes were carefully considered at each stage of the study. Crucially, these two issues are strictly interlinked as validation processes are very useful tools to determine which methods to employ, as well as when and how to employ them (Frey and Dym, 2006). One of the validation methods adopted by this study was triangulation which cross verified the data and computed results against other sources and studies such as Colliers CRE and Local Data Company (LDC). Such a method, defined by O'Donoghue and Punch (2003) as a process *'of cross-checking data from multiple sources to search for regularities in the research data'* is commonly applied in economic geography and according to Altrichter et al., (2008) it provides a more detailed and balanced picture of the situation. The analysis of UK high streets and town centres' adjustment to the economic crisis proved to be a multidimensional and very complex one, thus adopting different but consistent measures of change in their configurations, experienced between the analysed periods, was essential.

4.2.1 Measures

Two separate measures for each retail or service type in the 267 town centres/high streets sample, of change between the 'pre-crisis' and 'within-crisis' (subsequently referred to as '*recession*') surveys were calculated:

- (a) The first, measure M1, was the *relative* change in retail/service units of a particular type in the centre/high street. That was computed as the difference between unit numbers recorded in the two Goad surveys ('pre-crisis' and 'within-crisis'), relative to the 'pre-crisis' numbers as a base.

- (b) The second measure, M2, was the simple *absolute* percentage-points (pp) increase/decrease recorded between the two surveys in the percentage of retail/service units of a particular type in a centre/high street.

Importantly, both measures help to understand the magnitude of UK high streets configurations changes at both regional and individual town centre levels and although each measure depicts different propensities of that change, they both had strengths and weaknesses. For instance, in the case of M1, low pre-crisis base figures recorded for a particular retail/service type in a centre has the capacity to produce high and unstable values. This was clearly evident at the level of an individual retail centre where a very small number of additional vacant units recorded in the within-crisis survey could easily generate a 100% increase in M1, specifically when the pre-crisis base was very small. However, it was a very useful measure at the regional level, especially when visualising the differential performance of a particular retail category. Conversely, M2 which measures the absolute change as a percentage of each retail/service type is controlled by size and therefore more stable. However, it can occasionally produce somewhat misleading results e.g. in the case of the intra-urban sample, where the overall number of comparison retail went up by 20 units between the pre-crisis and within-crisis surveys, the respective M2 recorded negative value. This normally happens when the increase in a town centre total numbers of retail/service units, calculated for the analysed periods, is higher than the increase in a particular retail type or category.

4.2.2 Descriptive analyses

Both measures, relative (M1) and absolute (M2), have played a crucial role in obtaining our descriptive results. They have provided comprehensive insights not only into the response of UK high streets to the onset of global economic crisis but also have facilitated the empirical assessment of other powerful and interlinked forces reshaping their configurations. Additionally, by utilising 'third wave data', changes between the within-crisis and post-recession shallow recovery periods have been examined. This however, due to the 'third wave' data availability, was only feasible for the single urban area - Bristol.

It needs to be highlighted that to derive the descriptive results for the overall cross-regional changes recorded in each retail/service type, a methodology considering the two-tier Goad classification was employed. First, the descriptive analysis investigated the change in broad retail/service types, referred to as the 'Goad subclasses' i.e. comparison, convenience, retail services, leisure services, financial services or vacant retail. In broad terms, comparison retail can be defined as non-food units and convenience retail comprises essentially the food related outlets. Occasionally however, this simple divide can be blurred, especially in the case of some mix-retail superstores such as M&S, Tesco, Asda etc. which often sell both types of goods. Second, the descriptive analysis has also accounted for more detailed retail/service categories - in other words the components of the broad retail types described above. Interestingly, the implementation of the two-tier approach to the retail/service types has revealed the truly complex nature of the change in UK high streets' configurations. Often the performance of the detailed retail/service subcategories contrasted sharply with the trends exhibited by the broad category they were part of. For instance, comparison retail as a whole recorded large decline in the overall number of outlets, however some of its components such as phones & accessories or charity shops have recorded substantial increases.

Further, vacancy rates - the most commonly used indicators of the impact of economic crisis 'shock' on UK town centres/high streets - have been calculated in a slightly different way than the remaining retail/service categories. As vacant retail did not contain any sub-components in Goad surveys it was more important to consider its variations for different spatial levels: a) the overall regional vacancy rates changes and b) the changes at the level of individual high streets/town centres. The former was primarily used in the descriptive analysis and the latter was adopted as the response variable in the multivariate modelling.

The importance of descriptive analysis should not be undermined as it had the capacity to depict the type of retail/service that had been affected most adversely by the economic crisis and other forces of concern. Furthermore, the descriptive results have provided much needed empirical evidence on the adjustment of UK high street to the onset of economic crisis, against which: a) further statistical modelling could be

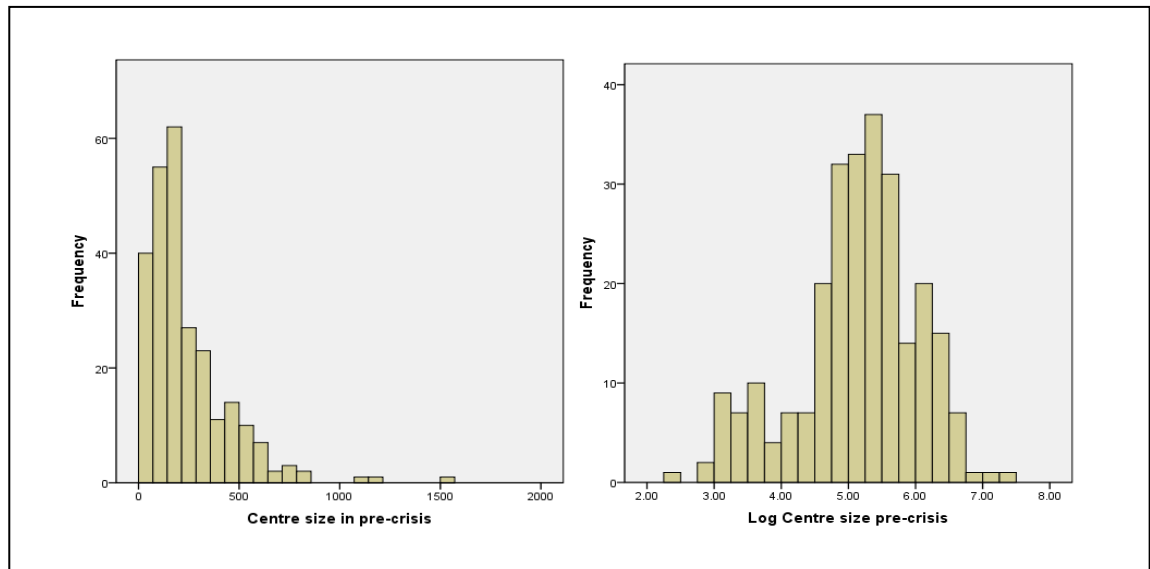
positioned and evaluated, b) the results of other commercial consultancies such as LDC or Collier CRE could be assessed and c) the claims raised by the media and press could be validated and verified.

4.2.3 Exploratory Data Analysis and GIS

The additional techniques of data interrogation implemented by this study included exploratory data analysis (EDA) and geographical information systems (GIS). The simplest form of EDA involves computation of basic statistical summaries of analysed data using various graphical tools such as histograms, pie charts, box plots and/or scatter plots. Although none of the EDA tools provide an explicitly spatial perspective on the data, the implementation of powerful GIS techniques provides a dynamic link to a map and tabular views of the data (De Smith et al., 2007). Nevertheless, both techniques are essential to exploit the data in sufficient detail and crucially, they have the capacity to depict key characteristics of the analysed sample. The EDA provides initial exploration, understanding and the 'feel' for the examined data primarily by determining underlying patterns and establishing underlying trends. One of the simplest examinations may involve testing for normality of the data and detecting outliers that might affect final results. For instance, Figure 4.5 shows the histograms of the 'pre-crisis centre size' variable, used in the multivariate modelling. The graph on the left hand side, showing the 'raw' centre size data, is positively skewed, and thus indicates a data which are not normally distributed and require a transformation. After applying a log transformation, the graph on the right hand side appears to have reasonably regular 'bell' shape, confirming the normality of the transformed data. Moreover, EDA often focuses on possible outlier detection at an early stage of the analysis. Outliers are spatial objects whose values on one or more attributes are significantly different from others in the examined dataset (De Smith et al., 2007). The questioned data may be correct, but it may be the result of some form of an error in measurement, coding, representation etc. Therefore, such data need to be examined closely and the outliers adjusted or even removed. There are various methods to detect outliers; however, one of the simplest and most effective is to create a histogram of the data using fine division. As Figure 4.6 shows, the histogram of

vacancy rate change in our four-region sample indicates the presence of several possible outliers.

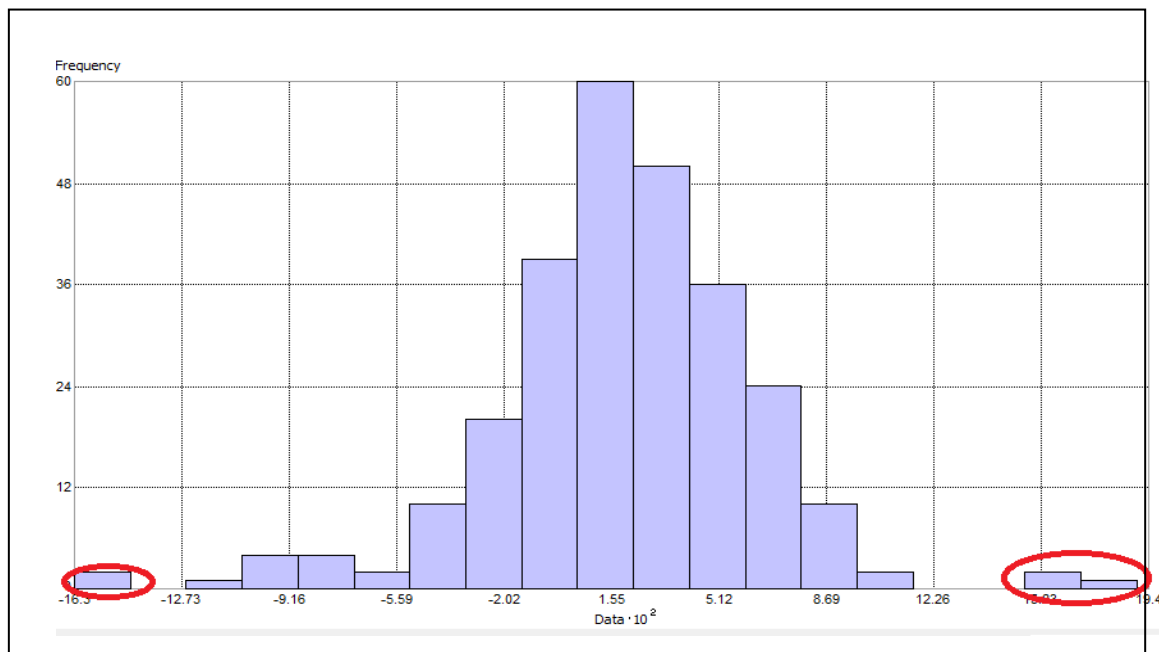
Figure 4.5: Histograms of 'centre-size' data pre and after log transformation



The examination of the variable reveals five retail centres with extremely high or low values, those of ± 15 pp of change in vacancy rate, due to a number of reasons. In such cases it is important to investigate the reasons responsible for a particular retail centres under/over performance. Closer inspection confirms that two of those centres performed exceptionally well namely, Rothwell and Cambourne. The former had undergone an extensive regeneration programme between the pre-crisis and within-crisis surveys and as a result, 17 retail/service units, of which 11 were recorded as vacant in the pre-crisis period, became redundant, decreasing the vacancy rate dramatically by -15pp. The latter centre appears to have performed genuinely well between the pre-crisis and within-crisis surveys, filling three of the four vacant outlets, which coupled with an exceptionally small size of the centre, used as a base, produced a colossal (-16pp) decrease in vacancy rate. In contrast, the three centres that observed extremely large increases in vacancy rates included Manchester Openshaw, Bristol Lawrence Hill and Bristol Arnside Road. The Manchester centre was undergoing a transition when the within-crisis survey was carried out; planning permission has been granted for a mall, and offices anchored by a large Morrisons store. In effect, large part of the town centre, comprising more than 30 outlets, had to be demolished,

causing existing businesses to close down which resulted in a massive rise of the vacancy rate by +19pp. The two tertiary Bristol retail centres were both extremely small and appeared to have been adversely affected by the economic crisis; however the small base issue once again has exacerbated the magnitude of the recorded increases in vacancy rates. Finally, although the causes of high vacancy rate changes which have occurred in those five retail centres have been diverse, two of those centres could potentially be named as outliers. Nevertheless, none of those retail centres was deleted at that stage, as more verification was needed at the modelling stage.

Figure 4.6: Histogram of vacancy rate change clearly indicating presence of several outliers



GIS has a variety of definitions from being a digital map with an associated database to a tool for displaying geographical information and revealing what is otherwise invisible in geographic information (Longley et al., 2005). This study has utilised various GIS techniques, in particular to provide a valuable visual data exploration tool to enable spatial queries and derive new binary variables. GIS has also been used to map various dynamics of UK high streets such as centre size, retail mix or deprivation levels; which was useful in depicting their spatial variation. Further, the

obtainment of variables such as levels of deprivation, affluence etc. for the immediate town centre catchment areas, was only possible due to the implementation of GIS techniques. Even more importantly, GIS techniques have been applied to execute a number of spatial queries such as resolving the issue of constantly evolving town centre boundaries or differentiating between policy-compliant in/edge-of-town and out-of-town supermarkets' presence/entry. Additionally, without GIS it would not be possible to determine the distances between larger regional centres and the centres towards the lower end of retail hierarchy. The latter, positioned in hinterlands of the regional retail centres, often experienced leakage of expenditure raising the question of whether there was a significant relationship between the distance from large centres and their economic performance. Finally, GIS techniques have provided a platform for a complex spatial analysis of both the dependent variable values and the regression model residuals allowing the examination of their spatial dependence and establishing potential trends and relationships.

4.2.4 Multivariate analyses

Multivariate analyses offer various ways of exploring variance in the response variable, which in the case of this study was the vacancy rate change between the pre-crisis and within-crisis and post-recession shallow recovery periods. These types of analyses provide compelling statistical evidence supporting investigated hypotheses and are normally used to identify significant coefficients that can explain the variation in the response variable (Belsley et al., 1980; Henderson and Velleman, 1981; Wrigley, 1983) and might help to reveal underlying spatial patterns (Bailey and Gatrell, 1995).

This study has utilised several multivariate techniques such as principal components, cluster analyses and various types of regression modelling. One of the most powerful techniques reducing the number of derived variables and one which, at the same time, preserves most of the variance is the principal components analysis. It makes redundant those variables that are correlated with each other by producing a smaller set of 'artificial variables' called principal components (Abdi and Williams, 2010). To calculate principal components that explain the variance in the vacancy rate change standardized variables were used as the original covariates were very diverse

and their original values were set at multiple scales. The other multivariate technique employed by this study was the cluster analysis, which by using Ward method and K-means optimisation, has indicated the presence of three main clusters within our cross-regional dataset. In order to enable the interpretation of both principal components and cluster analyses results, they were plotted on loading and scatter plots respectively, and then mapped. Such method helps to compare derived scores against each other and establish possible correlations with the dependent variable.

However, one of the most commonly used multivariate methods is the multiple regression analysis. This method specifically helps one to understand the relationships between the dependent variable changes and any of the independent variables, while the other independent variables are held constant. The key purpose of using a multivariate regression analysis by this study was twofold. First, to explain the variance in vacancy rate changes between the pre-crisis and within-crisis periods amongst the four-region sample of 267 high streets. Regression analysis was a vital tool implemented to establish what caused the change in vacancy rate from a range of possible factors. Second, to establish the significance of cross-regional results when taking into consideration both single urban area and the post-recession shallow recovery period. This study has initially employed more than one type of regression modelling; however, the final and most robust model used the ordinary least squares (OLS) linear regression. The OLS model is used when the residuals are not autocorrelated; otherwise, the spatial models have to be run. This is normally verified by mapping the residuals on Moran's I scatter plot where the autocorrelation can be easily determined. Nevertheless, there was no spatial autocorrelation present in the cross-regional sample, therefore spatial lag or spatial error models were not required. Quantitative models normally rely on assumptions about the way the world works, and regression models are no exception. There are four key assumptions that justify the use of linear regression models for the purpose of prediction (Duke University, 2011):

- linearity of the relationship between dependent and independent variables
- independence of the errors (no serial correlation)
- constant variance of the errors (homoscedasticity)
- normality of the error distribution.

If any of these assumptions is violated (i.e., if there is nonlinearity, serial correlation, heteroscedasticity, and/or non-normality), then the predicted results may be (at best) inefficient or (at worst) seriously biased or misleading. Thus, rigorous measures were applied to ensure our models complied with those assumptions.

4.3 Methodological issues

4.3.1 Defining town centre boundaries

Town centres are dynamic and evolving systems, therefore their configurations and boundaries are not constant. In this section I deal with this issue by identifying the causes of boundary shifts and their potential consequences on both descriptive and empirical results. Furthermore, I evaluate the approaches adopted by other studies dealing with that issue and propose a third method, which I believe is the most comprehensive approach. A thorough analysis of a few successive Goad surveys indicates that town centre boundary change occurs mainly due to two reasons. First, such alteration might be caused by an expansion or contraction of physical town centre borders in consecutive surveys, and second as a result of subdivision or merger of existing units within specified and already existing boundaries. Previous studies dealt with this issue by creating and implementing two separate datasets:

- (a) The first, referred to as the 'entire dataset' accounted for all spatial changes that took place between analysed periods. This in practice meant that town centre boundaries were allowed either to expand, predominantly due to the inclusion of new areas or completion of new retail developments outside the existing boundaries, or to contract mainly as a result of old retail units being retired.
- (b) The second, so-called 'like for like' dataset contained only those retail/service units that remained completely unchanged between analysed periods. In the case of this study, it meant a 4% reduction in total number of retail/service outlets, declining from 72625 in the entire dataset to 69785 units in the 'like for like' dataset. The figure of 4% was only an average and varied greatly across retail categories, with the lowest value of 2.2% in the case of retail

Chapter 4

services and the highest of 8.4% occurring in the vacant retail. These of course, were the aggregated values for the entire four-region sample and they fluctuated across analysed centres significantly.

The descriptive statistics in Table 4.2 compiled for the four-region sample show that the number of vacant retail units in the 'entire dataset' differed considerably from its 'like for like' equivalent. As many as 694 vacant retail units recorded by the 'entire dataset' in the pre-crisis survey were not accounted for in the 'like for like' dataset therefore the relative number for the within-crisis surveys was only slightly lower at 657. Such a large discrepancy had a strong potential to affect our results; in particular it was very evident when calculating the relative change (M1) in vacant retail. That relative change between the pre-crisis and within-crisis periods stood at 28.2% for the 'entire dataset' but in the case of the 'like for like' dataset was 4 percentage points (pp) higher, at 32.1%.

Table 4.2: Descriptive statistics of vacant units for 'entire dataset', 'like for like' and fixed boundaries' compiled for pre-crisis and within-crisis periods.

Pre-crisis vacant units			Within-crisis vacant units		
Entire dataset	Like for Like	Fixed Boundary	Entire dataset	Like for Like	Fixed Boundary
No of vacant units					
6495	5801	6157	8325	7668	7896
Difference: absolute/proportion					
0	694	338	0	657	429
0	10.7%	5.2%	0	7.9%	5.2%
Absolute change between pre and within-crisis					
0	0	0	1830	1867	1739
0	0.0%	0.0%	28.2%	32.1%	28.2%
Centres with constant vacant units					
267	98	178	267	150	223
100%	36.7%	66.6%	100%	56.2%	83.5%

Likewise, the comparison of both 'entire' and 'like for like' datasets shows that the number of pre-crisis vacant units remained constant only in 98 of 267 centres (27% of the total). In the within-crisis survey, that number was consistent in 150 centres, which was an equivalent of 56% of the entire sample. The key problem here was to define the extent to which the discrepancy in vacant unit numbers *a)* could be associated

with the variable boundary issue, and *b*) resulted from subdivision or merger of already existing units. Although the University of Southampton research team pointed out in submissions to the Competition Commission (see Wrigley et al., 2009a, p. 2069) those boundaries can also be held constant, clearly, the simple 'like for like' subset does not resolve this query as it excludes all newly built, retired, subdivided and merged units.

In essence, our way of resolving this issue was to create consistently defined fixed boundaries for each high street and town centre. They would account for the vacancies that resulted from subdivision or a merger of already existing units, but would also exclude all vacancies due to new build or retired outlets beyond the static boundaries. This is to say that the 'fixed boundary method' unlike the 'like for like' accounted for all retail/service outlets that were somehow modified in between the pre-crisis and within-crisis surveys but disregarded those that were responsible for boundaries extension or/and contraction. For instance, across the four-region sample there were 48 vacant units identified as newly built but were located within the static boundaries. These, as newly recorded outlets in the within-crisis survey would be excluded by the 'like for like' dataset, however the 'fixed boundary' method takes those outlets into account as they are part of some redevelopment project and have not resulted from the expanding/shrinking boundary issue.

Subsequently, vacant units in each retail centre have been recalculated and then used to create a new dependent variable measuring the change in vacancy rates between the pre-crisis and within-crisis periods based on the 'fixed boundaries' method. However, it needs to be emphasized at this stage that the majority of analysed centres had only point data available in terms of mapping each retail/service. Such data, not showing the boundaries of actual buildings, had the potential to create some uncertainties and in some cases the best proxy had to be applied.

4.3.2 Liverpool Central case study-using point data

Figure 4.7 shows all retail/service units in Liverpool Central recorded in the pre-crisis Goad survey, carried out in August 2006. To map the retail/service units their coordinates were used, but as mentioned above this only allows displaying each outlet

as a point. Nevertheless, it can be seen that there were 134 vacant retail units, highlighted in red, which accounted for 15.7% of the overall number of retail/service outlets.

Figure 4.7: Retail/service units in Liverpool Central during the pre-crisis survey

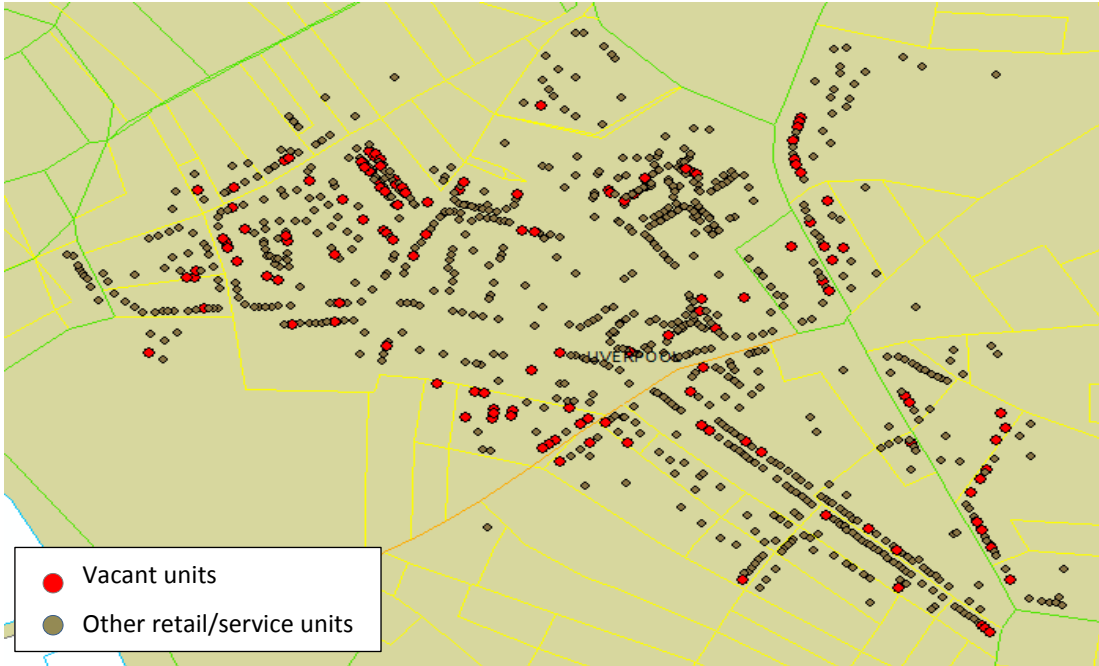
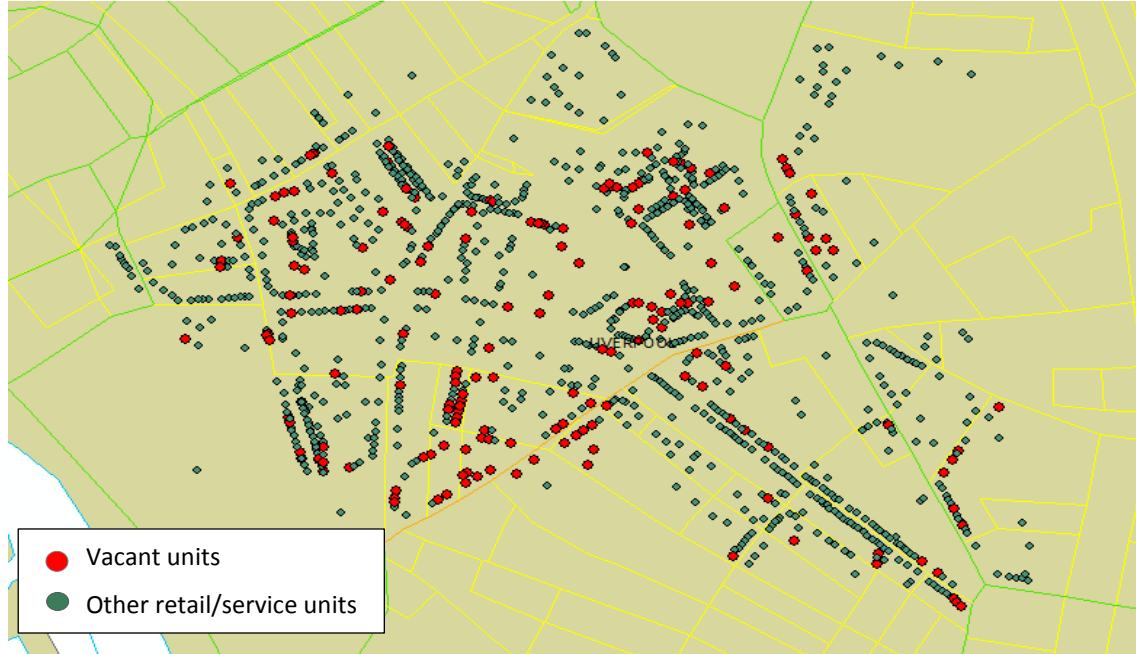


Figure 4.8 on the other hand, portrays Liverpool Central's retail units recorded in the within-crisis survey, which took place in January 2009. When comparing Figures 4.7 and 4.8, it is clear that the boundary of area surveyed within-crisis has expanded substantially, adding an entire new part on the southwest fringe of the city centre.

Moreover, it becomes apparent that the boundary change has had a considerable impact on the overall number of vacant retail units, as a large number of newly added outlets was vacant. The overall number of vacant retail units had gone up from 134 in the pre-crisis to 183 outlets in the within-crisis survey, increasing the share of vacant retail in the centre from 15.7% to 18.1%. Although this represents a +36.9% rise in relative measure (M1), the increase in absolute change (M2) of +2.4pp was somewhat concealed by the rising total number of centre outlets. However, the latter figure has been used as the dependent variable for Liverpool Central 'variable boundary method'. The newly added units, as redlined on Figure 4.9, have been overlaid onto the pre-

crisis Goad plan which allowed visual assessment of the extent and magnitude of vacant units resulting from boundary extension, displayed in yellow.

Figure 4.8: Retail/service units in Liverpool Central during within-crisis survey

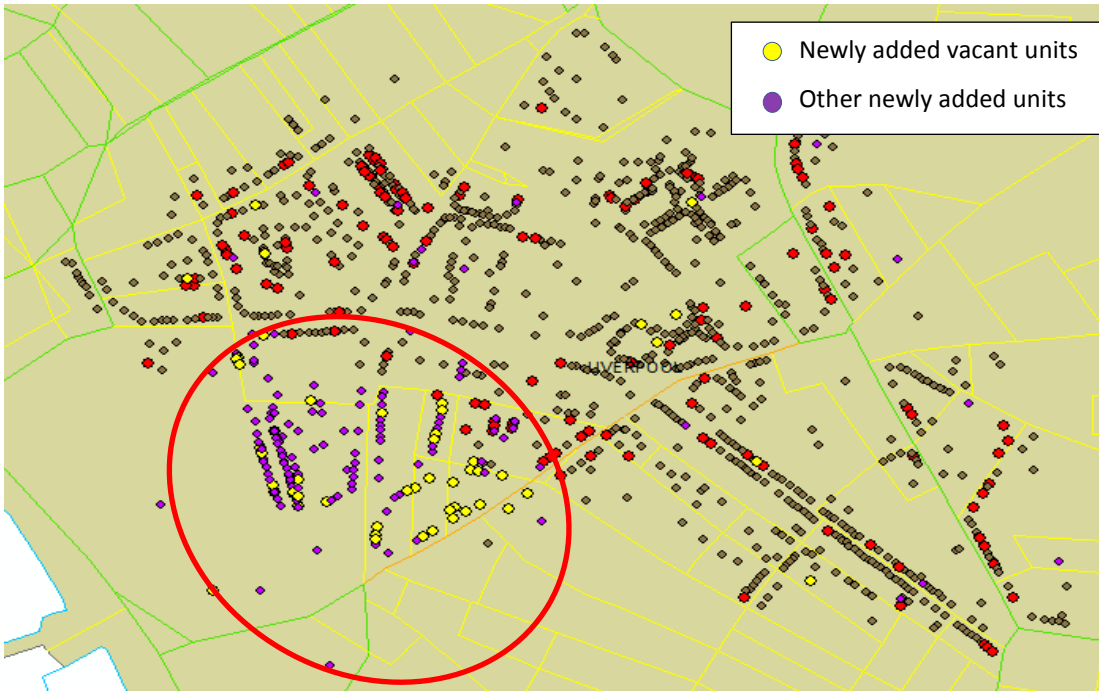


Since the 'like for like' dataset accounts only for those units that have identical Goad ID's in consecutive surveys, the overall number of units was reduced when using that method. In consequence, the number of vacant units in Liverpool Central for the 'like for like' method was 121 in the pre-crisis and 130 in the within-crisis period. This represents an increase in vacancy rate change of only +1.1pp as opposed to +2.4pp in the case of the 'entire dataset' method. Further analysis reveals that overall, the 'like for like' method has excluded 53 vacant units in the within-crisis survey, of which 43 were associated with the extended boundary issue. This implies that there were 10 vacant units that were not accounted for by the 'like for like' dataset, however they have not resulted from the extended boundary issue. So in such a case, applying the 'fixed boundaries' method makes a significant difference, as unlike the 'like for like' method, it includes the 10 outstanding vacant outlets. Analogically, the analysis of the pre-crisis vacant units indicates that only five of the 134 vacant outlets ceased to exist in the within-crisis survey, presumably having been demolished. The remaining 8 vacant units that were not accounted for by the 'like for like' dataset had undergone

some kind of modification but were still physically present in the Liverpool sample, so indeed, they were included by the 'fixed boundary' method.

Taking into consideration the above, it can be summarised that when applying the 'fixed boundary' rule the number of vacant units was set to 129 in the pre-crisis (134 in the 'entire dataset' less 5 due to boundary contraction) and 140 in the within-crisis period (183 in the 'entire dataset' less 43 due to the extended boundaries issue). Thus implementation of the 'fixed boundary' method implies that the absolute change of Liverpool Central's vacancy rate increases by +1.3pp, which is positioned between the values computed for the 'entire' and the 'like for like' datasets.

Figure 4.9: Pre-crisis retail units in Liverpool Central overlaid over the 'Non Like for Like' within-crisis data



4.3.3 Axminster case study - using polygons data

The 'entire dataset' for Axminster consisted of 137 units including retail, service and other non-retail units in the pre-crisis and 146 such units in the within-crisis period. The 'like for like' method indicates that there were 134 units, i.e. recorded as identical in both analysed periods. However, when only retail and services outlets were considered the equivalent figures were 111 in the pre-crisis and 123 in the within-crisis periods for the 'entire dataset' and 110 units and 112 units respectively for the

‘like for like’ method (see table 4.3). Taking into consideration vacant retail, it can be seen from Table 4.4 that there is a large discrepancy between both the ‘entire’ and ‘like for like’ datasets. Vacancy rate measured as a relative change has gone up by 50% for the ‘entire dataset’ contrasting sharply with the 12.5% computed for the ‘like for like’ method. That is to say that the ‘like for like’ dataset has accounted only for one additional vacant outlet between the pre-crisis and within-crisis periods, as opposed to the four vacant units recorded in the ‘entire dataset’.

Additionally, there was a large difference between both datasets, specifically in the within-crisis surveys when considering retail unit numbers. Thus, we could speculate that the issue of variable town centre boundaries has the potential to explain the unaccounted for vacant and retail outlets. Indeed, the detailed spatial analysis reveals that some of these changes were caused by the expanding/contracting boundary problem, but others resulted from subdivision of already existing units located within the fixed boundary, which had not been accounted for by the ‘like for like’ dataset.

Table 4.3: Axminster’s retail composition for the entire and like for like datasets

Retail class	Entire dataset			Like for Like		
	pre-crisis	within-crisis	relative change	pre-crisis	within-crisis	relative change
retail	44	51	15.9%	43	44	2.3%
services	59	60	1.7%	59	59	0.0%
vacant	8	12	50.0%	8	9	12.5%
Total	111	123	10.8%	110	112	1.8%

Once again, the ‘fixed boundaries’ method has been implemented as it accounts for the outlets that had their unique Goad ID changed due to a subdivision or a merger of previously existing units. The visual analysis of an identical part of the Axminster Goad plan in the pre-crisis period, shown on the top part of Figure 4.10 and the within-crisis on the bottom, clearly demonstrates that in the latter period there were three new vacant units - marked in red, seven new comparison units - shown in yellow and one new leisure unit in orange.

The small transparent circles indicate all units that have been accounted for by the ‘like for like’ dataset, which in turn help to determine the outlets that had been excluded by that method.

Figure 4.10: Clip of Axminster's 2006 retail plan

Figure 4.10 clearly indicates that in Axminster there were four comparison retail outlets, two vacant and one leisure unit resulting from boundary extension between the pre-crisis and within-crisis periods. However additionally, some of the newly recorded units including three comparison retail and one vacant unit had been created as a consequence of subdivision of previously existing outlets. Unlike the 'like for like' dataset, the 'fixed boundary' method, shown in Table 4.4, accounts for the three comparison retail and one vacant unit, retaining in total 47 retail and 10 vacant outlets.

Essentially, all retail categories have been impacted by the implementation of the 'fixed boundary' method, altering slightly the overall numbers, which in turn, affects

the applied measures of town centre economic performance. The values derived for ‘fixed boundary’ method are typically somewhere in between those calculated for the ‘entire’ and ‘like for like’ datasets. The degree of variation can vary for each retail/service category and each analysed centre, but it is the number of vacant retail that is affected most, impacting both measures M1 and M2. In the case of Axminster the relative change in vacant retail numbers (M1) between the pre-crisis and the within-crisis periods, calculated for the fixed boundaries, was 12.5% higher than in case of the ‘like for like’ method. The respective absolute change (M2) would be 1.8pp.

Table 4.4: Axminster’s retail composition for the ‘variable’ and ‘fixed’ boundary datasets

Retail class	Variable boundary			Fixed boundary		
	pre-crisis	within-crisis	relative change	pre-crisis	within-crisis	relative change
retail	44	51	15.9%	43	47	9.3%
services	59	60	1.7%	59	59	0.0%
vacant	8	12	50.0%	8	10	25%
Total	111	123	10.8%	110	116	5.5%

In summary, given that the number of vacant retail outlets is the most sensitive and most important indicator of how the economic crisis impacts on UK high streets, it needs to be highlighted that even a small change in vacancy rate can affect greatly the dependent variable. The ‘entire dataset’ accounts for all spatial changes in UK high streets that occurred between the pre-crisis and the within-crisis periods. However, as the town centre boundaries are allowed to contract and expand this method may not provide an accurate picture of the resilience and fragility of UK high streets and town centres. In turn, the ‘like for like’ dataset, excludes those retail/service outlets that are associated with the boundary shifts but, additionally, eliminates units existing in both periods that had undergone any kind of modification. This study proposed a solution to this problem which involves creating consistently defined fixed town centre boundaries that hold them constant over two periods of time and at the same time, account for all retail units that had been merged or subdivided in between the pre-crisis and the within-crisis surveys. It is firmly believed that the fixed boundary rule provides the best estimate of vacant units within the specified town centre borders

although due to the availability of only point data (geographical coordinates) occasionally the best proxy had to be used. Had the polygons for each town centre been obtainable, the retail vacant units within the fixed boundaries could have been specified even more accurately. More importantly, the dependent variable calculated by using the fixed boundaries estimates have delivered more robust results during the modelling stage with higher r-square and stronger t-values for the coefficients.

4.3.4 Base used to calculate occupancy/vacancy rates

A further issue faced by this study relates to the base from which occupancy rates, including the vacancy rates, were calculated. As Colliers' (2009) report pointed out, there was inconsistency of approaches to the assessment of high street performance amongst various research institutions. Some experts have calculated vacancy rates at a given point in time by expressing empty units as a percentage of all shop units (only), whilst others considered all outlets occupying the town centre (including non-retail) – resulting in a lower percentage. In some cases, such differences might be insignificant but in other cases, they might be substantial. In the case of our pre-crisis four-region sample the discrepancy between these two bases was large (9123 units), indicating that 14.6% of outlets were not considered by Goad surveys as retail or service. This study adopted the former approach – expressing empty units as a percentage of retail and service units only. If we had adopted the latter approach, then the overall combined vacancy rate in the pre-crisis period across our sample of 267 centres/high streets would have been 9% rather than 10.4%. The difference would have been even greater in the case of large centres, which were more likely to have a greater number of non-retail units. For instance, the pre-crisis vacancy rate in Manchester Central adopted by this study stood at 17%, a 3pp higher than the 14% when all Goad units would have been accounted for. Conversely, one of the lowest discrepancies were observed in the small high streets and shopping centres where the share of non-retail units was insignificant e.g. in Cribbs Causeway the relevant figures would have been 5% and 4.8% respectively.

4.3.5 Base used to calculate absolute vacancy rate changes

Similarly, the base used to calculate absolute vacancy rate changes needs some clarification. This study used both the pre-crisis and within-crisis town centre size as a base to calculate the change in vacancy rate. Importantly, in some cases the size of a town centre in those two periods was far from being constant. The discrepancy in centre size can be largely attributed to the expansion/contraction of town centre boundaries (described above) in two given time periods. The largest discrepancies were observed when the 'variable boundaries' approach was adopted; whilst the 'fixed boundaries' would have only minor inconsistencies and the 'like for like' method would see no change in centre size. Implementing the pre-crisis centre size as a vacancy rate base seems reasonable as it provides systematic estimates of vacancy rate change, relative to the constant number of pre-crisis units. However, the estimates provided by this method can be associated with disregarding both redundant and new built units. Moreover, the constant base had the capacity to provide somewhat biased results not fully depicting the dynamic nature of town centre configurations and boundaries. Given that this study has considered three different approaches to the town centre boundary issue, a distinctive base was adopted for each method: the 'like for like', 'fixed ' and 'variable' boundaries. Of course, in the case of 'like for like' method, both the pre-crisis and within-crisis centre size were matching, as only units with identical ID's were accounted for by this category. Further, the 'fixed boundary' method used the pre-crisis size which was not an ultimate solution, but possibly, it was the closest proxy depicting the semi-static nature of this approach. Finally, in the case of 'variable boundary' method, two independent bases were utilised to calculate vacancy rates in each analysed period. This was the most dynamic way fully reflecting the variable nature of vacancy rate changes between the pre-crisis and within-crisis periods, particularly in those centres that experienced some sort of development or regeneration.

4.3.6 Other methodological issues

Additionally, the potentially significant limitations of this study were related to the inconsistency of available data and missing variables. The former issue was already

considered earlier in this chapter, however it needs to be emphasised that despite a genuine effort made to design a robust study, scrupulously depicting the pre-crisis and the within-crisis dynamics of UK high streets and town centres, the irregularity of Goad surveys had the potential to affect the results. Although we strongly believe that the overall differential performance of UK town centres has been depicted relatively accurately, the performance of a few detailed retail/service categories could be somewhat less precise. For instance, the closure of Woolworths happened during our within-crisis survey creating inconsistencies in the way these stores were recorded by Goad surveyors, with some of them still trading, others having been vacated and some, even having already been sublet.

However, it was the issue of missing variables that could be viewed as posing a major threat to this study, in particular, to the statistical modelling of vacancy rate change, where deriving the factors associated with enhanced town centre vitality was one of the key aims. It was crucial to consider as many such factors as possible; omitting any important dynamic could deteriorate the robustness of the model at best, and, at worst, alter the results. It has to be acknowledged that although this study considered more than 20 such indicators, we had no access to, some which undoubtedly would enhance our model. Aspects such as different parking policies including parking charges, footfall counts and business rents are viewed as playing significant roles in the economic health of UK town centres and high streets; however we had no access to systematic information on these data. Parking policy and fees are believed to be particularly important to sustaining a healthy town centre, especially during tough economic conditions. Indeed, as Government public spending cuts resulted in a decline of consumer disposable income, shoppers are more than ever driven by 'value for money'. Therefore free or reasonably priced car parks could retain some consumers in traditional high streets as opposed to out-of-town shopping centres and retail parks who offer free parking. Footfall count is a reflection of retail strength and it is a key element of understanding the economic performance of town centres. The comprehensive measurement of footfall should include not only the number of visitors to shops but also other attractions in the area such as public, health, religious services or major businesses (Genecon, 2011). Finally, the level of business

rates is a crucial factor directly affecting the number of shop closures and openings in a particular location. Business rates which are inadequate to the generated footfall may drive vendors out of particular locations, especially the secondary shopping areas. Presumably, omission of either of these variables may also have played a role in our inability to retain a catchment affluence variable in the cross-regional model and have resulted in significantly lower values of the coefficient of determination.

Chapter 5: Empirical results – four region sample

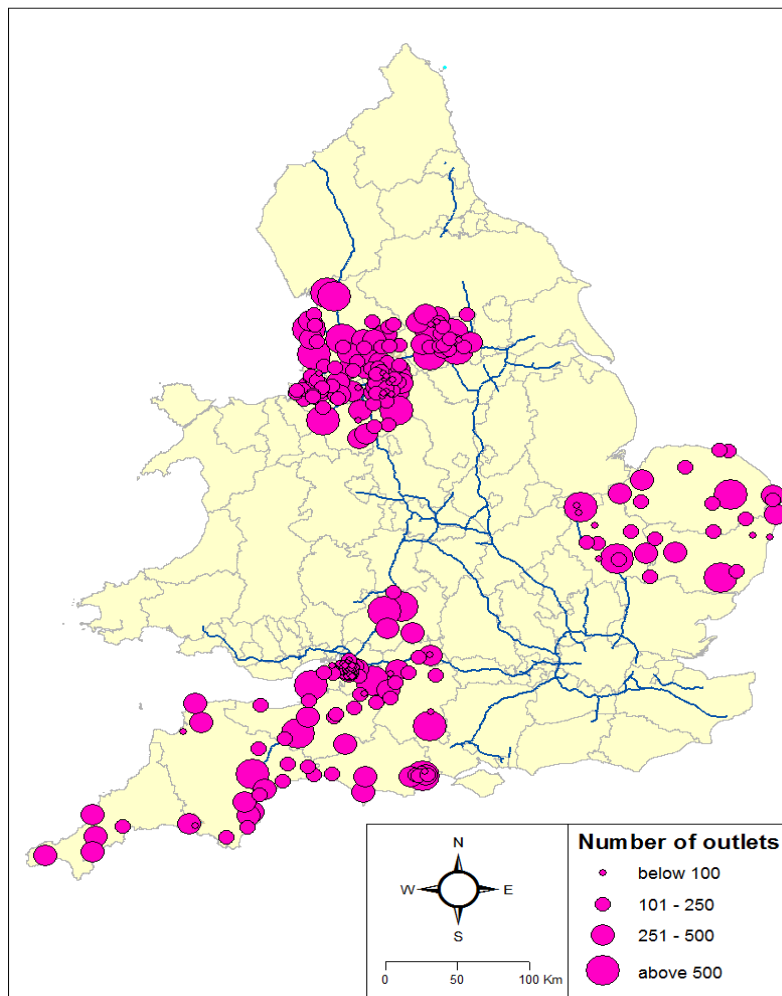
This chapter examines the complex adjustment of UK high streets and town centres to the onset of the 2008-09 economic crisis. It begins from the explanatory data analysis which provides characteristics of the 267 retail centres sample, located in four UK regions. Further, using Goad surveys for the cross-regional sample, this chapter assesses the differential economic performance of UK town centres between the pre-crisis and the within-crisis periods. This task has been achieved in two separate but complementary stages. First, the descriptive analysis has depicted changes in major retail/service categories recorded between the pre-crisis and within-crisis surveys. Second, by means of statistical modelling, the variation in vacancy rate change has been examined. As a result, a number of indicators associated with enhanced resilience of UK high streets to the shock of economic crisis have been derived, leading to novel and policy significant findings. Of particular interest was the finding that the effects of both policy-compliant corporate foodstore entry and diversity, depicted by high proportion of independent retailers, should be seen as beneficial to the vitality and viability of UK high streets, despite popular debate portraying those two factors as polar opposite.

5.1 Study area and the pre-crisis characteristics

The analysed sample comprised 267 high street and town centres located in four UK regions: South West, East Anglia, North West and West Yorkshire. The sample has been divided into two groups: northern and southern depicting the persistent divide in regional performance, recently evaluated by Dorling (2010). Each retail centre from our sample had the Goad Experian survey completed in both the pre-crisis and within-crisis periods allowing systematic assessment of their complex adjustment to the shock of economic crisis. The northern cluster of 117 retail centres comprised predominantly urban areas including three major agglomerations of Liverpool, Manchester and Leeds-Bradford. On the contrary, the southern group of 150 retail centres contained

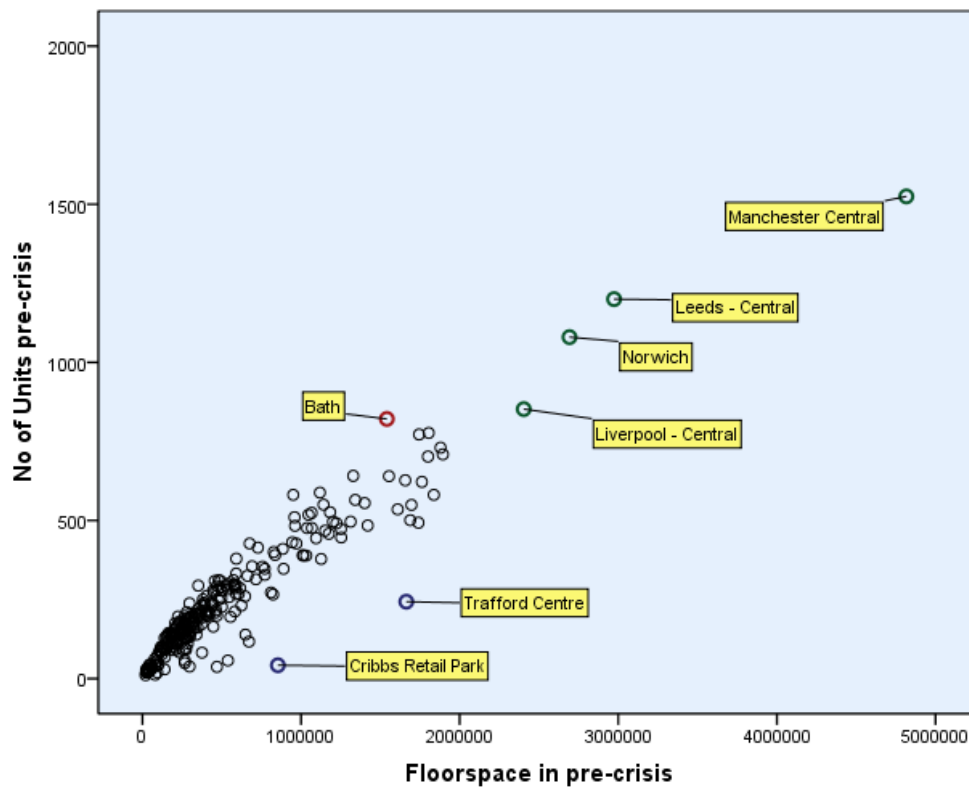
predominantly smaller market towns with only one large agglomeration - Bristol, and several medium-size urban centres such as Bournemouth, Gloucester, Exeter, Norwich, Peterborough and Cambridge. In terms of retail size, the entire sample comprised approximately 63,000 retail/service units in the pre-crisis period, with an aggregated retail floorspace of about 140 million Sq Ft. The average (mean) centre size across the entire sample was 237 units, which was a relatively large size, given that only about 60 centres from the four-region samples have fallen within the higher end of the retail hierarchy - the regional, sub-regional and major district centres. Taking into consideration the geographical split, an average southern high street/town centre was somewhat smaller in size at 206 units, comparing to the 276 outlets in the northern part of our sample. Figure 5.1, depicting the 267 centres by size, reveals that both sub-samples comprise mainly medium and large retail centres.

Figure 5.1: Spatial distribution of the four-region sample by centre size (no. of units)



However, the southern group contains also a significant number of small centres, predominantly located in Bristol. The sample did include a relatively large number of local centres and shopping parades which in some cases comprised only 15-20 retail/service outlets. Taking retail floorspace as a measure of centre size, it can be seen that an average high street/town centre in our four-region sample occupied 0.52 million Sq Ft in the pre-crisis period. Northern centres with an average retail floorspace of 0.63 million Sq Ft, were yet again larger than their southern counterparts with a respective figure of 0.44 million Sq Ft. Some centres were exceptionally large, in particular those located in the northern part such as Manchester Central and Leeds Central comprising more than 1,200 units each. Furthermore, several other town centres contained more than 750 retail/service outlets, namely Norwich, Liverpool Central, Bath, Cheltenham and Southport. Similarly, in terms of occupied retail floorspace recorded in the pre-crisis surveys, Manchester Central was unquestionably the largest analysed centre with 4.8 million Sq Ft, followed by Leeds Central with 3.0 million Sq Ft, then Norwich and Liverpool Central with 2.7 and 2.4 million Sq Ft respectively.

It appears that the vast majority of retail centres displayed a strong correlation between the unit numbers and occupied retail floorspace; however, there were some exceptions. As Figure 5.2 indicates, a number of retail centres demonstrated a different pattern, in particular, the Trafford Centre and Cribbs Causeway, which occupied very large floorspace relatively to their outlet numbers. This can be explained by the fact that both centres are regional shopping centres, which in contrast to a traditional UK high street comprise rather large and modern units, predominantly occupied by multiple retailers. In effect, other shopping centres from our sample displayed similar trends; however, they were not as apparent. Conversely, there were few centres with a large numbers of outlets which occupied relatively small retail floorspace. For instance, Bath in the pre-crisis period was the fifth largest centre in terms of outlet numbers but came 19th when floorspace was considered. Presumably, it was due to the peculiarity of this historic and affluent town centre, featured with stylish boutiques and a large selection of independent shops.

Figure 5.2: Relationship between pre-crisis number of units and the floorspace

When comparing the numbers of retail/service outlets recorded in the pre-crisis and within-crisis surveys, Goad Experian surveys indicate that the overall number of retail and service units had increased by +1.4% in the entire four-region sample. Taking into consideration retail floorspace, even bigger growth at +3.3% was recorded, which in real terms meant that there has been almost 4.6 million Sq Ft of new retail space added recently. As described in detail in the previous chapter, town centres constantly evolve, thus their boundaries are never static. Although the overall increases, or in some cases decreases, in centre size were minor in most high streets and town centres of our sample, some retail centres observed substantial changes in their size between the analysed periods. In particular, Bristol Broadmead, after opening Cabot Circus, had experienced an exceptionally large increase (+41%) in the total number of units. Moreover, several other centres (e.g., Swindon McArthur Glen, Bournemouth Castlepoint or Liverpool Central) had also seen significant growth in their overall size, ranging from 18% to 24%. Conversely, centres such as Rothwell, Manchester Cheetham Hill and Bristol Avonmouth Village had decreased their total number of outlets by at least -10%. The main reasons responsible for outlet numbers growth in a

town centre include newly completed retail trading space (e.g. McArthur Glen and Castlepoint) or inclusion of entire new parts of a city by a subsequent Goad survey (e.g. Liverpool Central). Large contractions, on the other hand, are often related to regeneration schemes taking place during one of the surveyed periods, where outdated and predominantly vacant units are demolished and replaced by new retail developments. This was the case in Rothwell and Manchester Cheetham Hill, where corporate food retailers, adopting the town centre regeneration agenda, have effectively become the anchor stores.

In addition to the centre size, other pre-crisis characteristics attributed to UK town centres and high streets have played a crucial role in understanding their economic performance during the economic crisis. The retail/service mix, depicting occupancy rates of each broad retail/service category suggested that comparison retail and leisure services were prevailing in the four-region sample during the pre-crisis period, occupying respectively 37% and 20% of the total number of retail/service units. The occupancy rates of remaining categories varied only marginally and ranged from 8% in the case of convenience retail to 12% in the case of retail services. Taking into consideration the geographical split, both southern and northern parts of our sample had almost identical aggregated retail mix with the exception of comparison retail, which had a slightly lower share in the North (35.7%) than in the South (35.7%). Vacant retail, shown in Table 5.1, which was calculated as the percentage of empty retail outlets in the pre-crisis survey, accounted for 10.4% of the total number of retail/service outlets in the entire sample. The average regional vacancy rates, standing at 8.6% in the South and 12.1% in the North, have indicated the potential of diverse dynamics and underlying patterns responsible for the relatively strong South-North divide.

The next indicator, potentially important to the performance of UK high streets during the economic crisis, is the ratio of service outlets relative to retail units, which simply provides broad information on whether a particular region or retail centre was service or retail oriented. In the case of our four-region sample, this ratio was 1.2 implying that, on average, for each retail unit there were 1.2 service outlets. In the

context of South-North divide, services were prevailing in the southern part of our sample, although the difference was only marginal.

Table 5.1: Characteristics of the cross-regional sample

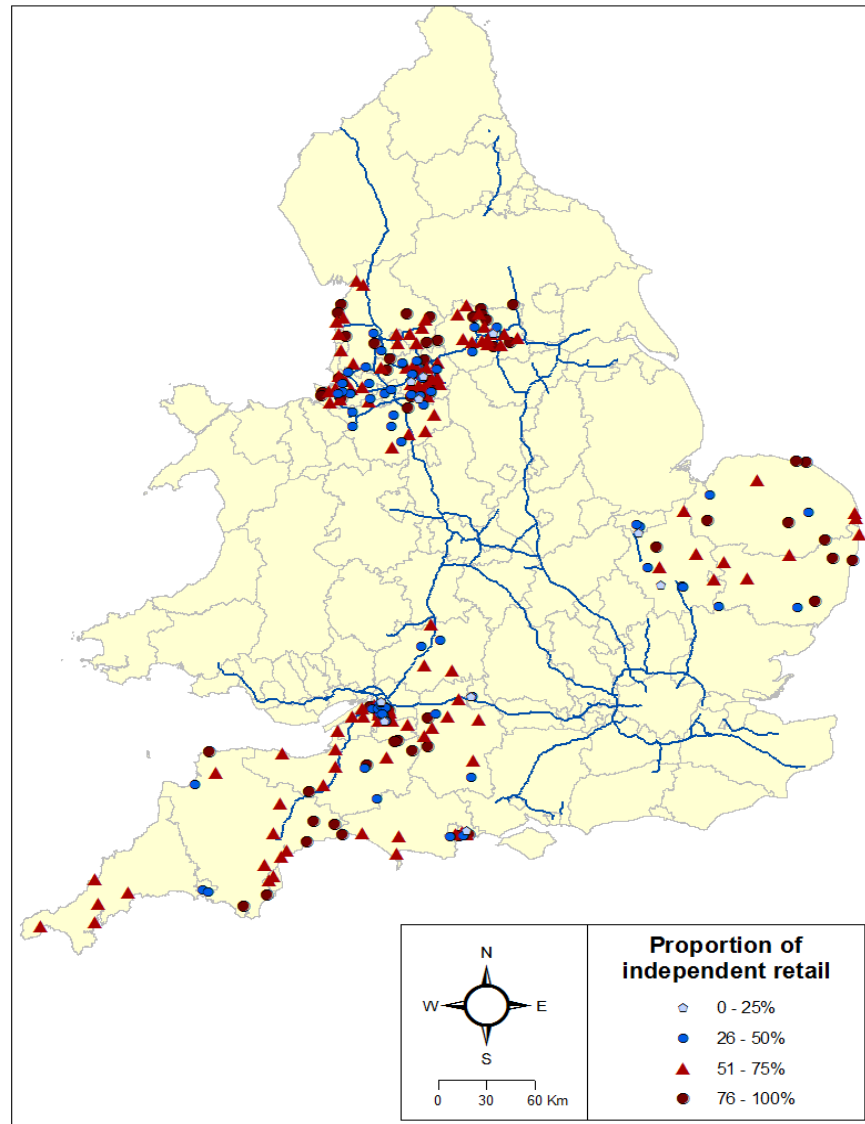
Attribute	Entire sample	South	North
Average centre size (units)	237	206	276
Vacancy rate (%)	10.4	8.6	12.1
Services vs. retail (ratio)	1.2	1.25	1.15
Independent retail (%)	62.5	64	60.5

A few analysed centres such as Cambourne, Bristol Whitchurch and Bristol Baldwin Street appeared to have an exceptionally high number of services relative to retail outlets, recording the ratio of 4.0 and above. The first two of those centres had somewhat similar configurations as both were remarkably small in terms of unit numbers; anchored by large corporate foodstores, they additionally comprised a small cluster of complementary service outlets. Had the retail floorspace been used in those two instances, the ratio would have been considerably different. Baldwin Street on the other hand, is a predominantly leisure-oriented area, with an exceptional range of bars, public houses and restaurants, serving the large labour force working in nearby offices, and a high student population (DTZ, 2007). Conversely, several shopping centres and designer outlets, present in the dataset, had the ratio of retail to service outlets extremely low, at 0.4 and lower.

Finally, in order to evaluate more comprehensively the retail mix in the analysed centres, of central importance was to establish the proportion of independent retailers relative to the national multiples. It is widely accepted that high diversity represented by strong presence of independent retailers can be associated with *'extra value that small, independent and genuinely local shops provide in terms of economic benefit, environmental distinctiveness and the social glue that holds communities together'* (NEF, 2006, p.23). The results have revealed that in the pre-crisis period independent retailers were prevailing, representing 62.5% of the total number of retail outlets across the 267-centre sample. Furthermore, a discrepancy between the southern and northern part of our sample was noticeable with the respective average values

standing at 64% and 60.5%. Figure 5.3 depicts the spatial distribution of sample retail centres distinguishing those with high and low proportions of independent retail.

Figure 5.3: Spatial distribution of retail centres with high and low proportions of independent retail



It implies that the centres with high proportions of independent retailers in the pre-crisis, shown in brown/red colour, were scattered around the entire sample, however those with low proportions of independent retailers, shown in blue, slightly prevailed in the North. To some extent, this could be explained by the fact that the southern subsample contained a large amount of market towns which historically had been renowned for their diversity, reflected by a high proportion of independent

retail. Indeed, several small local retail centres, notably all located in the Bristol area, did not contain any multiple retail outlets, comprising solely small independent shops. In contrast, as Figure 5.3 indicates, the locations with the smallest share of independent retailers predominantly included town centres within the largest urban areas such as Manchester, Liverpool, Bristol, Bournemouth, Plymouth and Peterborough. Additionally, the small number of out-of-town shopping centres present in our data had similar characteristics. Indeed, four retail centres recorded solely multiple retail outlets in both Goad surveys. Two of those centres, namely Cribbs Retail Park and Peterborough Serpentine Green Shopping Centre have simply confirmed the fact that out-of-town developments, as a retail norm, have been reinforcing the big-box format, predominately occupied by multiple retailers (Genecon, 2011). Cambourne and Bristol Whitchurch on the other hand, already discussed in the context of exceptionally high ratio of services vs. retail outlets, had to be considered at this stage as potential outliers.

5.2 Descriptive analysis of changes in retail composition

The descriptive analysis depicts differential performance of UK town centres and high streets by retail/service category utilising the so-called composition rates, which are the percentages of each retail/service type relative to a total number of outlets in particular centre, region or the entire sample. Such analysis provides valuable insights into the differential performance of UK town centres between the analysed periods by illustrating the change in each retail/service category, including vacant outlets. It also provides a systematic base for an assessment of UK retail centres' adjustment to the shock of economic crisis and other drivers of change. Two measures of change, the relative change (M1) and the absolute change (M2), were calculated for each retail and service type. Initially, those measures have been computed for the entire four-region sample and then independently for each region, so the performance of southern and northern groups could be compared. The analysis computing the composition rates has considered both the number of units and the retail floorpace. As suggested by some researchers (e.g. Findlay and Sparks, 2010), the implementation of both measures of

centre size offers a wider scope to investigate the changes in configurations of UK high streets and town centres.

Table 5.2: Broad and compiled detailed retail categories used by the study

Goad subclass	Goad category
Comparison	Antique and Art goods Booksellers Sport and leisure goods Charity Shops Clothing and footwear Chemists and Beauty shops DIY and households goods Furniture and furnishings Cards, gifts and toys Florists Jewellers Telephones Music, video and photography Department stores
Convenience	Bakers Butchers and fishmongers Convenience stores Supermarkets Delicatessen and healthy foods Greengrocers CTN and off licences
Retail Services	Health & Beauty Travel agents Dry cleaners Opticians Photo services Post Offices
Financial and Business	Estate Agents Printing and copying Building societies Retail Banks Legal services Employment agencies Financial services
Leisure services	Restaurants Cafes Fast foods and takeaways Pubs and bars Hotels and guest houses Sport and leisure

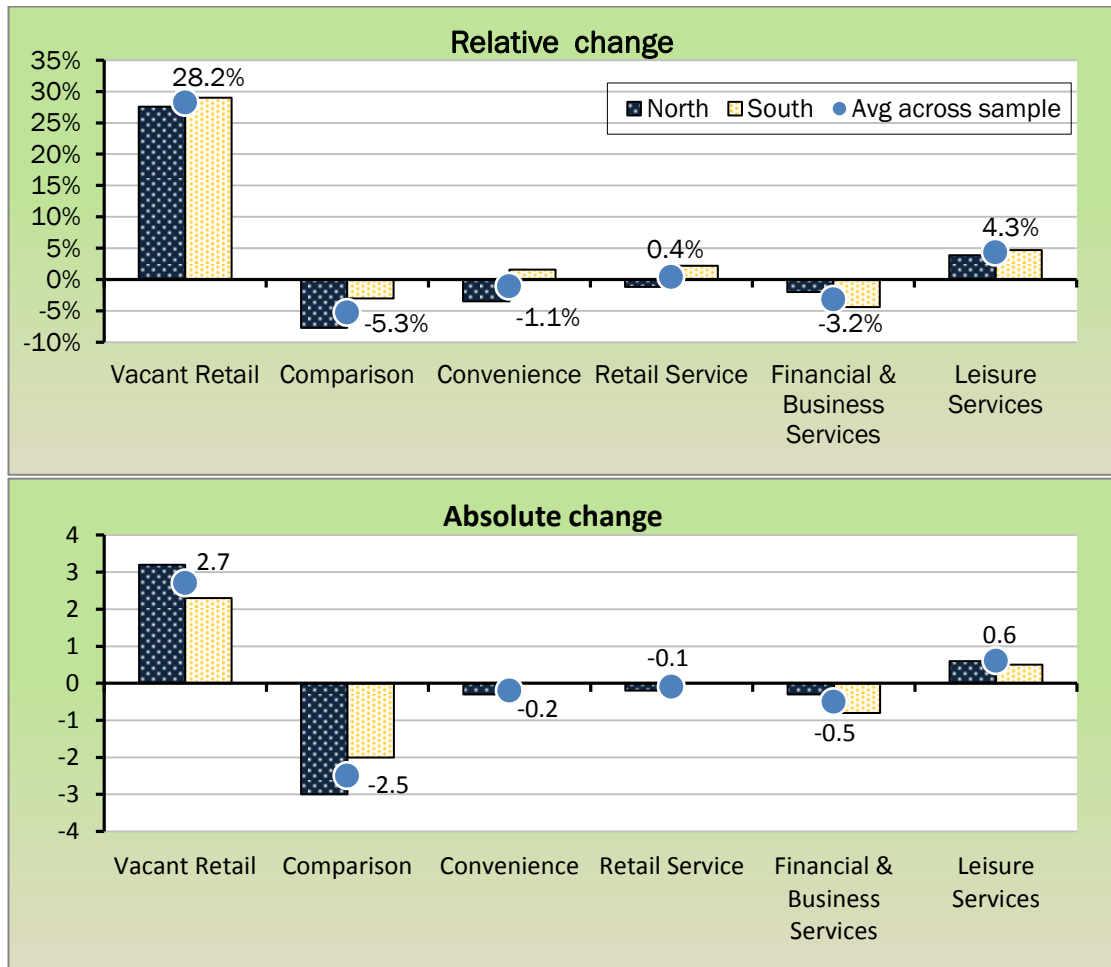
Further, the study has accounted for the two-tier retail/service classification adopted by Goad surveys. Firstly, it derived changes for the broad retail/service types, referred to as ‘Goad subclasses’ and secondly, examined the differential performance of their components, the so-called ‘Goad categories’ accounting for a much more

detailed division. As some 'Goad subclasses' comprised a large number of 'Goad categories' the closest and most related types of businesses were joined together in order to provide a more comprehensive picture in visual terms, especially when presented on graphs. This approach had also some limitations, with those most apparent having the capacity to mask some of the observed decline or rise in particular categories due to the amalgamated categorisation. Table 5.2 shows the breakdown of 'Goad subclasses' into the amalgamated 'Goad categories' employed by this study. The broad comparison retail subclass comprises the largest number (14) of smaller categories, whilst other broad retail/service types contain between six and eight smaller components. Crucially, vacant retail includes only one category and does not account for any non-retail vacant outlets present in our dataset.

5.2.1 Overall changes in retail composition rates

As already mentioned in previous chapters, the closures of retail/service units, leading to an increase in vacancy rates, are most commonly used indicators of the impact of the macroeconomic shock of economic crisis experienced by UK town centres/high streets. Figure 5.4 shows that in our four-region sample, between the pre-crisis and within-crisis surveys, vacant units increased by 28% in terms of relative-change (M1 measure), from an average of 10.4% to 13.1%, that is to say, 2.7 percentage points (pp) on absolute-change (M2 measure). Taking into consideration the geographical split, centres from the northern part of our sample have observed higher rates of retail outlets closures, recording an overall rise in vacancy rate of +3.2pp, measured as absolute change. This increase was calculated from a historically high vacancy rate at 12.1% in the pre-crisis to 15.3% in the within-crisis period. In the South the rise in vacancy rate was smaller at +2.3pp, from the 8.6% in the pre-crisis to 10.9% in the within-crisis period. Although the M1 measure indicates that the overall increase in vacant unit numbers was greater in the South than in the North, this was entirely due to its low pre-crisis base, as the actual number of new-recorded vacant units in the South was substantially smaller. The greatest adverse impact of the shock of economic crisis appears to have been felt by the comparison retail as this broad retail category has contributed most to the recorded closures of retail outlets.

Figure 5.4: Relative (M1) and absolute (M2) change between pre-crisis and within-crisis, by retail broad category



Overall, taking into consideration the number of units, it could be seen that across our 267 centres more than 1200 comparison retail outlets were closed between the pre-crisis and within-crisis surveys, accounting for a -5.3% decline in the relative change, which was an equivalent of -2.5pp on the absolute measure. The differential performance of comparison retail has been significantly worse in the North, declining -7.7% on relative change, compared to -3% in the South.

In contrast, convenience retail, financial and business services, retail services, and leisure services contributed far less to the increases in vacancy rates. Indeed, Figure 5.4 shows that in each of these broad categories, with the exception of financial and business services, there was some evidence of a growth, both in terms of relative change in unit numbers and in square feet of floorspace. Convenience retail and retail

services, despite recording small declines for the entire sample, measured as relative change, have shown some resilience in the southern regions, where both categories have enjoyed small growth in outlet numbers, at 1.6% and 2.2% respectively. Leisure services were the only broad service category that recorded substantial increases across all regions in both relative and absolute measures. As the 2008-09 economic crisis has started with the 'credit crunch', perhaps there is little surprise that financial & business services were second to comparison retail in terms of the most adversely affected broad categories, observing widespread closures of its outlets. Although, measured in absolute change, financial services declined only -0.5pp across the four-region sample, the relative change at -2.5% was not distant from the decline recorded in comparison retail. Nevertheless, when considering the geographical split, financial & business services, was the most adversely affected broad retail/service category in the South, recording decrease of -4.4%.

Remarkably, the picture of change observed in broad retail/service types across the 267 centres was somewhat different when retail floorspace was considered.

(i) The relative increase in vacant retail, reaching 35%, was larger than one recorded by the number of units. This presumably could be explained by the substantial share of newly built, large and modern retail floorspace which remained vacant during the economic crisis.

(ii) The broad categories that observed increase in retail floorspace included not only leisure services (+2.9%), but also convenience retail (+2.2%). The increase in the latter was mainly due to opening brand new corporate foodstores both large supermarkets and small convenience stores.

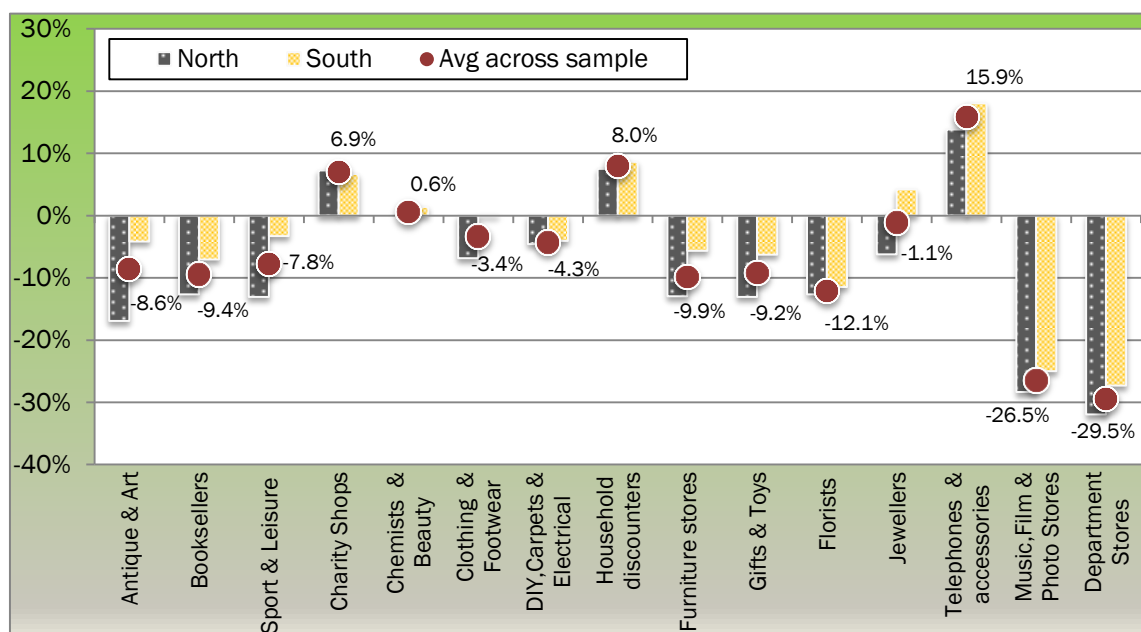
(ii) Most adversely impacted broad retail/service categories comprised financial & business services (-3.6%) and retail services (-2.2%) with comparison retail, rather surprisingly, recording only a minor decrease at -0.2%.

5.2.2 Change in comparison retail categories

Almost all types of retailers within broad comparison retail category performed weakly as declines in the discretionary spending have led to subdued demand and deeper exploration of alternative retail channels offering better value such as e-tailing.

As Figure 5.5 shows, the hardest hit appeared to have been department stores; music, video, and photography retailers; florists; furniture and furnishings retailers; booksellers; and cards, gifts and toys retailers - each type recording a relative decline (measure M1) in the range from -29% to -9%. Closures of more than 800 Woolworth's stores across the UK followed by the MFI and Adams, to a degree, may explain the decline in department & variety stores as the crash in the housing market can be blamed for the misfortune of furniture and furnishing retailers.

Figure 5.5 Relative change between pre-crisis and within-crisis in comparison retail



Furthermore, although the decrease in disposable income adversely affected some small independent businesses such as florists or cards, gifts and toys, the rapidly expanding internet sales should be associated with the declines in bookshops, music & video and photo retailers. Those retailers had suffered from the increasing e-commerce competition considerably before the 2008-09 economic crisis (Weltevreden, 2007; Burt and Sparks, 2003), however it seems that the shock of recession exacerbated the challenges faced by traditional British high streets. Nevertheless, the impact of economic crisis on comparison retail was not uniformly negative. Telephones and accessories retailers; household discounters (comprising 'pound shops', household bargain shops, etc.); and to a much lesser degree 'chemists

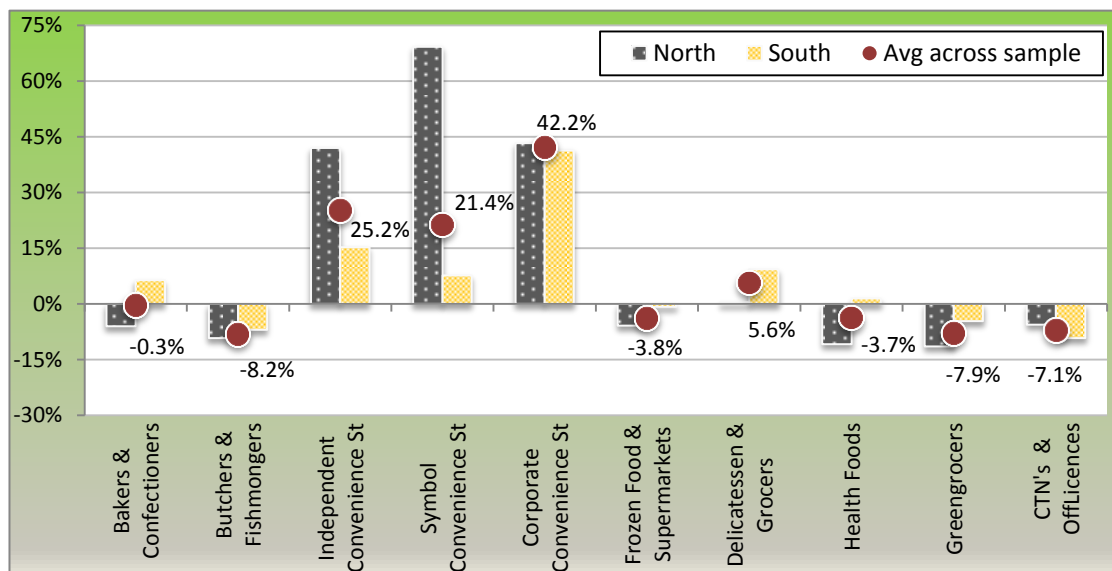
and beauty' retailers recorded increases rather than declines. Indeed, telephone retailers recorded a relative increase of almost 16% and household discounters of 8%. Moreover, as many types of comparison retailers closed their units, the charity shops moved into some of the vacated space and as a result, they increased their presence on high street by almost 7%. Furthermore, that trend was largely mirrored by household bargain stores as their increases were mostly associated with filling the vacant space e.g. large share of former Woolworths stores were filled by 'Poundland' and '99p stores' (LDC, 2010). In terms of the geographical split, the majority of comparison categories, with the exception of jewellers, 'chemists and beauty' shops, exhibited comparable trends. Rather surprisingly, jewellers have observed a growth of +4.2% in the South whilst declining by -6.2% in the North, and 'chemists and beauty' retailers recorded a small growth at +1.4% in the South and remained unchanged in the North. Finally, some types of comparison retailers such as booksellers, 'antique and art', 'sport and leisure' and furniture retailers, although decreasing their numbers in the entire four-region sample, performed noticeably weaker in the northern part of our sample, declining more than -10%.

5.2.3 Change in convenience retail categories

In the case of convenience retail, Figure 5.6 shows that only three categories namely butchers and fishmongers (-8.2%), greengrocers (-7.9%), and confectionery, tobacconists, and newsagents (CTNs) and off-licences (-7.1%) experienced relative declines close to the lower bound (-9%) figure recorded by the hardest hit types of comparison retail. The decline in unit numbers in these three types of convenience retail was comparable across the four-region sample with the exception of greengrocers, which had the insolvency rate twice as high in the northern as in the southern part of our sample. Furthermore, the decrease in supermarkets predominantly recorded in the North can be attributed to the closure of Kwik Save stores, which went into administration in 2007, rather than to the adverse effects of the economic crisis. This was confirmed by strong and continuous growth of the 'big four' supermarkets recording increases in the range of +14% between the pre-crisis and within-crisis period. Clearly, there was other evidence that the convenience sector

has been comparatively resilient to the onset of the economic crisis. The strong growth in small food-retail-based convenience stores during the early to mid-2000s, revealed by both the Competition Commission (2007; 2008) and the Southampton research team (Wrigley, 2007; Wrigley et al. 2009a) and reported to the Groceries Market Inquiry (2006-08), appears to have been maintained despite the shock of economic crisis. Indeed, as in those earlier findings relating to the first half of the 2000s, significant increases (above 20%) were recorded not only in corporate convenience stores, but also among 'symbol group' and 'independent' retailers.

Figure 5.6 Relative change between pre-crisis and within-crisis in convenience retail



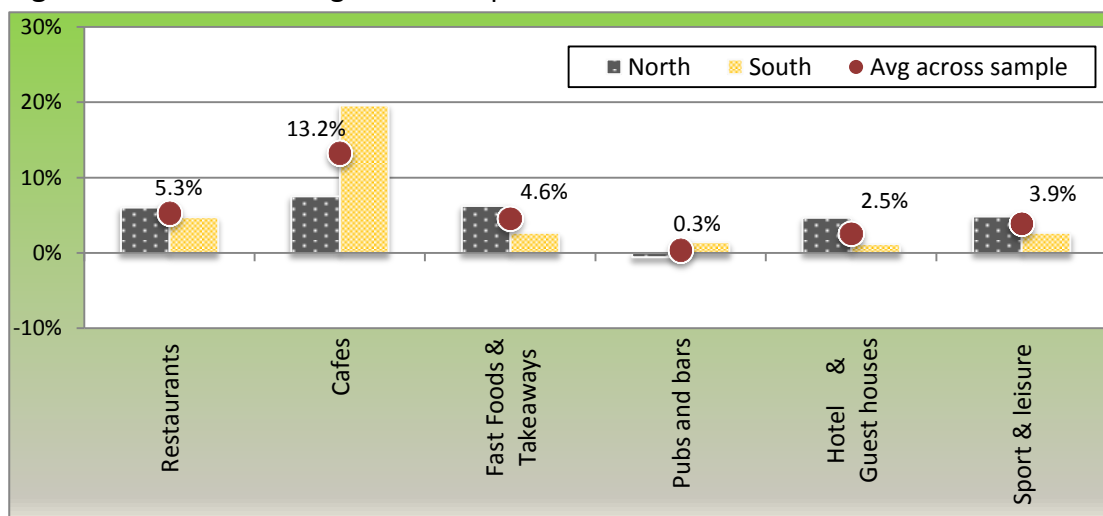
The growth in the former can be largely attributed to the independent retailers joining various symbol groups in search of benefits exclusive to larger organisations such as lower purchase price or bigger distribution network, but also in an attempt to enhance their standards in order to fulfil the raising consumer expectations (Competition Commission, 2006). The latter, however, has been claimed by some commentators, especially during the early to mid-2000s, to be associated with the growth of ethnic retail (particularly in London and prospering southern England), or what Guy (2008) referred to as the 'Polish grocer' effect. However, growth during economic crisis was not confined to the small food-retail-based convenience-store sector. Although some specialist small food retailers declined in the northern part of our four-region sample, there was evidence, in the southern part, the 'delicatessens'

'bakers', and 'health foods' have increased numbers, with the two former recording gains of between 5% and 10%.

5.2.4 Leisure services

Leisure services as the only retail/service category experienced consistent positive growth in total unit numbers across all analysed regions. Such a trend was observed in 76% of sample town centres and high streets and it was particularly visible in centres towards the higher end of the retail hierarchy. As Figure 5.7 shows that growth was recorded for almost all categories of leisure services (a decline in pubs is masked by the categorisation in Table 5.2). In particular, there was a substantial (+13%) relative increase in cafes, a finding duplicated at the local level in an earlier study of the transformation of the retail structure of a market town in South West England (Wrigley et al., 2009b).

Figure 5.7: Relative change between pre-crisis and within-crisis in leisure services



In addition, restaurants and 'fast foods and takeaways' have increased their numbers noticeably, by +5.3% and 4.5% respectively. *The Independent*, (25 Nov 2009, p.6) indicated that those perceived to have a healthy eating image have grown considerably during the recession.

'Among the UK's biggest fast-food chains, Subway grew its number of restaurants by 25.9 per cent Domino Pizza ramped up its outlets by 19.8 per cent while the store numbers of some of the sector's established chains have declined.'

For instance, McDonald's saw a slight decrease in its number of restaurants and Burger King and Wimpy's outlet count fell by 8.3 per cent and 12.9 per cent respectively'.

As noted above, public houses observed a decline of nearly -5% with recession symptoms such as job loss and lower disposable income, coupled with the beer tax increases and competition from supermarkets have been widely blamed. A British Beer & Pub Association (BBPA) representative in an interview with The Sunday Times (29 July 2009, p.3) expressed his concerns about the future of a traditional British pub:

'The biggest impact is the recession. There are fewer people out and fewer people spending money in pubs and bars. Pubs are diversifying but, unfortunately, if you are a community pub you can't transform yourself into a trendy town centre bar'.

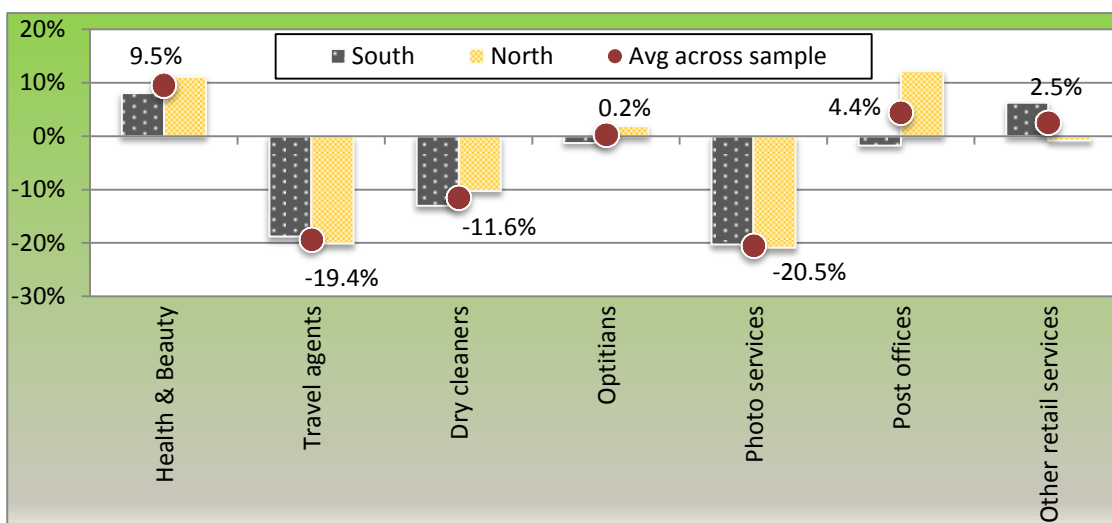
Nevertheless, two opposite trends within this service category were increasingly becoming apparent, with local pubs serving small communities having been hit worst, and establishments that serve foods, such as gastro-pubs, were more resilient and by contrast, branded pubs and café-style bars were faring relatively well.

5.2.5 Retail services

Although retail services as a whole demonstrated some resilience recording small relative growth across the four-region sample, the detailed picture, shown on Figure 5.8, was rather mixed. Three of its smaller categories, namely health and beauty, post offices and other retail services, observed growth in the range of +2.5% to +9.5%, but travel agents, photo services and dry cleaners appeared to have suffered from large declines exceeding -10%. In fact, the declines in photo services and travel agents numbers were almost as high as those noted amongst most adversely affected comparison retail categories. Yet again, technological advancement and online retailing are more likely causes for declines in those categories, rather than the economic crisis. The latter however, associated with lower disposable income, could accelerate those long-term changes often viewed as evolutionary trajectories of traditional UK high streets (Wrigley and Dolega, 2011).

Nevertheless, what is rather surprising is the rise in post office outlet numbers between the pre-crisis and within-crisis periods, as services they offer have been increasingly substituted by emails and mobile phone texting, resulting in lower profit and declining number of customers. Conversely, the growth in health and beauty services, reported in the first half of the 2000s could be attributed to the growth in disposable incomes; however, that trend appears to have continued despite the shock of economic crisis.

Figure 5.8: Relative change between pre-crisis and within-crisis in retail services



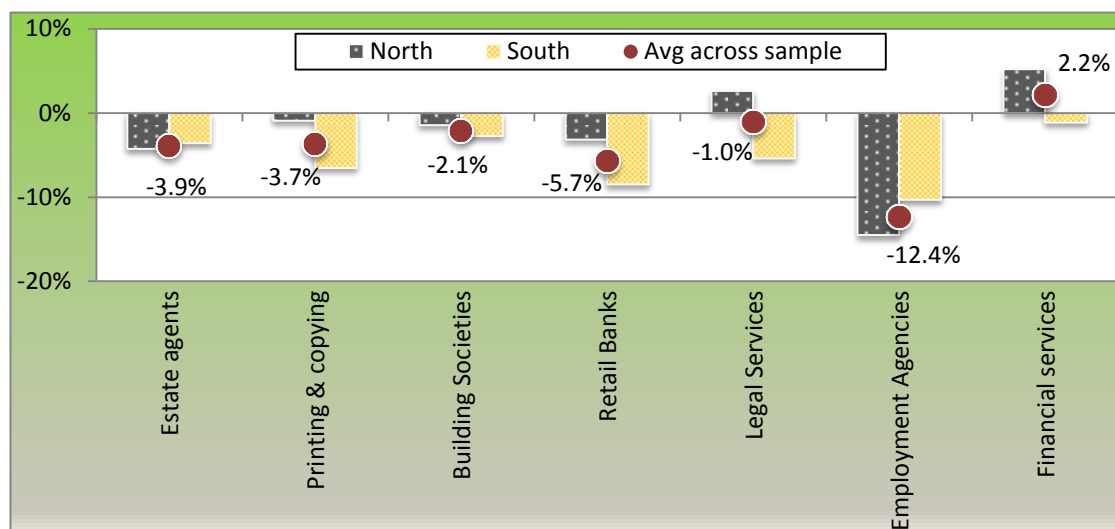
5.2.6 Financial and business services

Financial and business services were the second most adversely affected broad retail/service type, following comparison retail. Overall, this service category declined by -3.2% between the pre-crisis and within-crisis periods in terms of relative change, which represented a -0.5 pp decrease in occupancy rates, measured as absolute change.

As Figure 5.9 shows, virtually all constituting categories, with the exception of financial services, had declined between the pre-crisis and within-crisis surveys. The employment agencies recorded the largest decline in outlet numbers (-12.4%), which was related to the subdued demand for employment typically associated with the economic crisis. The restrained lending between banks, unfavourable stock exchange

conditions and crash in the housing market can explain to a large extent the decline in retail banks, building societies and estate agents. The decrease in printing and photocopying outlets is presumably associated with the advancement in technology and the availability of portable and increasingly popular 'all in one' printers. Perhaps somewhat more surprising is the relative strength of financial and legal services in the northern part of our sample, recording small gains in outlet numbers despite the unfavourable economic conditions and contrasting sharply with large declines observed in the southern part.

Figure 5.9: Relative change between pre-crisis and within-crisis in financial and business services

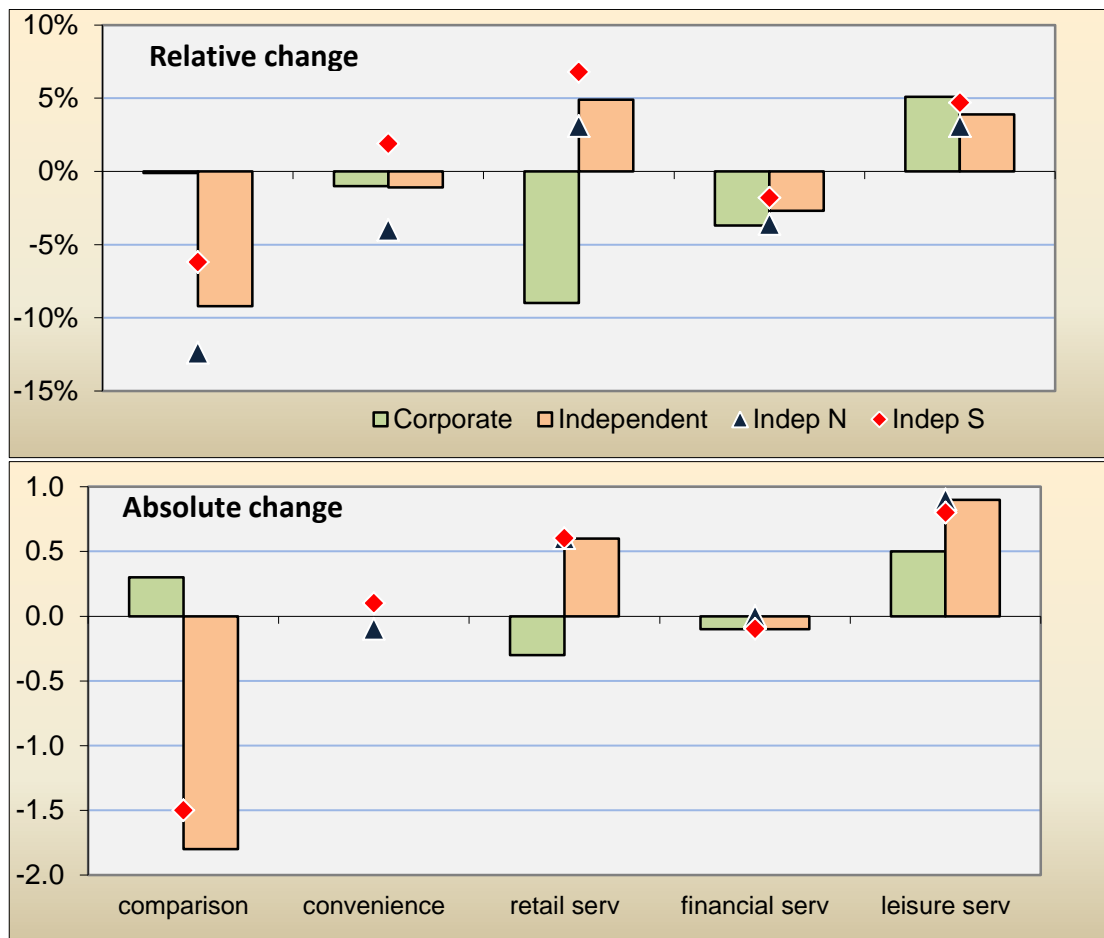


5.2.7 Differential performance of corporate vs. independent retailers

Having completed the descriptive analysis for both broad types and more detailed retail/service categories, of central importance was to compare the differential performance of corporate and independent retailers. Such analysis has the capacity on the one hand to depict similarities and differences in the response to the economic crisis between corporate and independent retailers and on the other hand, to identify the causes of those differences. It is important to note that vacant retail units have been excluded from this analysis because it was not possible to establish what share of empty units has resulted from closures of corporate or independent retail outlets. One

implication of this approach was that the base used to calculate occupancy rates of particular retail/service types was slightly reduced. Nevertheless, such analysis offers new and valuable insights into the changes in configurations of UK high streets, recorded by the corporate and independent retailers. Figure 5.10 shows the relative and absolute changes recorded by broad retail/service types, accounting for both the corporate-independent retail divide and regional variations.

Figure 5.10: Differential performance of corporate and independent retailers by retail/service type, showing the relative and absolute changes



The regional changes in the independent retail outlets have been shown by using black triangles for northern and red diamonds for southern centres. Figure 5.10 indicates that the response of multiple and independent retailers to the onset of economic crisis was not uniform. In terms of the comparison retailers there was a clear divide in the response to the impacts of economic crisis, with independent retailers

accounting for much larger relative decline at -9.2% than the multiple retailers at -0.1%, measured for the entire four-region sample.

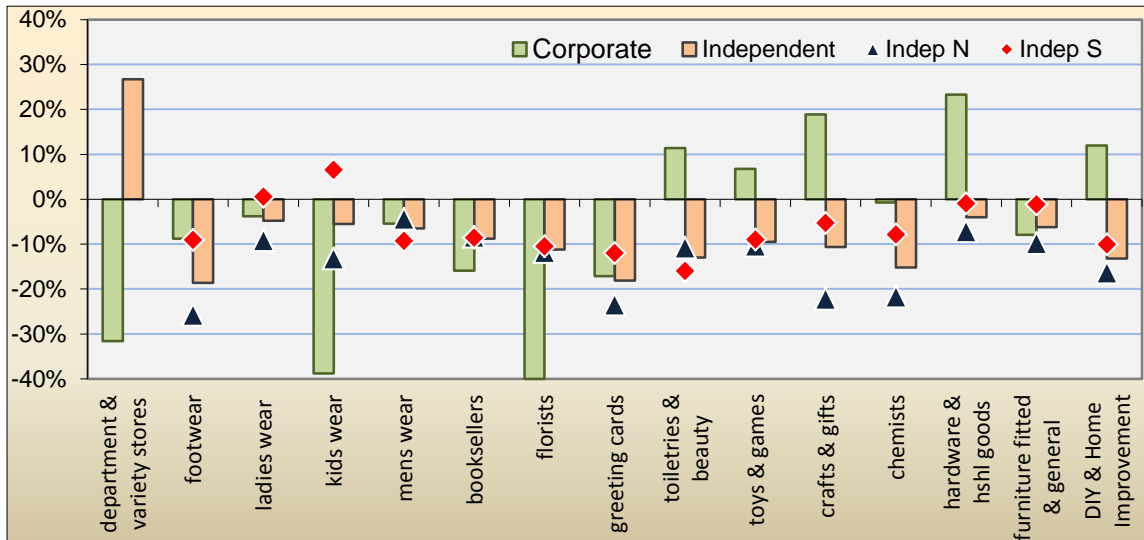
The difference was even more apparent when considering the absolute change; whilst the corporate retailers recorded an increase of +0.3pp, the independent retailers declined by -1.8pp. In the regional context, a strong South-North divide was present, which in terms of independent retailers was manifested by a considerably weaker performance of the northern centres.

Other retail/service categories that performed poles apart included retail services, where independent retailers increased by +4.9% in the relative and +0.6pp in the absolute measure, compared to the respective declines of -9% and -0.3pp recorded by the corporate retailers. Further, both types of convenience retailers performed more uniformly, showing somewhat greater resilience to the economic crisis, especially when the absolute measure across the four-region sample was considered. What was consistent with the previously revealed trend was the small growth of independent retailers in the southern part of our sample. In terms of financial & business and leisure services the performance of both corporate and independent retailers was comparable, with southern regions once again demonstrating stronger resilience.

As in the main descriptive analysis (Figures 5.5 – 5.9) here we also analyse each broad retail/service category in more detail. As Figure 5.11 shows, virtually all types of independent comparison retailers have observed declines. Some of the most adversely affected categories such as independent footwear, greetings cards, toiletries & beauty, chemists and DIY retailers recorded large declines of -10% or more. Conversely, independent department & variety stores observed large relative increase in their numbers, contradicting with the trend amongst corporate retailers. Partly, the low number of independent department & variety stores in our sample can explain such a trend but more importantly, it was the closure of Woolworth's stores that had largely contributed to the observed decline in the corporate department & variety stores. Further, unlike the tendency amongst independent retailers, five multiple comparison retail categories including toiletries & beauty, toys & games, crafts & gifts, hardware & household goods and DIY increased the number of stores between the pre-crisis and within-crisis surveys. In terms of the geographical split, the independent sector in the

southern part of our sample performed notably stronger than in the northern, recording small gains in two subcategories, namely ladies' and childrens' wear.

Figure 5.11: Relative change in comparison retail categories by corporate and independent retailers

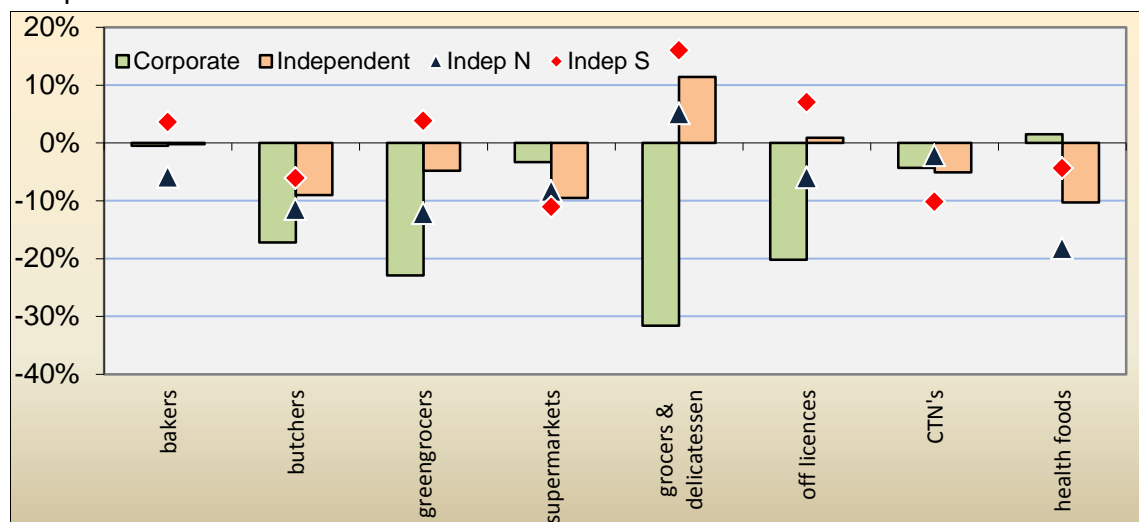


The largest declines in corporate comparison retail are attributed to the closures of Adams stores trading kids wear and in the case of florists to the exceptionally small numbers of affiliated stores, where a drop of six units caused a decline of -40% . Overall, it can be seen from Figure 5.11 that although a few corporate comparison retail types have experienced large deterioration in their performance, independent retailers have primarily felt the effects of the economic crisis and rising online shopping. Multiple retailers are normally better equipped to deal with the impacts of such external shocks, and unless a top-down decision is taken to close down the whole chain or substantial part of it, they are more likely to demonstrate more resilience, at least temporarily, to the factors such as declining consumer spending, lower footfall or increasing online competition.

The performance of the main types of convenience retail, with the exception of convenience stores, analysed in detail in the previous section, is shown in Figure 5.12. Overall, it can be seen that the independent convenience sector has shown greater resilience to the economic crisis than corporate retailers, clearly demonstrated by increases in four of its categories in the southern part of the sample and in two

categories (grocers & delicatessens and off licences) in the entire sample. The most adversely affected types of corporate retailers included butchers, greengrocers, grocers & delicatessens and off licences. Such results could be associated with two different factors. First, the small base used to calculate changes in corporate butchers, greengrocers, grocers & delicatessens had the capacity to produce high values in relative measure. Second, the large decline in off licences was attributed to First Quench Retailing going into administration.

Figure 5.12: Relative change in comparison retail categories by corporate and independent retailers



Likewise, the small number of independent supermarkets has produced large relative changes and the small decline in corporate superstores is almost entirely associated with Kwik Safe chain closure in the northern part of our sample and the divestment of some Somerfield stores, which were taken over by the Co-op Group in 2009. On the contrary, the overall number of the 'big four' supermarkets (Asda, Morrison, Sainsbury's and Tesco), already having 65% share in the UK grocery sales (Wrigley, 2010) continued rising. In the case of the four-region sample the relative measure indicates a considerable increase (+14.2%) of those supermarkets, recording 24 net entries between the pre-crisis and within-crisis surveys.

Perhaps most surprising were the poles apart changes recorded by the retail services, where overall a number of independent retailers recorded substantial

growth, as opposed to the multiples. However, when taking into consideration the more detailed categorisation it became apparent that the large increase in the numbers of health and beauty shops completely masked the substantial declines in the travel agents, photo and video services, principally linked to the adverse impacts of e-commerce.

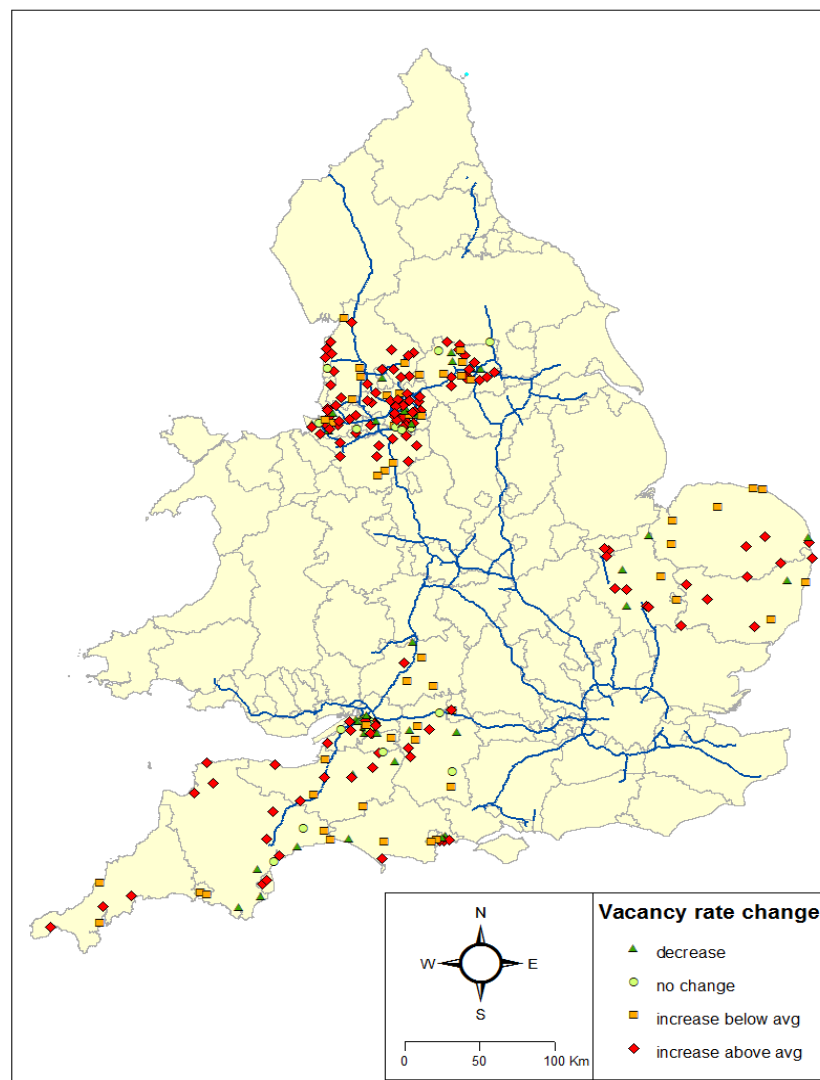
5.3 Modelling vacancy rate change

5.3.1 Nature of the response variable

The analysis uses change in vacancy rates between the pre-crisis and the within-crisis surveys as the response variable in the multivariate modelling. Although it is not a comprehensive measure of town centre vitality, (see the limitations discussed in sections 4.3.4 and 4.3.5) it is the most commonly used indicator of the impact of macroeconomic shock on UK town centres and high streets. Additional measures of 'vitality and viability', specified by the PPS6 such as quality of built environment, accessibility or perceived strength of key stores, do not depict the subtle nature nor extent of the economic crisis impact on the structure of UK town centres. Indeed, descriptive analyses showed that the biggest change in retail centres configurations during the economic crisis was the closure of retail/service-units, which in turn, lead to It is clear from Figure 5.4, depicting the aggregated differential performance of broad retail/service categories, that overall vacant retail recorded large increases between the pre-crisis and within-crisis periods. The response variable takes into account the absolute change in vacant retail and has been calculated for each of the 267 centres, implementing both variable and fixed town centre boundaries. As Figure 5.13 illustrates, the trend within our response variable was far from uniform, displaying complex spatial variability across the four-region sample. Taking into consideration their economic performance it simply divides the 267 retail centres into two groups: (a) those that have shown some resilience to the shock of economic crisis recording decreases or holding their vacancy rates constant between the analysed periods, and (b) those that have displayed fragility recording increases in their vacancy rates either above or below the average change.

Overall, Figure 5.13 reveals that 69.3% of our sample town centres/high streets experienced increases in vacancy rates between the pre-crisis and within-crisis surveys, with some centres recording raises in the range of 5 to 10 percentage points (pp). On the contrary, 22.8% of our sample centres recorded declines in vacancy rates and further 7.9% experienced no change between the pre-crisis and within-crisis surveys. That is to say that almost a third of our sample had been very resistant to the shock of economic crisis and either remained stable or enhanced their vitality despite unfavourable economic conditions. Taking into account the geographical split, the North-South divide was explicit with 81.1% of northern centres recording increases in vacancy rate in comparison to the 63.3% recorded by the southern centres.

Figure 5.13: Spatial variation in vacancy rate change in the four-region sample



Furthermore, in relation to the dynamic and evolutionary trajectories of UK high streets, outlined in previous chapter, it should be highlighted that vacancy-rate change is a multi-dimensional variable. Findley and Sparks (2010) pointed out that some vacancies may be a sign of on-going and essential readjustment, thus not always being an indicator of the fragility of a town centre/high street. In stable economic conditions, a degree of what is termed *retail churn* is essential to accommodate and facilitate often rapidly changing retailers' requirements in terms of store formats, sizes, and preferred locations within town centres/high streets. In other words, a certain level of vacancy is essential to, and reflects, a 'healthy high street'. In periods of macroeconomic shock, a somewhat higher churn rate might be necessary, allowing a self-organising anticipatory or reactive reconfiguration of town centres/high streets. This is to say that some retail centres as a result of an economic shock might temporarily increase their vacancy rates in order to facilitate the reorganisation of their configurations and the renewal of their growth paths. Further issues related to our response variable pertained to the variable nature of constantly evolving town centre boundaries. Thus, at this stage it was essential to establish the extent to which the variable boundary issue was associated with the alteration in computed vacancy rate. As vacancy rate change can be calculated within fixed boundaries, allowing us to report what might be termed the like-for-like increases or decreases in vacancy rates, both fixed and variable boundaries results were derived. Overall, the average change in vacancy rate across the 267 centres was similar in the case of both methods with +2.2pp for the fixed and +1.9pp for the variable boundaries. However some centres, especially those that were undergoing transformation or expanded their boundaries in between the pre-crisis and within-crisis surveys, have recorded far greater discrepancies. In order to minimise the bias in our results, we have taken into account both types of town centre/high street boundaries when modelling the variance in vacancy rate change. Nevertheless, the final and best supported model has employed the 'fixed boundary' method, as it has delivered slightly more robust results.

5.3.2 Specification of the explanatory variables

The factors potentially accountable for the variance in our response variable were directly drawn from the theoretically specified determinants of vacancy rate described in Chapter 2. Furthermore, the schema of Findlay and Sparks (2010), shown in Figure 2.1, implies that the differential performance of UK high streets and town centres, measured by changes in vacancy rates, could be seen as a result of the shock of economic crisis being filtered through two structures. First, through the regional economic system in which town centres/high streets were located was likely to produce regional, sub regional and local variations in levels of both consumer confidence and demand across the hinterlands of those centres. Second, through the existing economic structures of town centres/high streets themselves such as pre-existing mix of businesses, the relationships and interdependencies between those businesses and local institutional supportive or unsupportive structures.

As a result, the attempts to identify potentially significant explanatory variables focused on capturing both those dimensions. They have been captured by a wide range of theoretically grounded indicators and it was of central importance to establish the expected sign of each coefficient accordingly to the available evidence (Table 5.2) rather than common perception, often shaped by the media and various NGOs. In terms of the first dimension, a clear North-South divide was present in the descriptive findings reported above and supported by similar results of commercial research companies e.g. LDC. As far as the multivariate modelling was concerned, the expectation was that the high streets located in southern regions, which had stronger underlying growth dynamics in the pre-crisis period would, other things being held constant, have resulted in less dramatic increases in vacancy rates than similarly configured retail centres in the more vulnerable regional economies of the North. There was also the expectation that within regional economies, holding other things constant, town centres/high streets with more affluent catchments or with demographics favouring higher spending would also have performed better in terms of vacancy rate changes.

In terms of the second dimension, the economic structures and configurations of town centres/high streets themselves, the focus was on the following groups of factors:

(a) The mix and interdependencies of businesses which included the balance of retail versus service units, the retail diversity, proxied by a proportion of small independent retailers and the presence or entry via a town-centres-first policy-compliant in-centre or edge-of-centre site, of a corporate foodstore. The expectations here were that factors increasing attractiveness of a town centre as a shopping destination should be seen as potentially protective of its vitality and viability. For instance, the presence of both leisure services (Zweeden, 2009) and supermarkets (Powe and Shaw, 2004, Wrigley, 2010b) appeared to have been the crucial elements of a successful retail centre. The former is often associated with hedonic shopping providing the 'unique experience' and the latter often by anchoring smaller town centre/high street increases its attractiveness as a shopping destination. The presence of various services and a corporate foodstores in a retail centre offer complementary commodities (Wrigley and Dolega, 2011) which have the potential not only to increase the footfall but also the time and frequency of visits and by the mechanism of linked trips encourages the retention of expenditure. Furthermore, small-retailer trade organisations and NGOs have argued that the diversity of independent-specialist-stores dominating town centres/high streets was potentially a protective, but fragile factor.

(b) Local supportive or unsupportive institutional structures and business practices that affect the visual and functional attractiveness of the town centre/high street were investigated. In particular, the importance of indicators such as investment in the design and maintenance of the built environment and 'streetscape' of the centre; involvement in Business Improvement Districts (BIDs) schemes; funding of a 'town centre manager'; supportive car parking policies; attraction of key 'magnet stores' entry and/or investment in temporary 'crowd-pulling' attractions. The first two factors enhance the attractiveness of a town centre/high street; the presence of town centre manager is essential to envisage its future and adequate and reasonably priced car park provision encourages consumer spending spillover. Additionally, attracting the

'crowd-pulling' stores and organising different events such as market days as suggested by Portas (2011), are crucial practices/interesting ideas supporting town centre vitality in economically challenging times. In effect, we have expected these factors to be protective of town centres' vitality and viability and prevent them from large increases in vacancy rates.

(c) The physical configuration of the town centre or high street and the extent to which that might help facilitate the processes of reconfiguration and renewal. In particular, the overall size of the town centre/high street, recently completed new retail floorspace, its position within the retail hierarchy and the distribution of floorspace across units in the centre was important. In terms of the centre size, it was unclear what impact it would have on the vacancy rate as there were arguments that larger centres potentially offer a wider variety of niches but also higher levels of competition in comparison to the small centres. However, researchers (e.g. Findlay and Sparks, 2009) agree that retail centres characterised by higher proportions of larger modern shop units offering the potential for flexible reconfiguration when compared with the older less adaptable retail fabric, were expected to be more resilient to the onset of economic crisis. Finally, the level of what can be termed structural vacancy in the town centre/high street has been argued to be potentially important (Findlay and Sparks, 2009; Zweeden, 2009). Structural vacancy, normally defined as long-term empty units in existence for more than 12 months, indicates poor retail fabric and can be harmful to the attractiveness of a centre. High levels of 'bad' vacancy as opposed to the short-run 'healthy' vacancy, associated with normal churn, were likely to have been detrimental to the attractiveness of a town centre/high street and to have been associated with more severe increases in overall vacancy rates.

Table 5.3 provides a summary of the determinants of vacancy rate, employed by our multivariate modelling as explanatory variables and additionally indicates the theoretically expected impact on the change in vacancy rate. Overall, there were three types of such impacts distinguished: positive, negative and uncertain. The latter type depicts those factors that were subject to some sort of ambiguity in previous studies, either having been found to have positive and negative influence or having been inconclusive. In terms of technical specifications of our explanatory variables, the

regression model had employed both types the numerical and categorical, however numerical coefficients were prevailing, and only a few dichotomous variables such as South-North divide or presence/entry of corporate foodstores were used. Furthermore, the majority of numerical variables have been systematically calculated as the percentage of the values recorded pre-crisis period used as a base. Finally, the multiplicative variable depicting an average floor space and the floor space occupied by the key 'magnet stores', has used standardised values to avoid potential complications arising from a variety of numerical scales.

Table 5.3: Summary of explanatory variables tested in the regression model and the theoretically expected impact on response variable

System	Group of factors	Explanatory variable	Theoretically expected impact
Regional economic systems	Underlying dynamics	South-North	Positive-negative
	demographics	Affluence of catchment areas	Positive
		Mosaic demographics favouring bigger demand	Positive
Local economic systems	Mix and interdependencies of businesses	Retail vs. services	Uncertain
		Diversity	Positive
		Presence/entry of corporate foodstore	Uncertain
	Local business environment	Involvement in BID's	Positive
		Funding town centre manager	Positive
		Ease of parking	Positive
		Presence of a key magnet store	Positive
	Physical configuration of town centres	Town centre size	Uncertain
		Structural vacancy	Negative
		Modern and adaptable retail fabric	Positive

5.3.3 Best supported model of vacancy rate change

The best supported and theoretically grounded model of vacancy rate change between the pre-crisis and within-crisis periods is summarised in Table 5.4. It is a parsimonious seven-variable ordinary least squares (OLS) regression model obtained after exploration of many different specifications of possible sets of explanatory variables. The model has retained seven variables which might capture the two

dimensions discussed above, dimensions through which the shock of economic crisis was filtered into differential changes in vacancy rates across our four-region sample of 267 town centres and high streets. Negative parameter estimates indicate factors which, holding all other things constant, are associated with reductions in the rate of increase in vacancy rate between the pre-crisis and within-crisis surveys. These factors could be linked to relative improvement in performance of town centres/high streets; in other words the enhanced resilience during economic crisis. Positive parameter estimates indicate the opposite; factors associated with relative worsening of UK high streets' performance or increased fragility during economic crisis. Overall, the model in Table 5.4 explains 36% of the variability in our response variable, the complex changes in vacancy rates shown in Figure 5.13 which is a respectable level for a parsimonious model of a relatively large cross-sectional sample, a model which leaves more than 250 degrees of freedom.

Table 5.4: A parsimonious theoretically grounded model of vacancy-rate change

Explanatory Variable	Parameter estimate	Standard Error	T-value
Constant	-0.076	0.019	-3.998**
South-North divide	-0.016	0.004	4.170**
Centre size (Log)	+0.013	0.002	+5.743**
Retail diversity pre-crisis	-0.027	0.013	-2.139*
Corporate food store entry	-0.008	0.004	-2.081*
Retail vs services % pre-crisis	+0.095	0.021	+4.463**
Structural vacancy pre-crisis	+0.060	0.010	+6.130**
Std Avg Store Size x Std magnet store floorspace	-0.349	0.082	-4.243**

** parameter estimate significant at 1%, * significant at 5% R squared = 35.6 N = 259

P-value for normality test of residuals = 0.84

Durbin-Watson d value = 2.17

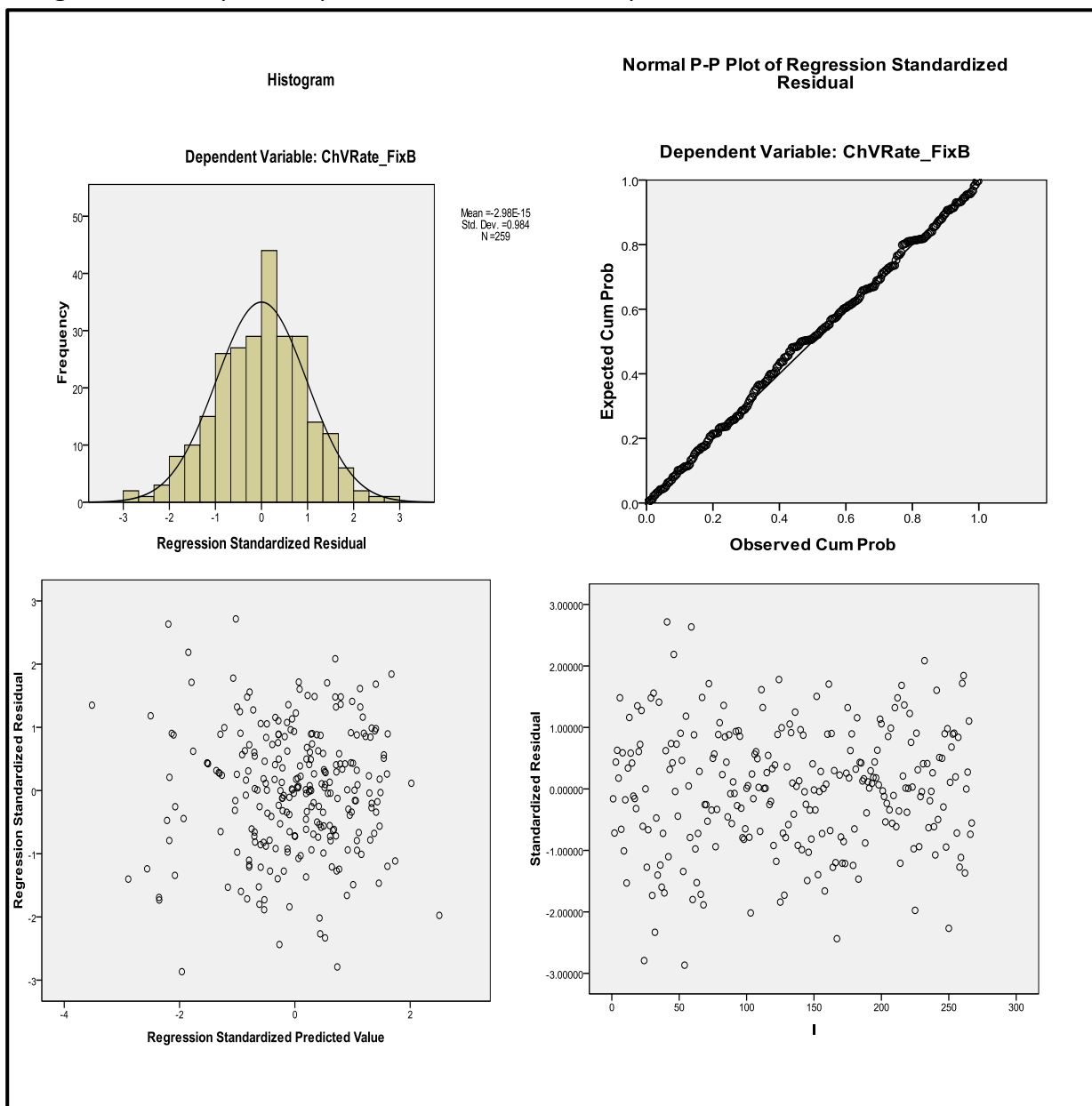
Condition index value of = 28.61

The model has been subject to a series of standard tests to check that it conforms to OLS assumptions and provides robust estimates. The OLS assumption tests are summarised below the table and their graphical representations are shown on Figure 5.14. Firstly, the normality test with p-value of 0.84 and the histogram of standardised residuals suggest normally distributed residuals. Secondly, both the Durbin-Watson

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test and the scatterplot of standardized residuals plotted against standardized predicted values show reasonably constant variance, thus indicating there is no evidence of heteroscedasticity in the dataset. Thirdly, the condition index value of below 30 implies that there is no significant multicollinearity in the dataset. Finally, although the White test has not been performed the standardized residuals plotted against the case number form a random scatter about zero, suggesting that the assumption of independence of data holds well.

Figure 5.14: Graphical representation of OLS assumptions



Further, outlier and leverage plots were used to check the robustness of the model and on the basis of outlier/high-leverage detection criteria which have become standard practice in regression diagnostic approaches (Belsley et al, 1980; Henderson and Velleman, 1981; Wrigley, 1983), a small number of centres (8) were removed from the initial sample of 267 retail centres. Most of the outliers have already been highlighted by the EDA analysis in the previous chapter and they included those retail centres that were undergoing transformation between the survey periods or their characteristics had extreme values affecting the results.

Nevertheless, it has to be acknowledged that, more than 60% of the complex spatial variability of changes in vacancy rates remains unaccounted for. Thus, there is a strong probability that there may be missing explanatory variables that have not been included in our model and they could have important role to play in accounting for the differential performance of our 267 retail centres in response to the shock of global economic crisis. In particular, variables such as rents, footfall and parking charges are perceived to play a significant role in the economic health of town centres and high streets, thus would unquestionably strengthen the model, but such systematic data for each retail centre was not available to this study. Omission of either of these variables may have played a role in our inability to retain a catchment affluence variable in the model reported in Table 5.4.

The interpretation of our cross-regional model results should be as follows. Town centres and high streets in the four-region sample displayed the greatest resilience to the shock of economic crisis sustaining their vitality and viability (measured by lower rates of increase, or reductions, in vacancy rates) if they were more likely, all other things being equal/held constant to have been:

- southern rather than northern;
- smaller rather than larger;
- those whose business mixes in the pre-crisis period were characterised by higher proportions of service units relative to retail units;
- those whose retail unit compositions in the pre-crisis period were characterised by the diversity offered by higher proportions of small independent specialist stores;

- those which, despite the shock of economic crisis, had experienced between the pre-crisis and within-crisis surveys an in-centre or edge-of-centre corporate-foodstore entry which conformed with the town-centres-first approach to retail-planning policy;
- those with lower levels of structural vacancy in the pre-crisis period i.e., with lower levels of the 'bad' long-term vacancy potentially harmful to the attractiveness of town centres/high streets;
- those whose physical structures going into economic crisis could be seen as both relatively attractive and facilitative of reconfiguration; in the model this was proxied by larger average store sizes which additionally had higher levels of that floorspace occupied by twenty of the UK's key/'magnet' retailers; the multiplicative effect of these two characteristics.

The majority of these findings are consistent with our theoretical expectations outlined above. For example, filtering the shock of economic crisis through regional structures that in the pre-crisis period had stronger underlying growth dynamics (southern regions) is clearly reflected in the model, with a North-South coefficient being very robust. Similarly, filtering the macroeconomic shock through the mix and interdependencies of businesses within town centres/high streets and the physical configurations of those centres produced theoretically expected results. The beneficial effects of centre diversity based on small independent specialist stores, town-centres-first policy-compliant and expenditure-retaining corporate foodstore entry and the presence of modern large crowd-pulling stores, which increase town centre attractiveness, were reflected by the model. Additionally, in terms of the detrimental impacts, the long-term structural vacancy, as expected, contributes to the increases in vacancy rates. Moreover, in the case of factors such as the influence of centre size or proportion of services relative to retail, where our expectations were theoretically more ambiguous, our findings that smaller centres and those with raised ratio of services performed better are supported not only by the descriptive results but also by similar findings reported by the LDC.

It is important, however, to highlight that the model shown in table 5.3 includes none of the measures of the group of factors which we termed supportive local

institutional structures and business practices. Several of our proxies such as BIDs scheme participation, presence of a town centre manager or a number of car park spaces, when included in preliminary specifications of the model, had parameter estimates consistent with our theoretical expectations, however, at best they suggested weak relationships and none approached conventional levels of significance. Thus, it could be questioned whether this group of factors has not been retained by the model as a result of: inappropriate proxies being selected, the peculiar configurations of our 267 town centres/high streets sample, or because they genuinely had a relatively marginal impact on differential performance of our retail centres between the pre-crisis and within-crisis periods. Similarly, our expectation was that within regional economies, holding other things constant, town centres/high streets with catchments that are more affluent or with demographics favouring higher rates of consumer demand were likely to have been more resilient to the shock of economic crisis than the centres with less affluent catchments. However, while they produced parameter estimates with the expected signs, suggesting stronger relationships with centre performance than the factors associated with the local institutional structures/business practices group, none of the proxies of catchment affluence we experimented with, reached conventional levels of significance.

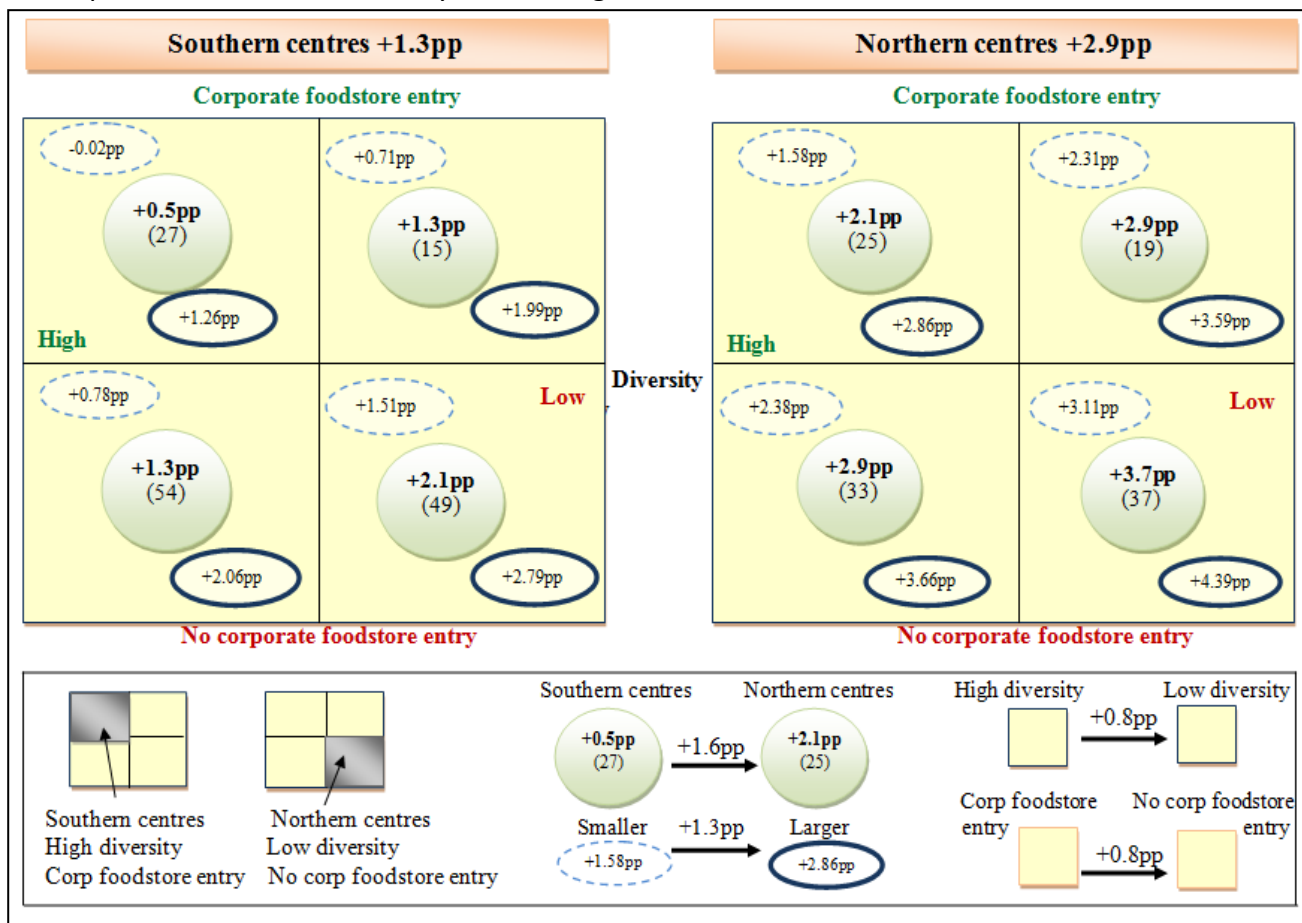
5.3.4 Model-predicted vacancy rate changes

To help visualise the significance of the multivariate modelling findings, I have created a graphical summary, shown in Figure 5.15, which depicts the effects of four of the explanatory variables in Table 5.4 on predicted values of vacancy-rate change. With the remaining three explanatory variables having been set at their average values the 'larger/smaller', 'high/low', etc. values of four assessed explanatory variables are defined by setting them to their upper or lower quartile values. Firstly, showing the impacts of the North-South divide on the differential performance of UK high streets, Figure 5.15 displays the 267 centres in two different tables – southern group on the left-hand side and northern group on the right-hand side. Secondly, the impacts of foodstore entry and centre diversity on the predicted increase in vacancy rate are shown in the respective quadrants of each table. The numbers in the large green circle

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within each quadrant display the predicted increases in vacancy rate and the numbers in parentheses depict the number of cases in the sample falling into that quadrant/group. The detailed key under the diagram helps interpret what initially may seem a complex picture. Beginning in the top-left-hand quadrant of the left-hand side, Figure 5.15 provides predictions of the change in vacancy rate pre-crisis to within-crisis for southern town centres/high streets, with high levels of diversity (measured in terms of the proportion of small independent specialist stores) in the pre-crisis period, and which also experienced a planning policy-compliant, in-centre or edge-of-centre, corporate-foodstore entry. According to our model, these are the better performing town centres/high streets in our sample, with the average predicted increase in vacancy rate of +0.5pp.

Figure 5.15: Visualising the impacts of four of the explanatory variables in Table 5.4 on predicted values of Vacancy Rate Change



Finally, including the fourth dimension, which depicts the impact of centre size on the increases in vacancy rates, it is clear that smaller centres have performed better than larger centres. Thus, the smaller centres within this group would perform best with the absolute vacancy rate (M2) decreasing by -0.02pp. If that specification is then changed slightly from smaller to larger town centres/high streets, all other things remaining the same, Figure 5.15 shows the predicted vacancy rate would have changed from the small (-0.02pp) decrease to a +1.26pp increase. In summary, therefore, the graphical representation of the most policy significant variables suggests that southern, smaller town centres/high streets, with high levels of diversity in the pre-crisis period and with corporate-foodstore entry between the pre-crisis and within-crisis surveys, would display the strongest resilience to the economic crisis.

Conversely, in the lower right-hand quadrant of the right-hand table of Figure 5.15, are displayed the predicted increases in vacancy rates for what, on the same basis, the model predicts to be poorer performing town centres/high streets. Here, in the case of northern, larger town centres/high streets, with low levels of diversity in the pre-crisis period, and which did not experience corporate-foodstore entry between the pre-crisis and within-crisis surveys, the model predicts that the absolute vacancy rate would have increased by +4.39pp. This is to say, almost 5 percentage points worse than the small improvement (-0.02pp) predicted for the best performing centre-type, shown in our graphical representation of the model.

In summary, the examination of Figure 5.15 shows that, other things being held constant, town centres/high streets located in northern regions of England have been likely to increase their vacancy rates by additional +1.6pp in comparison to their southern counterparts. Further, the effect of the town centre/high street being larger rather than smaller has been predicted to raise the vacancy rate by +1.3pp. On the same basis, Figure 5.15 shows that diversity and corporate foodstore entry have identical impacts on predicted changes in vacancy rates. The predicted vacancy rate is raised by +0.8pp if the town centre/high street had low rather than high diversity in the pre-crisis period, and raised by an identical +0.8pp if the town centre/high street did not experience corporate-foodstore entry located either in-centre or edge-of-town centre. Other explanatory variables, which were retained by our model but were not

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shown in Figure 5.15, included levels of structural vacancy and the balance of retail relative to service units. In a similar fashion, the obtained increases in vacancy rates for high/low levels implied that the effect of high structural vacancy levels, holding all other things constant, was predicted to increase vacancy rates by +1.5pp and high proportion of retail relative to services had detrimental effect on vacancy rates, increasing them by +1.1pp. Table 5.5 shows the importance of each variable on the predicted change in vacancy rate.

Table 5.5: Importance of the cross-regional variables on the predicted vacancy rate change

<i>Retail centre characteristic (variable)</i>	<i>Predicted impact on vacancy rate</i>
Southern rather than northern	-1.6pp
Low structural vacancy	-1.5pp
Smaller size	-1.3pp
High proportion of services	-1.1pp
High diversity	-0.8pp
Entry of a corporate foodstore	-0.8pp
Multiplicative variable	-0.5pp

Finally, taking into consideration all seven significant variables the predictions of vacancy rate changes for two polar opposite - best and worst - scenarios were obtained. First, which assumed that all parameter estimates had the expected sign and their values were set at upper quartiles, produced the predicted vacancy rates changes for a hypothetically top performing town centre/high street at -1.3pp. Conversely, town centres/high streets with most vulnerable dynamics, in other words those which all parameter estimates had the opposite sign, were predicted to increase their vacancy rates by +6.1pp.

Some of the absolute differences in vacancy rate change, predicted for various levels e.g. larger/smaller, high/low and so on, of the factors included in the model, might seem somewhat muted, however, this could be explained by the limited time which separates our pre-crisis to within-crisis surveys and the particularities of the available four-region sample. However, the overall difference between the most resilient and the most fragile configurations of about 7.5pp can produce a substantial change in vacancy rate in the case of medium and large size town centres. What it

means in real terms for a large town centre such as Liverpool Central, which comprises about 1000 outlets, is a decrease/increase of about 75 vacant units. These findings, although less important at the local scale, certainly provide important indicators to town centres' managers and local authorities of the district and regional retail centres.

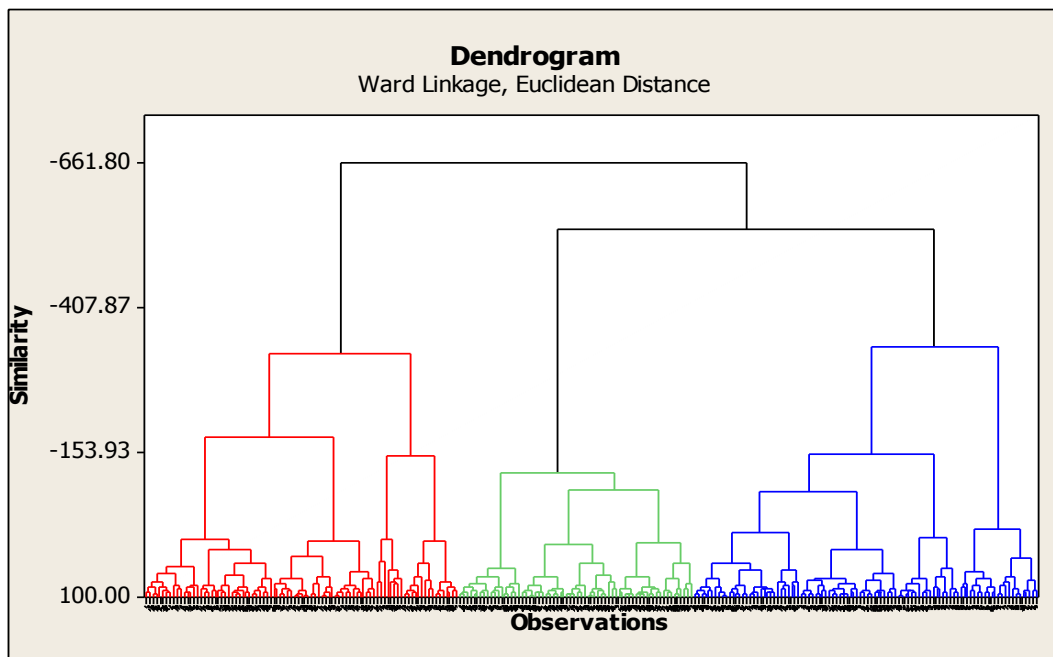
5.3.5 Cluster analysis

The depiction of UK town centres' and high streets' complex adjustment to the economic crisis derived by the OLS regression model represents a two-dimensional performance of those centres, attributing their success or failure to a positive or negative sign of the derived coefficients. Although such a model is fundamental to establishing the significant drivers of vacancy rate change and quantifying their influence, it can be argued that the regression model is somewhat less successful when it comes to the actual observations, especially when the value of the coefficient of determination is below 0.4. The comparison of vacancy rate change predictions, shown in Table 5.15, and the actual changes, recorded in the 267-centre sample demonstrated that the accuracy, within +/-1% error margin, ranged between 60%, for the best performing quadrant, and 20%, in case of the weakest one. The strictly theoretical concept of 'holding other things constant' is not always effective in the real world, especially when assessing the dynamic and constantly evolving configuration of UK town centres. One way of dealing with this issue is to employ other complementary types of multivariate analysis such as cluster analysis. On the one hand, such a method could be used to cross validate the results obtained by our regression model, and on the other hand, to derive various groups of centres which performed comparably due to their closely related characteristics. Such groups can be termed as contextual clusters because they provide additional insights into the dynamics of the four-region sample, responsible for the differential adjustment of each cluster to the economic crisis. Some of the 267 town centres/high streets share properties regardless of location, and conceptual cluster analysis can depict those.

The centroid model, by utilising the k-means algorithm, which represents each cluster by a single mean vector rather than distance connectivity, and taking into account both response and explanatory variables, showed the presence of three main

clusters in the cross-regional sample. The dendrogram derived for the cluster analysis, shown in Figure 5.16, portrays the similarities and complex linkages between the dynamics of the 267 town centres. At a lower and more detailed level, as many as eleven sub-clusters can be distinguished; however, three larger clusters, portrayed by different colours, were chosen. Arguably, five different clusters could be chosen, however it was felt that in terms of the town centres' differential performance it could create a far too complex picture. In simple terms, the chosen option implied that within the cross-regional sample there different responses to the shock of economic crisis could be distinguished. As Figure 5.17 shows, the distinctive characteristics of each cluster have the capacity to impact vacancy rate change in three different ways.

Figure 5.16: Dendrogram showing presence of three main clusters within the four-region sample

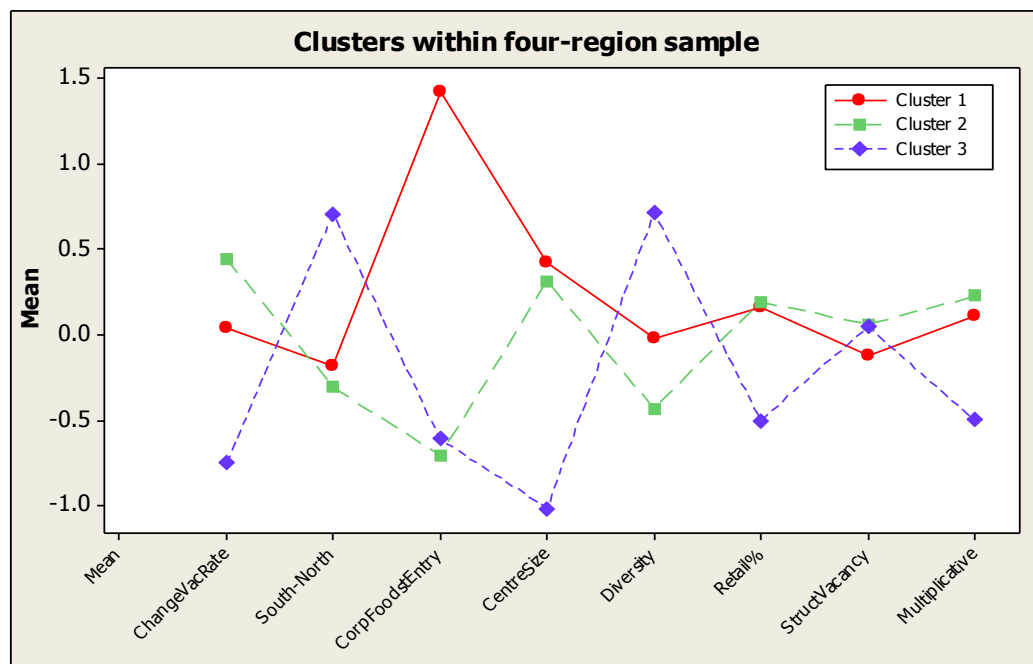


(i) First, the specific combination of factors found to have negative impact on the performance of UK high streets between the pre-crisis and within-crisis periods contributes to the increases in mean vacancy rate (Cluster 2). This cluster, as Figure 5.17 indicates, contains mainly those retail centres that were larger in size, located predominantly in the northern part of our sample, experienced small number of corporate foodstore entries and additionally were characterised by low diversity,

measured by the proportion of independent retailers. Further, the remaining three dynamics of cluster 2 have observed smaller discrepancies in their means which indicates that their significance was somewhat muted, presumably due to more complex interdependencies with the vacancy rate. Nevertheless, those three characteristics indicate town centres slightly dominated by retail units relative to services, those with a relatively high proportion of structural (bad) vacancy and additionally those whose physical structures were relatively modern and capable of reconfiguration.

(ii) Second, cluster analysis has indicated a set of dynamics that were likely to enhance the vitality of retail centres; in other words those associated with the decrease in vacancy rate. As cluster 3 demonstrates the centres which performed stronger during the economic crisis were likely to have been: predominantly southern, with limited corporate foodstore entry, rather small in size, and those with a high proportion of independent retailers and a prevailing ratio of services relative to retail units. Moreover, they were characterised by a relatively high proportion of long-term structural (bad) vacancy and the dominance of small outlets with only a few occupied by the most attractive stores.

Figure 5.17: Characteristics of the three clusters present in cross-regional sample



(iii) Third, the set of dynamics that to an extent was protective of town centre performance and kept the vacancy rates relatively constant. Figure 5.17 indicates that cluster 1 comprised relatively large centres of both northern and southern subsamples which experienced a corporate foodstore entry. The level of diversity in those centres was about average, the structural vacancy was relatively low and the proportion of modern and attractive retail units was prevailing

With few exceptions, the dynamics of clusters 2 and 3 closely resembled the results of the cross-regional regression model. In particular, the cluster analysis has captured well the configurations of poorly performing centres, where six out of seven indicators can be strongly associated with the previous findings. The only conflicting factor was the dominance of larger units with higher presence of the key 'magnet stores', which in cluster analysis unlike the regression modelling was found to be associated with the increases in vacancy rate change. In terms of the most resilient centres, four indicators were consistent with the regression model results, but the factors such as corporate foodstore entry, levels of long-term structural vacancy and the multiplicative variable have displayed less clear or even opposite trends than expected. Although cluster 3 (associated with enhanced resilience) indicated centres with a slightly higher numbers of corporate foodstore entries and a lower proportion of structural vacancy than cluster 2 (associated with fragility), it could be argued that both levels were far from expected. Of particular interest is the inconsistent positive impact of corporate foodstore entry on the performance of UK town centres, measured by the change in vacancy rate between the pre-crisis and within-crisis periods. To a degree, this could be explained by the presence of cluster 1, which depicts the characteristics of those centres that attracted corporate foodstore entry. It indicates that corporate foodstore entry should be associated with rather larger centres whose physical structure could be seen as both relatively attractive and facilitative of reconfiguration and consisted of high levels of retail units relative to services. This is not however, the description of the traditional diverse UK high street, which was portrayed by cluster 2. An attempt to identify the individual centres forming cluster 1 has revealed that in the majority of cases they were large city centres, out-of-town shopping centres or those that recently

experienced retail-led regeneration projects. Typically, such types of modern and prosperous centres are characterised by high footfall, therefore often attracting the investment from the large food retailers and are performing relatively well. However the key issue here is the nature of the relationships between corporate and independent retailers, as the cluster analysis shows that those both protective of town centre performance dynamics are not necessarily shared by the same type of retail centres.

5.3.6 Assessing cluster analysis

In order to provide additional insights into the response of our 267 retail centres to the onset of the economic crisis we have implemented a complementary multivariate technique - cluster analysis. Taking into consideration the response variable and statistically significant explanatory variables, the 267-sample has been partitioned into three groups of retail centres; each characterised by closely related dynamics in terms of their differential performance, measured by the vacancy rate change. That is to say that the complex linkages between those eight factors, which varied substantially across the analysed centres, have been decomposed into three clusters. Such an approach had a number of implications. First, the cluster analysis has depicted various underlying trends that may be accountable for UK town centres' and high streets' uneven adjustment to the economic crisis. Second, it has largely corroborated the results obtained by the cross-regional regression modelling, in particular by deriving the dynamics responsible for both increases in vacancy rates and protecting town centre vitality. Third, as the resilient centres have been divided into two groups, it could be argued that the cluster analysis has exposed an additional and important aspect of the complex adjustment of UK town centres to the onset of economic crisis. An aspect that was documented by the descriptive analysis but was not very explicit in our regression model results should certainly be considered when evaluating UK town centres' and high streets' resilience. In addition to the characteristics of the most resilient and most fragile centres, cluster 1 has revealed the dynamics of those centres that retained relatively constant vacancy rates. To some extent, this could be related to the limitations of our response variable, which solely by depicting the gap between

the pre-crisis and within-crisis vacancy rate, did not portray its absolute value. Regrettably, the two-dimensional response variable does not take into consideration the pre-crisis economic health of a centre and by placing the whole weight on its differential performance fails to depict simultaneously the overall vitality of a centre. Indeed, the data analysis shows that more than half of the centres referred to as most resilient, in other words those that did not experienced any rises of vacancy units, had their pre-crisis vacancy rates higher than the entire sample average. Indeed, when the declines in vacancy rates of more than -3pp were considered, it became apparent that only 6 centres of the 26 fulfilling these criteria had their pre-crisis vacancy rates lower or equal to the four-region sample average.

One implication of that issue is that some retail centres specified by the response variable as resilient, cannot be associated with a 'healthy' centre in the pre-crisis period, characterised by low vacancy rate. Conversely, a considerable number of 'healthy' high streets with low pre-crisis vacancy rates suffered large increases in vacancy rates. Cluster analysis appears to account for this type of centre by forming a group of town centres/high streets that are relatively resistant to the economic crisis and simultaneously recorded low vacancy rates in the pre-crisis survey.

A further issue, which has become explicit, indicates that the best performing centres of our sample are unlikely to encompass all dynamics associated with the enhanced resilience to the shock of economic crisis. Cluster analysis has shown that only a number of factors are crucial in defining the economic performance of town centres, with the remaining determinants having smaller or no impact on their economic performance.

Finally, the fact that about 60% of the variance in our response variable remains unaccounted for, strongly indicates that there are other crucial factors determining the vacancy rate change. For instance, the cluster analysis implies that the small and most diverse centres experienced corporate foodstore entry to a smaller extent than the predominantly large high streets with medium levels of independent retailers. Nevertheless, both types of town centres have shown somewhat enhanced resilience to the economic crisis, either holding constant or decreasing their vacancy rates. Thus, it is clear that both these factors are beneficial for town centre vitality and viability and

in the most desirable scenario independent and corporate retailers would form a symbiotic relationship. However, the evidence from cluster analysis suggests that this could not always be the case as only some centres were found to have shared both dynamics. Thus, what are the interdependencies between corporate foodstore entry and independent retailers observed in our four-region sample? On the one hand, the policy-compliant corporate foodstore could have already been present in the pre-crisis period enhancing their vitality. On the other hand, a number of small and diverse high streets performed well without a medium or large superstore and the role of attracting footfall and helping to retain the expenditure was taken by the convenience stores. However, the nature of corporate foodstore entry/presence and the extent to which they impact vacancy rates as well as the comprehensive role of convenience stores needs to be investigated further. To a degree those key issues will be analysed in Chapter 6 which assesses the significance of the above assumptions within the single urban area.

5.4 Cross-regional results triangulated against competitors' findings

The assessment of the initial descriptive findings should consider two issues. First, how do they compare with the results obtained by the commercial consultancies, in particular the Local Data Company (LDC) ones. As LDC used a larger but more thinly spread sample of 705 UK centres, which included fewer smaller (district and local) centres than in the research reported here, it would be of central importance to match the similarities in obtained results and identify the differences. Second, what are the indicators of the differential performance of UK town centres and high streets, which might have been revealed in response to the economic shock and could have been used to explain the exhibited differential levels of resilience?

First, with regard to the findings of the LDC, several observations need to be made. LDC has monitored the change in UK high streets regularly and has mainly charted to a non-academic audience. In regular reports released since 2009, which covered the changing vacancy rates and the declines/increases in all major retail/service categories, there were many similarities to descriptive results outlined above (LDC, 2009; 2010; 2011). They have documented well the 'gathering storm', in particular,

showing that within the first 9 months of 2009 over 25,000 shops had been closed, rising retail vacancy rates substantially. It was reported by LDC that vacancy rates reached 12% at the end of 2009 and 14.5% at the end of 2010. Correspondingly, they have also highlighted the main contributions to closures and increased vacancy rates as coming from comparison retail, with convenience-retail categories displaying much greater resistance to the shock of economic crisis. Importantly, they have also identified other reasons having adverse effect on UK retail centres; in particular, increasing online sales were blamed for the misfortune of some types of retail, such as music, video, bookshops and travel agents. The LDC's end of 2009 vacancy figure of 12% derived for the 705 retail centres across the entire UK is closely comparable to the 13.1% recorded in our Q4 2008-09 within-crisis sample. Taking into consideration that each study can use slightly different methodology, the final vacancy rate might fluctuate noticeably. For instance, this study used only retail/service units as a base to calculate the vacancy rates, however, had all units from the Goad survey been accounted for, our within-crisis figure would have been 11.5%. With regard to performance of particular retail/service types, despite the different categorisations of comparison-retail and convenience-retail used by LDC compared with this study, the LDC's findings are broadly equivalent to those reported above. In particular, department stores; gifts and stationary/cards retailers; florists; furniture and related retailers, and music and video (or home entertainment) retailers are identified in both studies as amongst the hardest hit comparison retail categories, with relative declines in the -29% to -10% range being recorded in both. Likewise, the LDC and this study agree that the types of convenience retail that showed largest decline in relative measure include butchers and fishmongers, confectioners, tobacconists and newsagents (CTNs) and off-licences. However, it needs to be highlighted that the declines experienced by these categories place them at or below the lower end of the range noted for the hardest hit comparison retailers. Furthermore, both studies pointed at travel agents and estate agents as the fastest declining categories of retail services and conversely coffee shops and some chain restaurants as the quickest growing categories observed in leisure services.

Nevertheless, there were some differences too when comparing our results with those from LDC. The most striking difference relates to the average vacancy rate in the pre-crisis period. In our 2006/07 pre-crisis sample, that figure was 10.4%, but in contrast, LDC estimated their 'pre-crisis' Q1 2008 vacancy rate to have been around 4.5%. In part, the difference reflects a general reduction in vacancy rates which occurred during 2006/07, and the different geographical structure of the samples. However, it needs to be highlighted that leading UK property consultancies expressed some concerns regarding 'confusing' data and 'inconsistency of approaches' to measuring vacancy rates when reviewing LDC and related figures (e.g. Colliers CRE, 2009) or in more general context (Genecon, 2011). Colliers reported that its own vacancy rate figures, defined on the basis of empty units available for occupation ('hard voids'), rose from 7.3% in October 2006, which was a central point of our pre-crisis sample, to 13.8% in April 2009, which in turn, was a central point of our within-crisis sample. Given that the Colliers sample included London, where vacancy rates in 2006 were significantly below the UK average, Colliers' figures were much closer to those recorded in our sample than those reported by LDC. Other differences included the performance of some retail/service categories; for instance, our study has indicated an increase in charity shops numbers, but the LDC report, presumably masked by the aggregation of retail categories, showed that 'charity, pet shops and other' category had declined by -8%. In addition, both studies indicated the decrease in footwear and clothing retailers, however our results suggested a more moderate decline (-3.4%) than the one recorded by LDC (-14.9%).

The second issue refers to the systematic and identifiable indicators present within the descriptive findings that could potentially explain the dimensions of the differential performance of UK town centres and high streets between the pre-crisis and within-crisis periods. One such indicator was the obvious 'north-south divide' clearly visible throughout Figures 5.3 – 5.8. The different underlying dynamics of high streets and town centres located in southern and northern parts of our sample have created different levels of resilience to the onset of economic crisis. Our findings were consistent with Dorling's (2010) recent insightful account of the persistent significance of the north-south divide concept, present in the economic geography of the UK. That

divide with northern town centres/high streets performing significantly worse in terms of rising vacancy rates and the performance of various retail/service categories has also consistently been highlighted in the LDC reports. Northern centres struggling with the onset of economic crisis, are expected to perform even weaker in the medium term, given their heavier dependence on public sector employment at a time of severe government expenditure cuts (Anagboso, 2009). Additionally, the LDC reports suggest differential performance related to centre size, which, in turn, compounds the north-south differential. The results, suggesting that large and medium-size centres in the north appeared to have performed poorly in terms of increasing vacancy rate and the medium-size centres in the south have shown much greater resilience to the shock of economic crisis, are in line with our findings. However, the inclusion of many small local and district centres by our sample has provided evidence that these types of centres also perform well in the South.

Chapter 6: Empirical results - single urban area

This chapter builds on the four-region sample research by moving down a scale from cross-regional to intra-urban. It uses three rather than two-wave survey data to conduct a 'drilled down' analysis of retail configuration adjustments in a single urban area - Bristol. Such a remarkably large number of systematically mapped retail centres in Bristol has facilitated better understanding of the intra-urban variation in performance of retail centres/high streets during the shock of economic crisis and the following period of austerity.

Initially, the explanatory analysis evaluates the dynamics of Bristol retail centres and positions them against the cross-regional averages. Then it explores the nature of policy-compliant corporate foodstores expansion, and in particular examining the entries into small convenience stores sector. Additionally, it offers an opportunity to assess the extent to which the determinants of enhanced resilience, significant at cross-regional scale, may hold at the level of a single urban area. This was achieved by both the descriptive analysis depicting changes in Bristol high streets' configurations and the statistical modelling of vacancy rate changes defining the significant factors attributed to that change in each of the three-wave periods. The intra-urban findings support the complex nature of change in retail configurations, which has been induced not only by the economic crisis but also by other interrelated and powerful forces including the 'town centre first' policy, rapid growth of internet sales and rise of convenience culture.

6.1 Characteristics of Bristol retail centres

Bristol is the largest city in the South West region and is the centre of a city-region of about one million people. The city, in our pre-crisis period, had the highest GDP of any major city outside London and generated 24% of the South West's GDP (Tallon, 2008). Moreover, the city region has a relatively prosperous, well-educated and highly skilled population. Tallon (2008) argues however, that in terms of shopping Bristol was

viewed as a lower-status destination in comparison to neighbouring Bath, Cardiff, Cheltenham or the regional shopping centre of Cribbs Causeway. This could be largely attributed to the city's rather unattractive main shopping area – Broadmead. Developed in the 1950s as a replacement of the old historic shopping centre damaged during the war, the retail centre had little appeal, especially to the nearby affluent catchments. However, since the pre-crisis survey, Bristol city centre has changed considerably, mainly as a result of two projects: a) the Business Improvement District (BID) regeneration scheme of Broadmead area and b) the construction of an adjacent brand new shopping centre – Cabot Circus; both completed in late 2008.

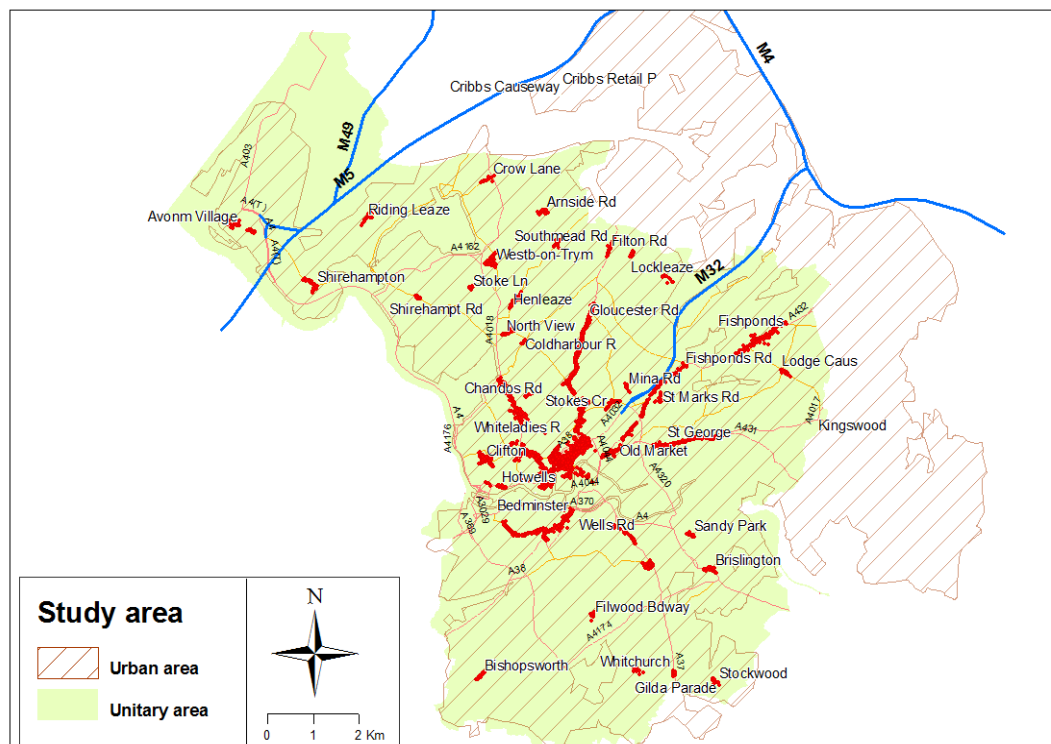
Bristol is notable for having a remarkably large number (50) of retail centres for which Goad/Experian survey data is available, therefore it offers a rich potential to conduct a 'drilled down' analysis, which can broaden the understanding of intra-urban variation in economic performance of high streets during the economic crisis. Such thorough and extensive surveys are linked to the Charles Goad mapping company which was commissioned during the late-1960s to undertake mapping of retail centres by the then Department of Trade and Industry. Remarkably, 47 Bristol retail centres had their surveys completed in the pre-crisis (Jul 2006) and within-crisis periods (Oct 2008 - Feb 2009) allowing the examination of their response to the onset of the 2008-09 economic crisis. Additionally, all those centres were resurveyed in the post-recession shallow recovery period (Feb – Mar 2010), thus extending the availability of systematic data on those centres to a 'third-wave' period. This vital information has facilitated an assessment of intra-urban retail centres' resistance to and recovery from the global economic crisis, and additionally it allowed us to examine the extent of the reorientation process and emerging trajectories of growth.

6.1.1 Retail hierarchy and centre size

In the case of Bristol, the Goad survey data cover a remarkably large number of intra-urban retail centres. The systematic retail/service composition data was available for 47 retail centres. According to the PPS4 definition of retail hierarchy, DTZ (2006) identified the City which comprised Broadmead, Baldwin/Victoria Street and Queens Road; 11 town centres, also referred to as major district centres, 10 district and more

than 20 local centres (see Appendix 2 for details). However, the Goad classification of retail centres in Bristol at least in some cases is questionable. As suggested by the DTZ some central retail areas, especially in the inner city locations, should be treated as a whole. For instance, there is no reasonable argument why Baldwin Street situated a mere 150 m away from Broadmead is a 'retail centre' in its own right and the newly opened Cabot Circus is a part of Broadmead. On the contrary, Goad surveyors treated the entire inner city of a comparable in size Leeds, Manchester or Liverpool as a one retail centre – the central retail area. Besides, some other retail centres located within the Bristol urban area such as the regional shopping centre of Cribbs Causeway and a town centre of Kingswood were excluded from the analysis, due to the Goad geographical classification. As they were located outside Bristol Unitary Area they have not been accounted for as Bristol centres (see Figure 6.1 for the discrepancies between Bristol urban and unitary areas).

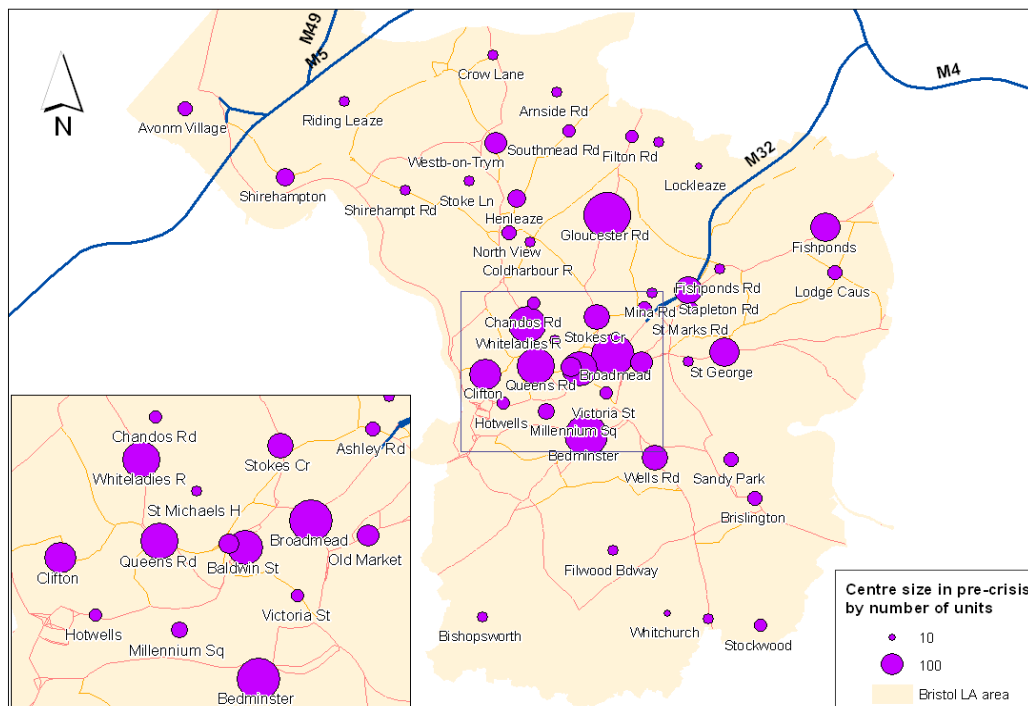
Figure 6.1: Study area; comparison of Bristol unitary and urban area



Taking into consideration the key characteristics likely to impact Bristol retail centres' differential performance; this study provides detailed insights into a) centre size, b) retail/service mix, c) diversity and d) corporate foodstore presence. In terms of

the centre size, an average Bristol high street/town centre comprised 88 outlets in the pre-crisis period, which was significantly fewer than the 237 units across the four-region sample. Furthermore, as many as 35 of Bristol centres, almost 75% of the entire sample, were classified as small retail centres (below 100 units), a further 10 were medium in size and only two, Gloucester Rd and Broadmead, were large, comprising more than 400 units. The latter, however had been considered as a medium-sized centre in the pre-crisis survey, prior to the opening of Cabot Circus in 2008 (Figure 6.2). On the other hand, the smallest centres such as Lockleaze, Whitchurch, Mina Rd and Shirehampton Rd comprised no more than 20 retail/service outlets. Taking into consideration the amount of floorspace occupied by retail and service (including vacant) outlets the average size of a Bristol centre prior to the economic-crisis measured 0.166 million Sq Ft and once again, was considerably smaller than the four-region sample average of 0.526 million Sq Ft.

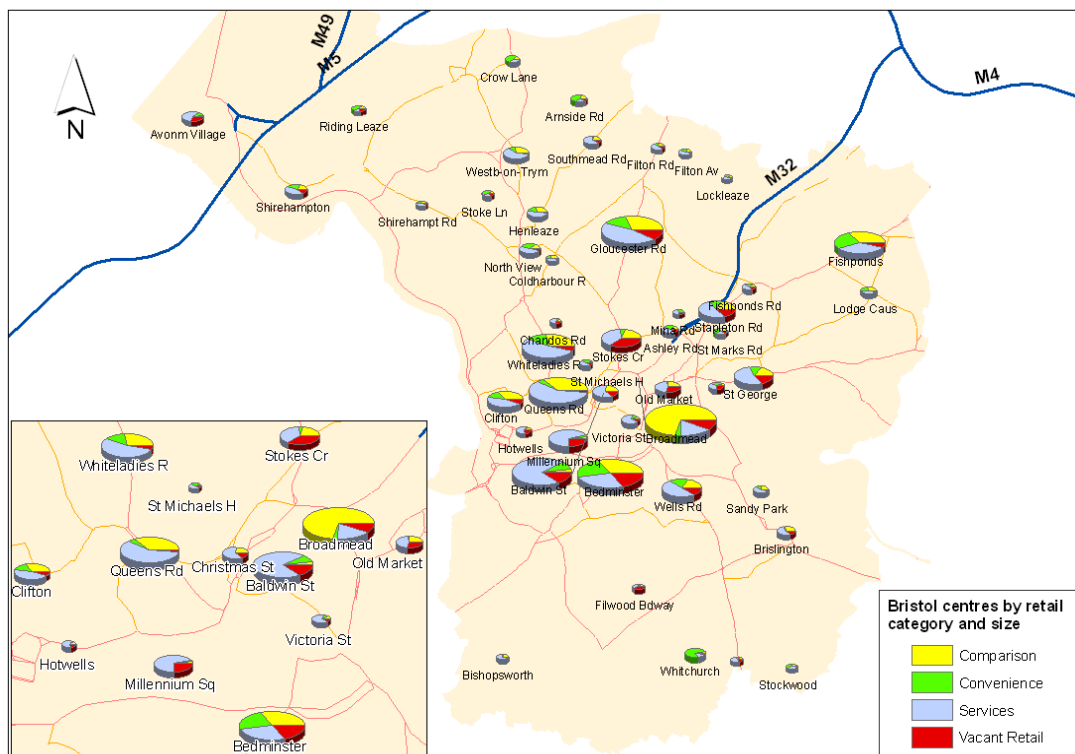
Figure 6.2: Bristol analysed centres by size (no of units)



Interestingly, the total floorspace of Bristol's largest centres such as Broadmead with 0.890 million Sq Ft, Bedminster (0.757), Gloucester Rd (0.676), Baldwin Street (0.624) and Queens Rd (0.607) have only slightly exceeded the four-region sample

average. However, in the case of Broadmead this has changed radically as opening of the Cabot Circus in 2009 has almost doubled its floorspace. The 1.54 million Sq Ft of Broadmead's floorspace area, recorded in the within-crisis survey, was closely comparable to the size of the regional shopping centres of Cribbs Causeway and Cribbs Retail Park combined. Remaining Bristol centres have not observed any major developments during the analysed periods and hold their size relatively constant. On the contrary, the smallest centres of Lockleaze, Mina Rd, Chandos Rd and Shirehampton Rd each had their total floorspace area under 25,000 Sq Ft, which was approximately an equivalent of an average size supermarket (Figure 6.3).

Figure 6.3: Bristol centres by Goad (Sub) Class and their size in Sq Ft



When taking into consideration both measures of retail centre size, the number of units was strongly associated with the floorspace in majority of Bristol high streets, however some centres such as Whitchurch or Millennium Square exhibited somewhat different patterns. The former, anchored by Asda and comprising only 12 stores, has been entirely dominated by the large grocery superstore, demonstrating an abnormally large ratio of available floorspace to the total number of units. The latter although having a similar ratio, is a new development that has resulted from an

extensive inner city regeneration scheme and has comprised a low number of predominantly large units occupied by sport and leisure facilities with some of them still having been vacant.

6.1.2 Retail/service mix and diversity in the pre-crisis period

The aggregated pre-crisis data for the analysed Bristol high streets and town centres, shown in Table 6.1, shows total numbers of units and retail floorspace by broad retail/service type. In 2006, the overall number of retail/service outlets across the 47 Bristol high streets exceeded 4,000 and the total floorspace area measured in Sq Ft was almost 7.8 million. Furthermore, this was supplemented by almost 0.7 million Sq Ft of additional newly completed retail and service floorspace predominantly as a result of the opening of Cabot Circus immediately before the economic-crisis. This had a substantial impact on the Broadmead vacancy rate, elevating it by +8.7pp; this is to say an increase from 12.5% in the pre-crisis survey to 21% in the within-crisis survey.

Table 6.1: Bristol retail occupancy rates by Goad Sub Class

Broad category	Retail composition in pre-crisis			
	units no	% of total	Sq Ft (000)	% of total
Comparison	1129	27.6%	2208.8	28.4%
Convenience	414	10.1%	1046.0	13.5%
Retail services	526	12.9%	643.0	8.3%
Financial & business	474	11.6%	752.8	9.7%
Leisure services	971	23.8%	2216.1	28.5%
Vacant retail	572	14.0%	901.9	11.6%
Total	4086		7768.6	

One way of dealing with this issue was to use alternative fixed boundaries that excluded the effect of incorporating large new areas by a particular retail centre. Nevertheless, in this analysis we used both the variable and fixed boundaries. Table 6.1 also shows that Bristol retailing, in terms of the pre-crisis retail unit numbers, was dominated by comparison retail (27.6%) and leisure services (23.8%) with the remaining broad categories occupying between 10 and 13%. The aggregated vacancy

rate in the pre-crisis survey at 14% was significantly higher than the averages in the southern part and across the entire sample. When using available floorspace as a measure the trend was largely duplicated, with leisure services and comparison retail having the biggest share in Bristol retailing at 28.5% and 28.4% respectively, followed by the convenience sector with 13.5%. The proportion of vacant retail for this method was slightly smaller at 11.6%.

The split between comparison, convenience retail and services at the individual centre level, shown on Figure 6.3, has exhibited a relatively uniform trend, one which is comparable to the aggregated results from table 6.1 and indicates a rather healthy retail mix. However, a small number of retail centres such as Baldwin Street, Broadmead or Millennium Square appeared to have been entirely controlled by a single retail/service category. In the case of Baldwin Street and the Millennium Square service outlets and in the case of Broadmead, comparison retail occupied more than 70% of total available retail floorspace (Figure 6.4).

The next important feature depicts a more general split between retail and service outlets. The cross-regional analysis indicated that a higher proportion of services is a key factor sustaining a centre's vitality and viability during the economic crisis. Given as a ratio, it indicates that across the Bristol sample, on average there were 1.7 services for each retail unit, a substantially higher figure than the four-region sample equivalent of 1.2. Furthermore, the majority of Bristol retail centres had a relatively high proportion of independent retailers in the pre-crisis period, averaging 73.2%. This, sharply contrasting with the 64% in the South and 62.5% across the entire four-region sample, indicates that retail diversity was a strong element of many high streets' in the city during the pre-crisis period. High diversity appears to be one of the vital determinants of UK high streets' strong economic performance and enhanced resilience to the shock of economic crisis (Wrigley and Dolega, 2011). There were even some small retail centres such as Victoria Street and Fishponds Road that completely lacked any presence of multiple retail, or comprised at most one multiple retail outlet e.g. Coral in Filwood Broadway and the Post Office in Mina Road. On the contrary, only a small number of Bristol retail centres contained a substantial number of multiple retailers. The only example where multiple retail had a dominant position in the pre-

crisis period, occupying more than half (62.2%) of all retail outlets, was Broadmead. Other centres where the share of multiple retailers was substantial included several major districts e.g. Queens Road (45.5%), Fisponds (37.2%) and Shirehampton (35.5%) or other parts of the city centre e.g. Baldwin Street (37.7%).

Figure 6.4: Composition and floorspace of High Streets in central Bristol

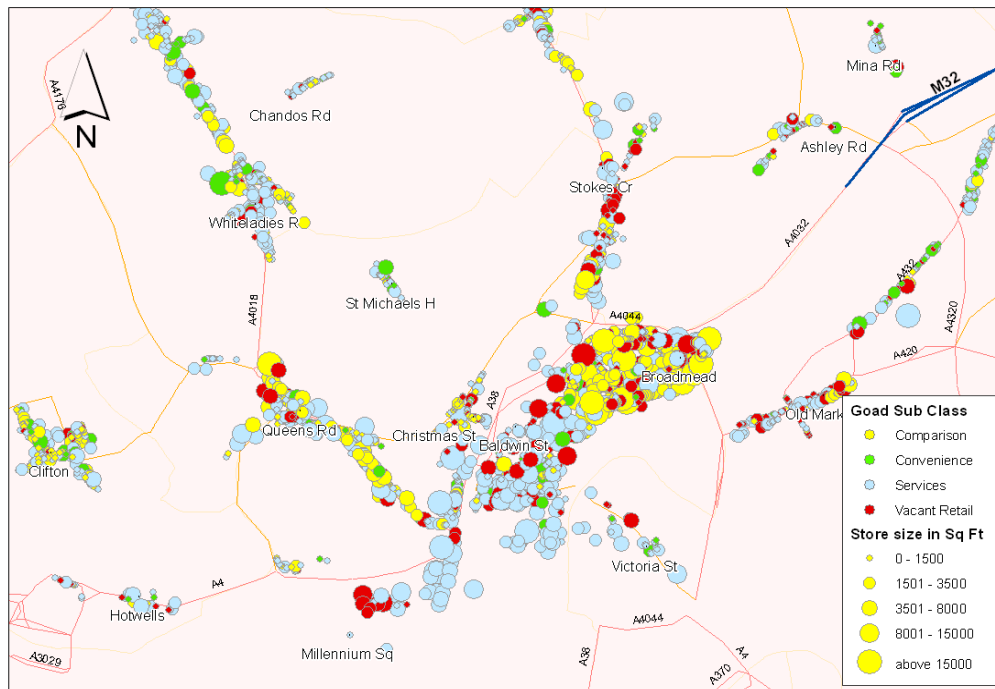


Table 6.2: Corporate foodstore presence/entry in Bristol

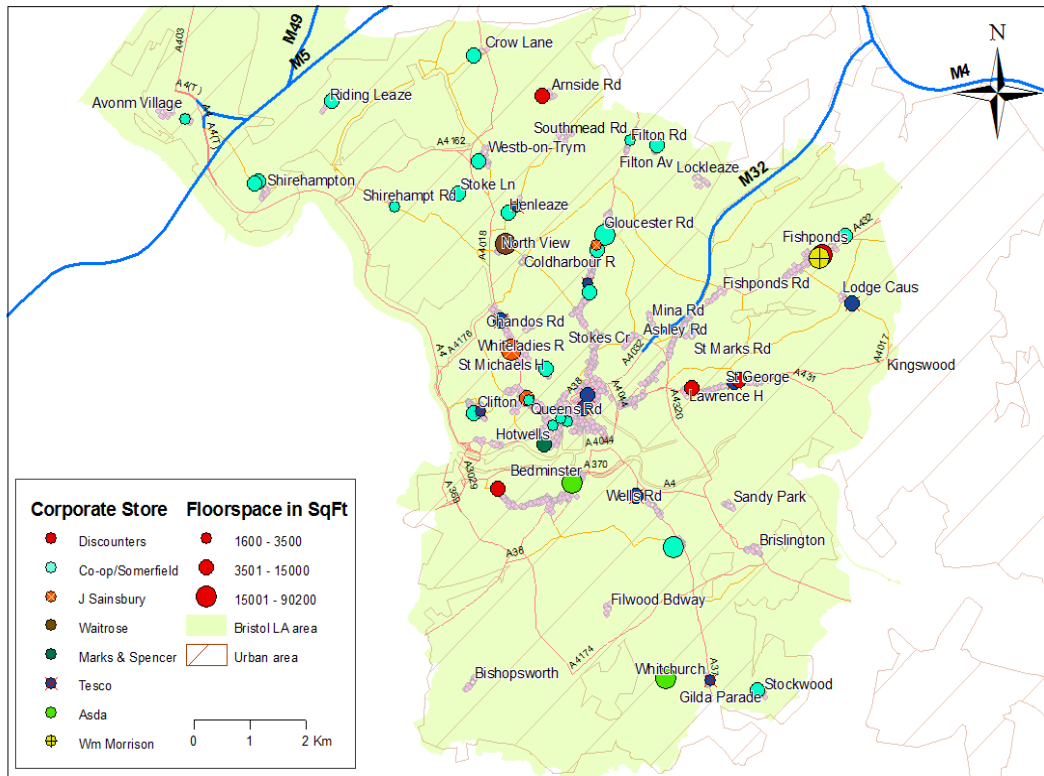
Grocery retailer	Pre rec (Jul06)			Rec (Oct 08-Mar09)			Post rec (Feb10)		
	C-store (TC)	Supermarket In-TC	Edge-TC	C-store In-TC	Supermarket In-TC	Edge-TC	C-store (TC)	Supermarket In-TC	Edge-TC
Tesco	8	2	3	12	2	3	13	2	3
J Sainsbury	1	2	2	1	2	2	3	2	2
Asda	-	2	-	-	2	-	-	2	-
Morrisons	-	1	-	-	1	-	-	1	-
Coop /Somerfield	10(1)	6(7)	-	11	12	-	10	12	-
Waitrose	-	1	-	-	1	-	-	2	-
M&S	1	-	-	-	-	-	-	-	-
Aldi	-	3	-	-	3	-	-	3	-
Lidl	-	2	2	-	2	3	-	2	3
Total	21	26	7	24	25	8	26	26	8

6.2.1 Corporate foodstores during the pre-crisis period

According to the 2006 pre-crisis Goad survey, there were 21 corporate convenience stores and 26 supermarkets located in-town-centre, which were defined as those positioned within Goad-identified retail centre boundaries. Convenience stores were specified as those with net floorspace below 3,500 Sq Ft and supermarkets were identified as those stores that had net selling area above 3,500 Sq Ft. Subsequently, reflecting the Competition Commission store format classification, the supermarkets were subdivided further, using the threshold of 15,000 Sq Ft, into the mid-sized and large superstores. It appears that in the pre-crisis period Coop¹ and Tesco had dominant position in the c-store sector with 10 and 8 outlets respectively (Figure 6.5). Furthermore, it can be seen from Figure 6.5 that Sainsbury, Somerfield and M&S operated one convenience store each. Taking into consideration the policy compliant supermarkets, Somerfield and Co-op operated the highest number of mainly medium-size stores in the pre-crisis period, with seven and six outlets respectively. The

high number of Somerfield stores can be justified partially by the fact that the corporation had its headquarters in Bristol.

Figure 6.5: Policy compliant corporate foodstores recorded in the pre-crisis period



The three largest grocery retailers - Tesco, Asda and Sainsbury - each had two supermarkets located in various town centres. Furthermore, WM Morrison owned one superstore in Fishponds and the upmarket Waitrose was present in an affluent area of North View. Finally, Aldi and Lidl, representing the so-called Limited Assortment Discounters, operated three and two stores respectively.

Taking into consideration the store format, it was clear that the mid-sized supermarkets between 3,500 and 15,000 Sq Ft were prevailing in-town-centre locations, with 20 such stores across the intra-urban sample. This reflected well the preferences in planning regulation and the subsequent adoption by major retailers to that regime. The remaining six large superstores present across Bristol retail centres, those with the floorspace above 15,000 net Sq Ft, included two Asda stores and one of each: VM Morrison, Waitrose, Somerfield and J Sainsbury.

Additionally, there were four policy compliant supermarkets identified as ‘edge-of-town centre’, positioned within 400m or 5 min walking distance from the primary shopping area of a particular retail centre. In this category, only stores above 3,500 Sq Ft were considered, as it was believed that small convenience stores located on the edge/out-of-centre would have either very marginal or no impact on an existing centre. Further, three large out-of centre developments have been identified - those which were located beyond 400m of nearest town centres (Figure 6.6). In turn, in this category only the larger superstores, with the net floorspace above 15,000 Sq Ft, were considered to have potentially significant impact on the nearest town centres.

Figure 6.6: Edge-of-Town centre/ Out-of-Town centre corporate foodstores in pre-crisis period

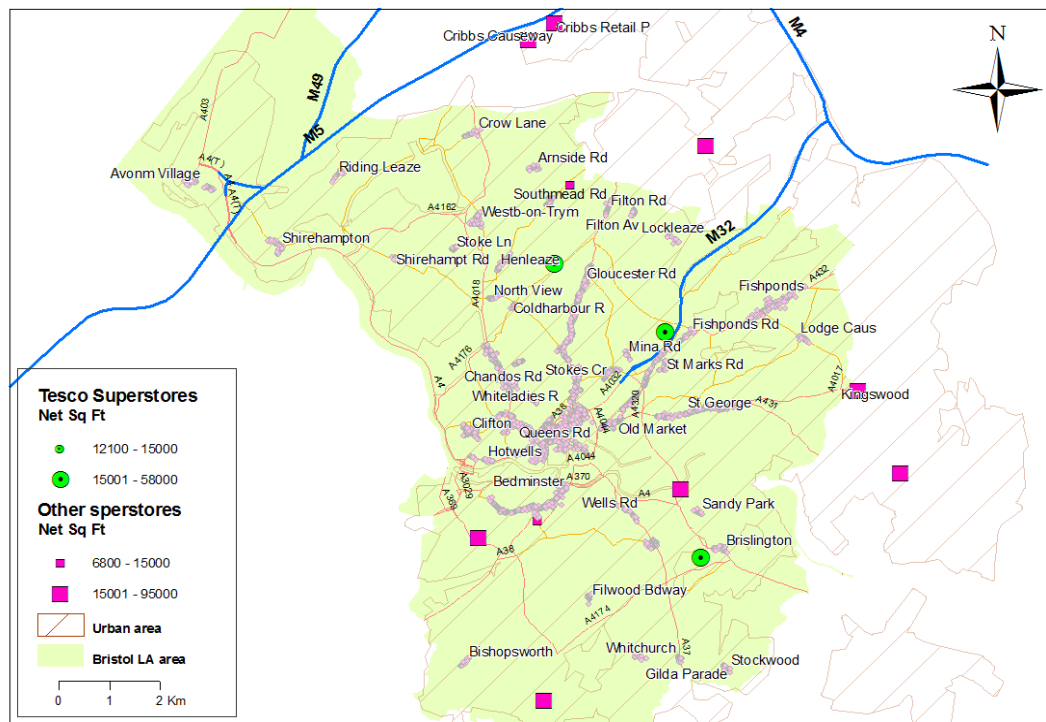


Figure 6.6 shows that Tesco had three large format superstores (Tesco Extra), two of them situated on the edge-of Brislington and Fishponds Rd and one out-of-centre in close proximity to both Gloucester Rd and Henleaze. Sainsbury's on the other hand, operated two out-of centre superstores in the pre-crisis period, however, both were within walking distance (about 800-900m) from Sandy Park and Bedminster. Additionally, taking into consideration the Limited Assortment Discounters, the edge-

of-town stores were represented by Lidl, having two additional stores in the near proximity of Bedminster and Southmead Rd. Finally, there were also several large superstores shown on Figure 6.6; however they have not been accounted for by this study. Although the majority of these stores were located within Bristol urban area, the town centre of Kingswood with Asda and Sainsbury's, and Cribs Causeway, with Asda and WM Morrison, were effectively beyond Bristol City Unitary boundaries. Figure 6.6 also shows the presence of an additional large corporate foodstore in the southern part of Bristol unitary area, which was unaccounted for by the compiled figures. What on first sight appears to have been an out-of-town development was in fact a large in-town-centre superstore. The WM Morrison store, which anchored the retail-led urban regeneration project in Symes Avenue, was excluded from our analysis due to the lack of systematic data.

6.2.2 Corporate foodstore entry between the pre-crisis and within-crisis surveys

When taking into consideration the corporate foodstore entries between the pre-crisis and within-crisis periods, Tesco appeared to have been the leading investor. According to Goad surveys the large grocery retailer added four² new convenience stores (two in Baldwin Street, and one in each: Broadmead and Bedminster) bringing their total number up to 12 in early 2009. This represents a 50% increase in relative measure (M1) on the eight stores present in the pre-crisis period. Moreover, since Tesco had few additional convenience stores situated outside town centres surveyed by Goad, they have been excluded from the descriptive analysis. Nevertheless, Tesco Express has become the most common fascia amongst convenience stores in Bristol.

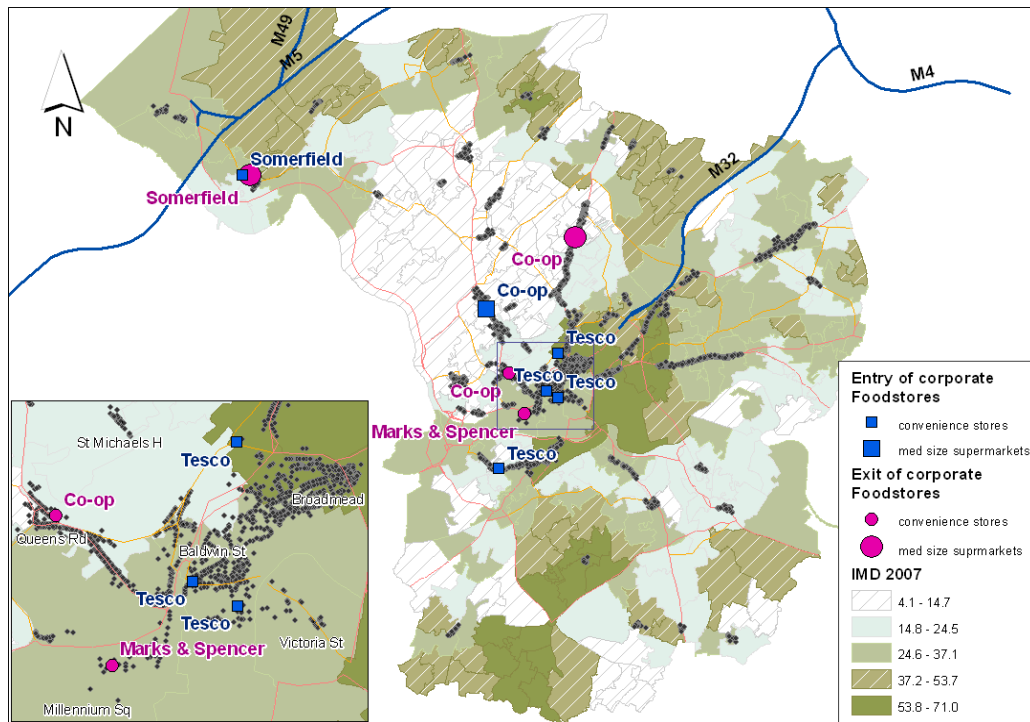
Besides, Coop/Somerfield opened two stores during that period; a convenience store in Shirehampton and a small supermarket (5,100 Sq Ft) in Whiteladies Rd, replacing what in the pre-crisis period was a video rental store. However, the retailer closed down three of its outlets during that period including a convenience store in Queens Rd and two supermarkets in Gloucester Rd and Shirehampton, overall

decreasing the total number of its outlets by one. Although none of Bristol's analysed high streets/town centres was subject to the Office of Fair Trading order to divest 133 Somerfield stores across the country as a part of the merger deal (OFT, 2009), it appears that the option of having two mid-sized supermarkets (Somerfield and Co-op) in such a small centre as Shirehampton could have not been viable. In effect, some sort of trade-off took place with a voluntary divestment of Somerfield supermarkets on the one hand, but on the other a takeover from Texaco of a small forecourt store. Furthermore, according to Goad surveys M&S closed its only convenience store that in the pre-crisis period had operated in Millennium Square, effectively, withdrawing its presence from Bristol's convenience market. Finally, in terms of the heavy discounters, no great expansion was detected, as no single in-town-centre entry had been recorded, although Lidl has opened one new store on the edge of Brislington. Figure 6.7 shows all corporate foodstore entries/exits across Bristol high streets/town centres between the pre-crisis and within-crisis periods.

In order to see whether the siting of new stores has been increasingly taking place in the more deprived areas, often viewed as retailers' response to the tightening in retail planning regulation (Wrigley, 2010), this study has employed the IMD index from 2007. The multiple deprivation scores in Bristol LA varied from around 5 to 66, with the lowest values representing the least deprived areas. It appears however from Figure 6.7, that the relationship between an average IMD score and corporate foodstore entries was unclear or at best, weak. The comprehensive examination shows that one of Tesco's entries to a relatively deprived area of Broadmead/Stokes Croft (IMD score 55.6) has resulted from an extension of Broadmead town centre boundaries by Goad surveyors, as the actual store opening date had been prior to the pre-crisis survey. A further two Tesco entries were located in Baldwin Street, an extension to the city centre shopping area, which had the IMD score of 33.5. It needs to be pointed out that the IMD score for Baldwin Street immediate catchment area, computed the way that was described in Chapter 3, has little relevance as the footfall in this part of the city results predominantly from the activities of office workers and night-time economy. Furthermore, this trend appeared to have been followed by Sainsbury's which opened convenience stores in the above locations during the post-recession shallow recovery

period. To a degree, this validates some findings of Wood et al., (2006 p.241) who argued that ‘... factors that are especially important in making convenience store sites viable include footfall and the degree of available car parking’.

Figure 6.7: Corporate food stores entry/exit in Bristol between the pre-crisis and within-crisis periods



6.2.3 Corporate foodstore entry between within-crisis and shallow recovery period

Between the pre-crisis and within-crisis surveys Tesco opened an additional convenience store in Queens Rd and Sainsbury's, which appeared to have been catching up with its bigger competitor, opened further two convenience stores in the inner city locations of Broadmead and Baldwin Street. John Lewis, which opened a Waitrose store in Queens Rd, filling what in the within-crisis survey was a vacant outlet, represented a single entry of a corporate foodstore above 3500 Sq Ft in that period. Drawing from the entry/exit analysis it becomes explicit that Broadmead, Baldwin Street and Queens Rd have been the key Bristol locations for corporate grocery retailers' investments. Indeed in March 2010 the total number of corporate foodstores present only in those three locations was 12, with Tesco having the biggest share (6 stores), followed by Sainsbury's (3 stores), Co-op (2 stores) and Waitrose (1

store). In terms of the store size, only the policy-compliant formats were present, with nine convenience stores and three mid-size supermarkets. This could imply that corporate chains are more interested in large centres because they are targeting the workplace market rather than traditional residential catchments.

As already mentioned, the above figures excluded four Iceland stores systematically present in Bristol high streets and town centres because they fell into a 'Frozen food' Goad category, rather than supermarkets. Nevertheless, the number of Iceland stores was constant with no new entries recorded throughout the analysed periods.

In summary, the overall number of corporate foodstores in Bristol high streets and town centres has been on a slow but steady rise, totalling 47 in 2006, 49 in 2009 and 52 in 2010, predominantly due to the rapid expansion of convenience stores. In addition, the number of edge/out-of centre stores slight increase. The remarkable growth in convenience store numbers was investigated further and not only corporate entries/exits but also the non-affiliated independent and symbol group retailers were considered by the more comprehensive analysis.

6.3 Convenience stores entry/exit analysis

The number of convenience stores in Bristol high streets/town centres has increased substantially, overall adding 23 new stores between the pre-crisis survey and the period of post-recession shallow economic recovery (Table 6.3). These findings were consistent with the substantial growth in convenience store numbers observed in the UK during the first half of the 2000s reported by the Competition Commission (2007) and Wrigley et al., (2009a). Taking into account the *type of operator* our analysis demonstrates that the biggest change in convenience store numbers, a raise of +31.3%, occurred in the non-affiliated independent retailers, whilst increases in symbol group and corporate retailers were slightly smaller, at +28.6% and +23.6% respectively.

Some high streets/town centres had already recorded a substantial presence of convenience stores in the pre-crisis period, with highest numbers ranging from 5 to 7 recorded by Gloucester Rd, Stapleton Rd, Queens Rd and Stokes Croft. Subsequently,

in the within-crisis period Stapleton Rd experienced the biggest net increase in stores numbers (+4) followed by Baldwin Street (+2) and Bedminster (+2).

Table 6.3: Overall numbers of convenience stores in Bristol by type

Survey period	Independent	Symbol	Corporate
Pre-crisis (2006)	32	28	21
Within-crisis (2008/9)	41	26	24
Post-recession recovery (2010)	42	36	26
Overall change 2006-2010	+10	+8	+5
Change in % (M1)	+31.3%	+28.6%	+23.8%

Further, some Bristol retail centres such as Ashley Rd, Broadmead, Gloucester Rd and Stapleton Rd each experienced a number of additional net entries during the post-recession shallow recovery period. This provides evidence that the expansion of convenience stores, partially linked to the rise of the so-called 'convenience culture', took place not only between the pre-crisis and within-crisis periods but the trend was also very robust in between the within-crisis and shallow recovery periods. As a result, some Bristol high streets, regardless of their size, have begun to see record high numbers of convenience stores e.g. Stapleton Road (12) or Gloucester Road (10).

6.3.1 Net vs. overall entry/exit

The overall changes in convenience store numbers across Bristol's high streets/town centres, shown in Table 6.3, account not only for the net entry/exit experienced by a particular *type of operator* but also include the 'retail churn' recorded amongst those types of convenience stores. This is to say that we distinguish two different types of convenience store entries; (a) those that were drawn from a diverse range of retail categories, referred to as *net entries*; (b) those that resulted from some sort of acquisitions, mergers and fascia changes within previously existing convenience stores, referred to as *overall entries*.

Goad surveys however, would normally record both types of entries with no clear distinction. Our analysis addresses this issue by constructing two separate tables, each depicting a different type (net or overall) of c-store entry/exit. Firstly, Table 6.4 presents only the *net entries and exits*, thus excluding any 'retail churn' associated

with mergers or changes in facia within the c-store sector. It becomes clear from the table that between the pre-crisis and within-crisis periods the independent retailers were primarily accountable for the net increases, raising the number of convenience stores by 10 outlets. The gains of corporate retailers were marginal (+1) and on the contrary symbol group retailers observed a small decline (-1) during the same period. Taking into consideration the period between within-crisis and shallow recovery, shows that the independent retailers continued with the expansion but only at half of the previous rate. Furthermore, the corporate grocery retailers observed only one net entry, but symbol group retailers experienced a substantial growth, adding +7 new convenience stores. However, some of the growth recorded by symbol group retailers resulted purely from the alteration in Goad classification as several units recorded in the within-crisis survey as CTN's appeared in the post-crisis survey as convenience stores. This could be somewhat justified in the case of the outlets that had undergone some kind of physical modification, but this was not always the case.

Table 6.4: Net entry/exit of convenience stores in Bristol, excluding churn within c-store sector

Period		Independent	Symbol	Corporate
Between pre-crisis and within-crisis	Entry	15	2	3
	Exit	5	3	2
	Net change	+10	-1	+1
Between within-crisis and post- recession (recovery)	Entry	8	8	3
	Exit	3	1	2
	Net change	+5	+7	+1
Net change 2006-2010		+15	+6	+2

Nevertheless, considering the entire period between 2006 and 2010 it can be seen that the majority (65.2%) of the net increase in convenience store numbers was accounted for by the non-affiliated independent retailers, with 26.1% of the increase having been represented by the symbol group and 8.7% by corporate retailers.

In contrast, Table 6.5 shows the overall changes which comprise the net entries/exits (as shown in Table 6.4) supplemented by those associated with 'retail churn' within the c-store sector, shown in brackets.

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Overall, there were as many as nine such entries recorded in the within-crisis survey and five during the shallow recovery period. In the former period, independent retailers recorded three entries due to a change of fascia/ownership of previously existing symbol group convenience stores. The three c-stores that had been operating under the fascia of Costcutter in the pre-crisis period appeared as independent c-stores in the within-crisis survey. Conversely, as Table 6.5 indicates, four c-store entries observed by symbol group retailers were simply drawn from what previously were independent convenience stores. Two of those outlets changed their fascia to the rapidly expanding Premier Group and a further two joined the Bestway One symbol group but retained their previous fascias.

Table 6.5: Convenience Stores overall entry/exit (including the churn within c-store category)

Period		Independent	Symbol*	Corporate
Between pre-crisis and within-crisis	Entry	15+(3)	2+(4)	3+(2)
	Exit	5(+4)	3(+5)	2
	Overall change	+9	-2	+3
Between within-crisis and post-recession (recovery)	Entry	8	8+(4)	3+(1)
	Exit	3(+4)	1+(1)	2
	Overall change	+1	+10	+2
Overall change 2006-2010		+10	+8	+5

*includes filling station stores

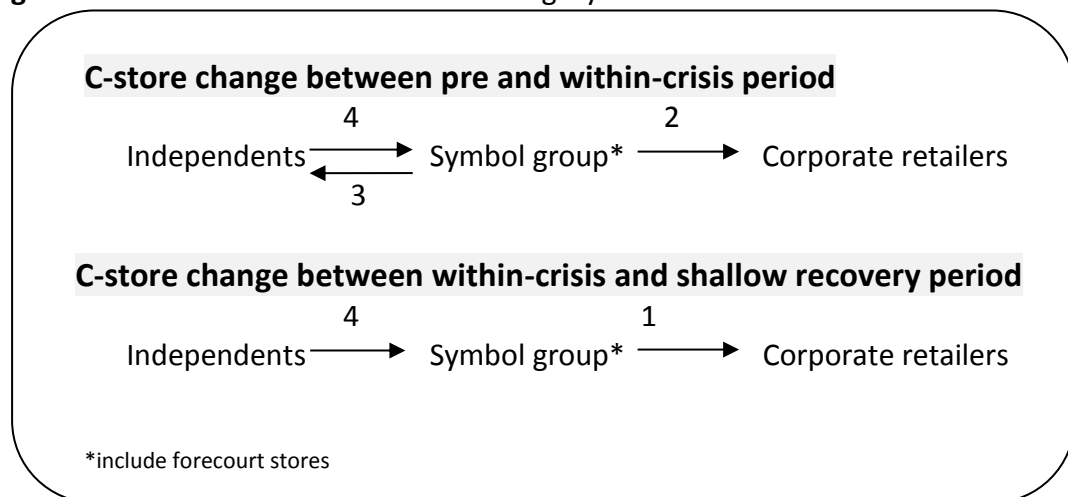
Such new affiliations were not uncommon across the country as independent retailers who joined any symbol group could enjoy the benefits associated with being a part of a larger organisation such as lower purchase price or bigger distribution network but importantly they could also fulfil rising consumer expectations (Competition Commission, 2006). For instance, Londis (2011) on its website appeals to independent retailers listing other benefits such as training and development, which help to motivate staff and improve performance, legal assistance, marketing and promotions or store interior development.

The corporate gains associated with retail churn within the c-store sector included Tesco Express and Somerfield, both in effect resulting from conversions of what in the

pre-crisis had been respectively Budgens and Star Market - a small 600 Sq Ft store at Texaco filling station.

Subsequently, although between the within-crisis and shallow recovery periods independent retailers have not experienced any entries due to 'retail churn' within the c-store category the symbol group still had continued with its previous trend drawing an additional four stores from what in the within-crisis period were non-affiliated independent convenience stores. Likewise, the Co-op took over another forecourt c-store at a Texaco filling station in the shallow recovery period. The simple diagram below (Figure 6.8) helps to visualise the magnitude and flow direction of 'retail churn' between the three types of convenience stores, showing only those entries that have purely resulted from change in fascia/ownership within the c-store sector.

Figure 6.8: Retail churn within c-store category



Thus, incorporating the entries associated with 'retail churn' within the c-store category into the net changes indicates two things when the wider period between 2006 and 2010 is considered. First, the total change in convenience store numbers was constant using both methods, recording an increase of 23 units. Second, the split by *type of operator* varied considerably with the non-affiliated independent retailers being responsible for 43.5% of the overall increase, symbol group 34.8% and corporate retailers 21.7%. This implies, perhaps not surprisingly, that both symbol group and corporate retailers were more likely to expand by taking over other, primarily independent and previously existing convenience stores. Nevertheless, in summary

using both methods, the emerging picture was similar; the independent retailers have predominantly driven the increase in convenience store numbers across Bristol high streets and town centres. Indeed, our analysis provides evidence that both symbol group and corporate retailers combined, accounted for less than half of the entire organic growth in convenience store numbers.

6.3.2 Retail centre hierarchy

Taking into consideration the hierarchy of Bristol retail centres' it has become clear that both the major district centres (the town centres as referred to by PPS6) and the district centres experienced the highest number of convenience store entries in both analysed periods. In terms of entry/exit by *type of operator* city and major district centres were the preferred choice amongst the corporate retailers. On the other hand, the non-affiliated independent retailers favoured notably major district and district centres with local centres being rather the second option. In the case of the symbol group, it appears that there was no preferred location between the pre-crisis and within-crisis periods, but district and local centres were the most popular options in the shallow recovery period (Table 6.6). Remarkably, there was a high number of local centres (8) that experienced symbol group c-store entries in the latter period resulting either from a conversion in Goad classification or 'retail churn' within convenience stores. Four outlets, presumably as a 'range extension' (Wrigley, 2007), were converted from what in the within-crisis were CTN's, and a further four convenience stores had simply undergone an ownership change. In other words, although none of these local centres, according to Goad survey, experienced a physical entry of a new convenience store, essentially there have been eight convenience stores accounted for by the *overall entry* method. In summary, this analysis provides evidence that whilst corporate retailers were more likely to open new stores in locations towards the upper end of the retail hierarchy, the independent retailers preferred centres towards the opposite end.

As mentioned above, it appears that the key location criterion for corporate retailers was not only the centre's higher position in the retail hierarchy but simultaneously the inner city location, which is normally characterised by different

consumer dynamics. City centres are normally associated with high numbers of visitors, workforce and students which on the one hand are likely to generate high footfall and on the other hand to create high demand for convenience goods. Our analysis confirms that the four centres that experienced corporate convenience store net entry were located in the inner city including Broadmead, Baldwin Street, Bedminster and Queens Road.

Table 6.6: Convenience store entry/exit by retail centre hierarchy

Pre/within-crisis							
Centre Type	Net change	Entry			Exit		
		independent	symbol	corporate	Independent	symbol	corporate
City	+2	0	1	2(+1)	0	0(+1)	1
Major district	+4	7(+2)	1(+3)	1(+1)	2(+3)	2(+3)	1
District	+2	5(+1)	0	0	3	0(+1)	0
Local	+2	3	0(+1)	0	0(+1)	1	0
Total	+10	15(+3)	2(+4)	3(+2)	5(+4)	3(+5)	2
Within/post-crisis							
City	+3	0	1*	2	0	0	0
Major district	+1	3	0	1(+1)	1	1(+1)	1
District	+7	5	3*	0	0	0	1
Local	+2	0	4*(+4)	0	2(+4)	0	0
Total	+13	8	8(+4)	3(+1)	3 (+4)	1(+1)	2

* CTN converted to CS: city x1, district x1 and local x4

() number of additional stores due to change in ownership within CS category

6.3.3 Convenience store entry and deprivation levels

Social exclusion and underserved communities have become a key agenda in recent retail planning regulation, giving much attention to poor access of deprived areas to fresh food and other retail goods. Large grocery retailers have increasingly recognised that there were development opportunities for them, especially if they could position their stores as regeneration investment for deprived communities. Table 6.7 shows convenience store entries by average level of deprivation (IMD 2007) derived for the immediate catchment area of each centre and grouped into three bands: low deprivation with IMD scores below 25, medium deprivation from 25 to 45 and high deprivation with IMD scores above 45. The compiled numbers in Table 6.7 imply that between the pre-crisis and within-crisis periods only medium and highly deprived areas experienced the net entries of c-stores and conversely the areas with

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low deprivation levels have recorded negative figures. However, in the shallow recovery period the trend was slightly different, showing a similar level of net c-store entries across all levels of deprivation. Breaking down these figures by *type of operator* indicates that in the case of independent retailers there was no prevalent trend, with entries and exits observed virtually across all levels of deprivation. However, symbol group retailers were more likely to open new stores in both medium and low deprived areas with only 20% of their new entries having been recorded in highly deprived areas.

Table 6.7: Convenience store entry/exit by deprivation score

Pre/within-crisis							
Deprivation level	Net change	Entry			Exit		
		independent	symbol	corporate	independent	symbol	corporate
Low (<25)	-1	4(+2)	1(+1)	0	3(+1)	1(+2)	2
Med (25-45)	+6	4	1(+3)	3(+2)	0(+3)	2(+2)	0
High (>45)	+5	7(+1)	0	0	2	0(+1)	0
Total	+10	15(+3)	2(+4)	3(+2)	5(+4)	3(+5)	2
Within/post-crisis							
Low (<25)	+4	2	2(+1)	1(+1)	0(+1)	0(+1)	1
Med (25-45)	+5	1	4(+3)	2	1(+3)	1	0
High (>45)	+4	5	2	0	2	0	1
Total	+13	8	8(+4)	3(+1)	3(+4)	1(+1)	2

() number of additional stores due to change in ownership within CS category

In the case of corporate convenience store entries, between the pre-crisis and within-crisis surveys, they all fell within medium levels of deprivation, but in the shallow recovery period, the picture was unclear.

Thus, it should be concluded that no significant relationship between the levels of deprivation in Bristol and convenience stores entries has been found.

6.3.4 Previous use

Taking into consideration the past use of the convenience stores entries observed in the within-crisis and in the post-recession shallow recovery period, the retail category they had been drawn from was established. As Table 6.8 shows, 40% of the new convenience stores' entries in the within-crisis period had resulted from conversions of what in the 2006 Goad survey were vacant retail units. Further, new

outlets and previously unclassified buildings have each accounted for 10% of new c-store entries.

Table 6.8: Retail categories that the net entries of c-stores were drawn from

Retail/service cat of same unit in previous survey	Additional CS within-crisis		Additional CS post-recession	
	units	%	units	%
Vacant	8	40.0%	6	31.6%
Household goods	1	5.0%	1	5.3%
Electrical & durable	0	0.0%	1	5.3%
CTN	0	0.0%	6	31.6%
Kids/ladies wear	0	0.0%	2	10.5%
Grocers & Delicatessens	1	5.0%	0	0.0%
Off-Licences	1	5.0%	0	0.0%
Health & Beauty	1	5.0%	0	0.0%
Filling Stations	1	5.0%	0	0.0%
Financial services	1	5.0%	0	0.0%
Music & video	1	5.0%	0	0.0%
Restaurants	0	0.0%	1	5.3%
Internet café	1	5.0%	0	0.0%
New units	2	10.0%	2	10.5%
Unclassified	2	10.0%	0	0.0%

The former comprise newly built outlets but can also be partially associated with the boundary change issue. The latter have possibly resulted from some sort of reclassification in Goad categorisation as some unclassified outlets in the pre-crisis were recorded as convenience stores in the subsequent surveys. There then follows a list of eight retail categories each having had one store converted to a convenience store. On the other hand, in the shallow recovery period vacant retail and CTN's accounted for the biggest share (31.6%), in their conversions to convenience stores; these were followed by new units and kids/women's wear with 10.5% and a further three categories with one converted unit each.

Finally, the destiny of those units that experienced convenience store exit in either of the analysed periods has been verified. The results, shown in Table 6.9 below indicate that the vast majority of those units vacated by the convenience stores were still vacant in the subsequent survey. Some units however had found a new occupier such as post office in the within-crisis period and health & beauty in the shallow recovery period.

Table 6.9: Use of units that experienced convenience store exit

Retail cat of same unit in the following survey	C-store exit within-crisis		C-store exit post-rec	
Vacant	6	60.0%	5	83.3%
CTN	1	10.0%	0	0.0%
Post Office	2	20.0%	0	0.0%
Furniture	1	10.0%	0	0.0%
Health & Beauty	0	0.0%	1	16.7%
Total	10		6	

6.3.5 Assessing growth strategies adopted by food retailers

This analysis has provided valuable insights into the consequences of more than a decade long tightening in retail regulation within the single urban area, demonstrating two interrelated aspects. The first shows that the large grocery retailers have widely adopted the ‘town centre first’ policy in Bristol, developing a majority of their stores in-town or edge-of-town centre locations. It has been found that of the 33 supermarkets considered by this study, only three were classified as the out-of-centre developments. In the pre-crisis period, both the Co-op and Somerfield had the highest number of foodstores, which could be partially justified by the fact that Somerfield had its headquarters in Bristol. Although Co-op was ordered by the Office of Fair Trading to divest 133 Somerfield stores across the country as part of a merger deal (OFT, 2009), none of the Bristol’s high streets was a subject to that mandate. Nevertheless, some voluntary divestment of the Somerfield supermarkets took place. Presumably, after the merger the Co-op ended up with not always a viable option of two supermarkets in some locations. The second reveals that majority of large grocery retailers have become flexible in terms of the store format, with the mid-size supermarkets and convenience stores having been the prevailing option. The rise in convenience culture (Wrigley, 2010), observed across Britain and other developed countries, has contributed to the rapid expansion in a number of the small convenience stores across UK town centres and high streets (Wood et al., 2010). In terms of corporate food retailers, it has been found that Tesco has been rapidly expanding into the sector of small convenience stores. According to Goad surveys the number of Tesco convenience stores has increased by 50% in the relative measure (M1) between late 2006 and early 2009, taking the lead in a small store sector during

the within-crisis period. Essentially, Tesco Express has become the most common fascia amongst convenience stores in Bristol. This rapid expansion has encountered some challenges, clearly demonstrated by the Bristol riots in April 2011 'sparked by a raid on a squat occupied by opponents of a newly opened Tesco Express store in Stoke Croft', as the Gurdian (22 April 2011) put it bluntly.

This study has also evaluated the nature and the extent of the convenience store entries. It has shown that the increases in convenience stores numbers were recorded by all types of retailers, however the independent retailers accounted for most of those entries, 65% on the net basis and 43.5% on the overall basis. The difference between those two figures suggests, perhaps not surprisingly, that both symbol group and corporate retailers were more likely to expand by taking over the previously existing convenience stores, predominantly independent. However, the examination of the past use of the net entries, has confirmed that the new convenience stores were most likely to fill previously *vacant* units, having a positive impact on a centre's vacancy rate.

More importantly, the findings which linked corporate convenience store entry to the locations towards the upper end of retail hierarchy are both interesting and in a need of further consideration. Most of the corporate convenience stores were located in the four inner city locations. This suggests two things: a) city centres generate more footfall including the night economy and b) the geo-demographics of city centre catchment areas differ substantially from the residential catchments. The so-called emergence of 'convenience culture' driven by changes in consumer culture is more likely to prevail in such inner city locations. According to Reimers and Clulow, (2004) the factors responsible for the emergence of convenience culture include time scarcity, longer working hours, increasing leisure orientation and the increased number of males responsible for shopping. Additionally, the large labour force working in the offices located in and around the city centre and the high student population dwelling within the nearby vicinity (DTZ, 2006) can be a decisive factor when choosing a location for a new store.

6.4 Descriptive results

Descriptive results have depicted the differential performance of retail/service categories across Bristol high streets and town centres in terms of their relative (M1) and absolute (M2) changes. Firstly, the period between pre-crisis and within-crisis surveys was analysed, then the changes between the within-crisis and shallow recovery periods were established. Such simple analysis provides a powerful tool, which on the one hand allows visual comparison of the immediate response of particular retail/service type to the onset of economic crisis and on the other, facilitates an assessment of the extent to which the recovery in the post-recession shallow recovery period took place. Moreover, the economic performance of each retail/service category in Bristol retail centres was assessed against regional trends and averages helping to understand the strengths and weaknesses of Bristol retail centres and depicting the dynamics responsible for intra-urban variations.

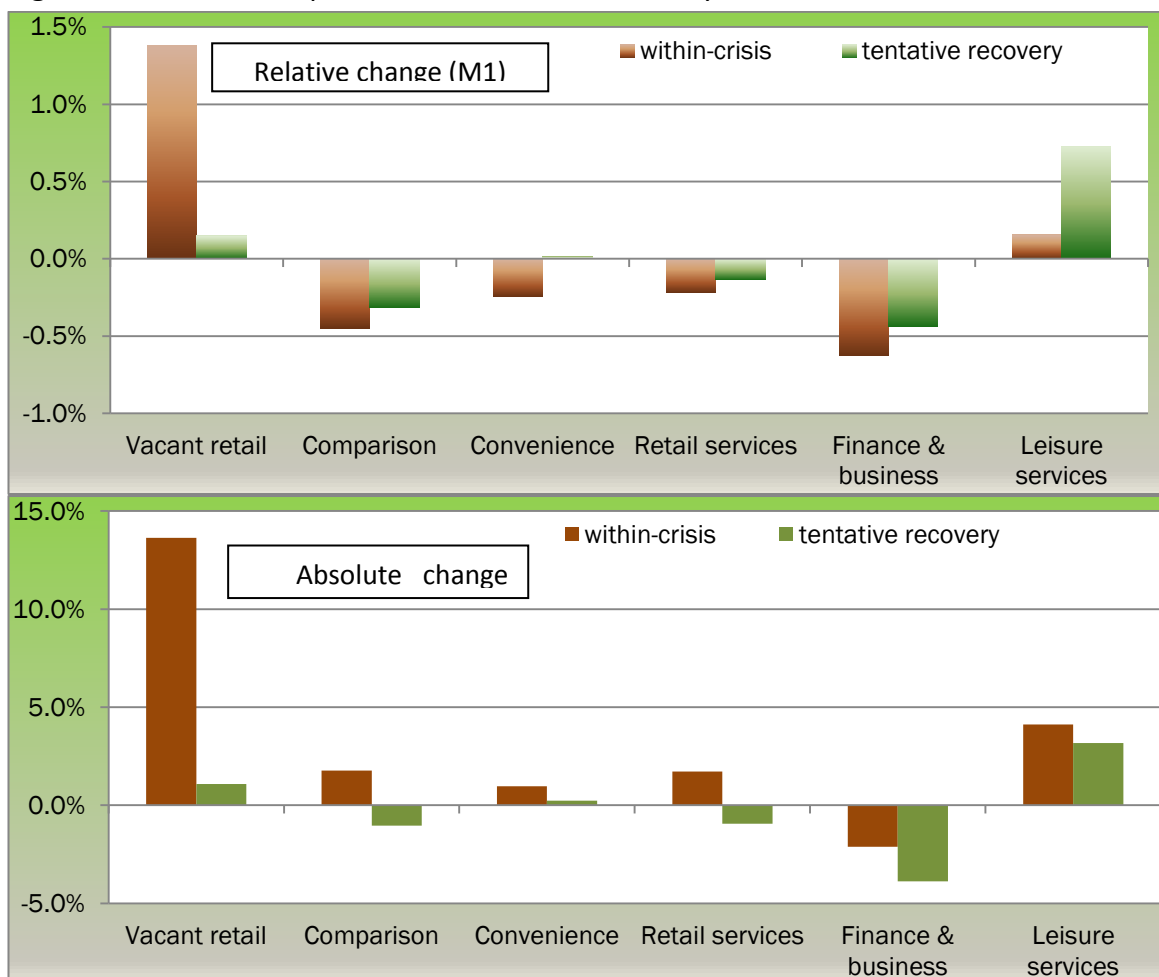
6.4.1 Changes between the pre-crisis and within-crisis periods

At first sight, the analysis of differential performance of retail/service categories in Bristol retail centres demonstrates parallel trends to those observed in both the southern part and the entire four-region sample. The strongest impact of the 2008-09 economic crisis was mainly evident in the high levels of shop closures, leading to increases in retail vacancy. Comparison retail and financial & business services appeared to have been the most fragile retail/service categories, contributing most to shop closures, whilst leisure services were very resistant to the impacts of economic crisis, continuing to increase their outlet numbers. However, as Figure 6.9 shows, the differential performance of the broad retail/service categories reveals a somewhat more complex picture which can be summarised as follows:

- The within-crisis surveys the vacancy rate in Bristol stood at 15.4% representing a +1.4pp increase on the 14% recorded in the pre-crisis period. Although the change in the Bristol vacancy rate was significantly lower than the +2.3pp in the South and the +2.7pp in the entire four-region sample, it should be emphasized that that change was calculated from a high base as the Bristol vacancy rate in the pre-crisis period stood at 12.1%, a significantly higher figure than any regional average.

- Bristol comparison retail, having declined only -0.4pp in absolute change (M2) terms, proved to be relatively resilient to the onset of economic crisis when compared to the averages in the southern region at -2.0pp and -2.5pp in the entire four-region sample. Remarkably, since the actual number of comparison retail outlets in Bristol rose by +1.8% between the pre-crisis and within-crisis surveys, the relative change (M1) has displayed a trend which contrasted sharply with the regional averages. The change in comparison retail unit numbers, measured as relative change, showed substantial decline in the South at -3% and in the four-region sample at -5.3%.

Figure 6.9: Differential performance of Bristol retail by Goad subclass



- Convenience retail appeared to have been somewhat resilient experiencing positive growth of +1% in overall outlet numbers between the pre-crisis and within-crisis surveys. As far as the absolute change is concerned, Bristol

convenience retail recorded a small decrease of -0.2pp. Such differential performance of convenience retail in Bristol was closely comparable with the averages for the South and the entire four-region sample.

- Financial & business services, although declining by -0.6pp in absolute measure, performed slightly better than the South average of -0.8pp. Nevertheless, it was the weakest performing category across Bristol retail centres.
- Leisure services have slightly increased their presence across Bristol high streets (+0.2pp), however it was only at half of the rates seen in the southern part (+0.5pp) or across the entire sample (+0.6pp). Changes between the within-crisis and shallow recovery periods

It is clear from Figure 6.9 that, when considering the absolute change, all broad retail categories performed somewhat better during the shallow recovery period. This is to say that a minor 'bounce back' to a positive territory has occurred in the case of convenience retail and the remaining categories, with the exception of financial & business services, which continued to decline but at lower rate. Most notably, the compiled vacancy rate period increased only by + 0.1pp, which was an equivalent of seven additional vacant outlets recorded in the shallow recovery across the entire city. The +1.1% rise in the relative change measure has contrasted sharply with the +13.6%, which corresponded to 78 new vacant units recorded during the onset of economic crisis. Further, the total number of comparison retail outlets recorded in the shallow recovery period declined by -1% relative to the within-crisis survey; and although it was still above (+0.8%) the pre-crisis numbers, has demonstrated its waning condition due to the prolonged economic and competitive hardships. Conversely, convenience retail continued with small growth in terms of the overall outlet numbers, which is reflected in Figure 6.9 by minor increases in the relative change at +0.2% and the absolute change at +0.01 percentage point. Financial & business services did not fare very well in the shallow recovery period experiencing further declines. In fact, the closure rate of their outlets has accelerated, measured as a relative change, and has positioned financial & business services amongst the poorest performing retail/service categories in Bristol. In terms of relative change, this broad category recorded a large decline of -3.8%, widening the overall gap in unit numbers between the pre-crisis and

the shallow recovery period to -5.9%. Nevertheless, when controlled by size it has shown some signs of a fragile improvement, with the absolute change decreasing in the shallow recovery period by -0.4pp, compared to -0.6pp in the within-crisis survey. Finally, the growth rate of leisure services accelerated in the shallow recovery period seeing a further increase of +3.2% in comparison to the numbers recorded in the within-crisis survey, this is to say a +0.7pp increase in absolute change.

6.4.2 Comparison retail

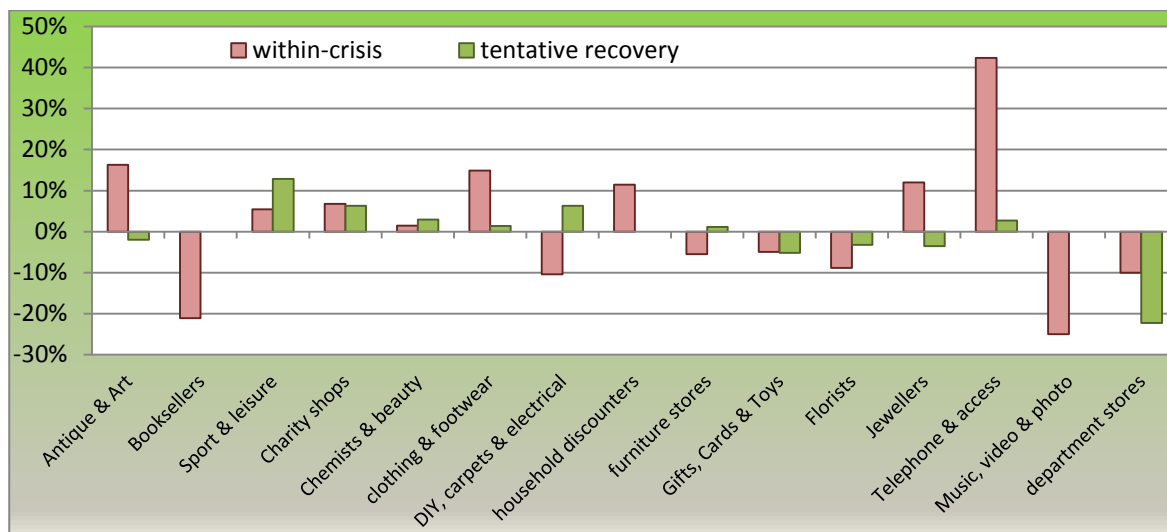
The stronger than regional average performance of Bristol comparison retail reveals a somewhat surprising picture when broken down into smaller sub categories. Of particular interest were the three following categories: antique & arts sellers, jewellers and clothing & footwear retailers, as they all noted positive growth in Bristol despite having declined sharply across the four-region sample. Overall, more than half of comparison retail sub categories had expanded between the pre-crisis and within-crisis periods when measured as a relative change (M1). Some increases were rather large, in certain cases exceeding 10% or 15% e.g. telephones and accessories +42.3%, antique & arts sellers +16.3%, clothing & footwear +14.9% and jewellers +12%. As a result of filling vacant outlets, observed also in the four-region sample, the household discounters and charity shops recorded substantial increases, +11.4% and +6.8% respectively (Figure 6.10).

Overall, the array of most resilient retail categories corresponded closely when both the relative and absolute changes were considered, however the magnitude of those changes varied slightly. The absolute change was highest in the case of clothing & footwear +2.8pp, followed by telephones and accessories +0.9pp, antiques & art +0.5pp, jewellers +0.4pp, charity shops and discounters both +0.3pp. Interestingly, in the case of telephones and accessories the high increase in outlet numbers was predominately due to the low base (M1), so when controlled by size (M2) the difference was not that apparent. Conversely, seven of fifteen comparison retail sub categories showed negative growth; these included music & photo -25%, booksellers -21.1%, DIY and electrical -10.4%, department stores -10%, florists -8.8%, furniture store -5% and gifts & toys -5%. The scale of a decline was comparable with the regional

averages with the exception of booksellers contracting more than twice the rate of the averages for the southern part and the entire four-region sample.

The relatively strong performance of Bristol comparison retail could be associated with the considerable enlargement of retail floorspace across the city (+13.3%) and crucially, with the fact that some six of seven major Bristol retail centres were surveyed during the early stage of the economic-crisis (Oct 2008).

Figure 6.10: Relative change (M1) in comparison retail by category



Although five of these high streets experienced significant rises in vacancy rates the adverse impact of economic crisis, in other words the time lag effect, could have been concealed in the case of other sub categories, effectively indicating the irregular gaps between conducted surveys. This was evident in the case of Woolworths that ceased operating half way through our within-crisis surveys, at the end of December 2008. The within-crisis survey had recorded three Woolworth's stores in the Bristol sample as trading. Indeed, this had diminished the extent of decline in the department & variety stores category between the pre-crisis and within-crisis periods but did escalate it in the following period of the shallow recovery.

Finally, surveys completed in the post-recession shallow recovery period revealed that categories sustaining further growth included sport & leisure, charity shops, telephones & accessories and clothing. Although the growth rates of telephones & accessories and clothing have slowed down substantially there were new categories

such as DIY, carpets, electrical and furniture stores that after initial decline between the pre-crisis and within-crisis period have shown clear signs of a subsequent recovery. The categories that remained weak were gift, card & toys and florists. Additionally, antique sellers and jewellers experienced small decreases in their numbers after recording strong growth in the preceding period.

6.4.3 Convenience retail

Although Bristol's convenience retail observed an overall increase of +1% between the pre-crisis and within-crisis, measured as relative change, this was predominantly driven by the expansion of convenience stores and off licences. All remaining categories have declined with butchers and health food stores having been most adversely affected (Figure 6.11).

Figure 6.11: Relative change (M1) in convenience retail by category



Remarkably, while convenience stores as a whole observed large increases in both periods one of its subcategories - the symbol group had initially declined before accelerating fast in the post-recession shallow recovery period. Bakers and CTNs were relatively stable each losing only one store across the entire city. As far as the changes in convenience retail numbers were concerned, it appears that in the shallow recovery period, the positive trend was reversed in the case of off licences and CTNs. However, the entire decline in Bristol's off licences resulted from First Quench (owner of

Threshers and Wine Racks) reducing its presence on UK high streets, and it should be highlighted that the independent off licences continued to maintain their previous growth. Decline in CTN numbers could be partially explained by alteration in Goad's classification, since the very same six units recorded in the within-crisis survey as CTNs appeared as convenience stores in the shallow recovery survey. Further, Figure 6.11 shows some additional sub categories within convenience retail that experienced growth. In particular, butchers, grocers (including ethnic food stores) and health foods all recorded gains, possibly confirming the relative strength of the convenience sector being able to reorganise itself and bounce back quickly to new configurations, presumably as consumer confidence began to increase, although temporarily, during the shallow recovery period.

6.4.4 Financial and business services

Financial and business services is the category that in Bristol was affected most severely by the economic crisis, perhaps not surprisingly as Bristol is the third biggest financial hub in the UK. These findings have to a degree contrasted with the southern region and the entire four-region sample where the strongest adverse impacts were felt by comparison retail. However, the changes within this broad category were not uniform as two sub categories enjoyed a small growth between the pre-crisis and within-crisis surveys, namely building supplies & services and property services. The biggest impact was felt by the legal, employment and financial services. An even more interesting picture can be observed in the post-recession period where virtually all categories declined sharply except for one: the retail banks and building societies, presumably stimulated by the quantitative easing programme managed to increase by + 11.1% adding up 10 additional units across Bristol high streets/town centres.

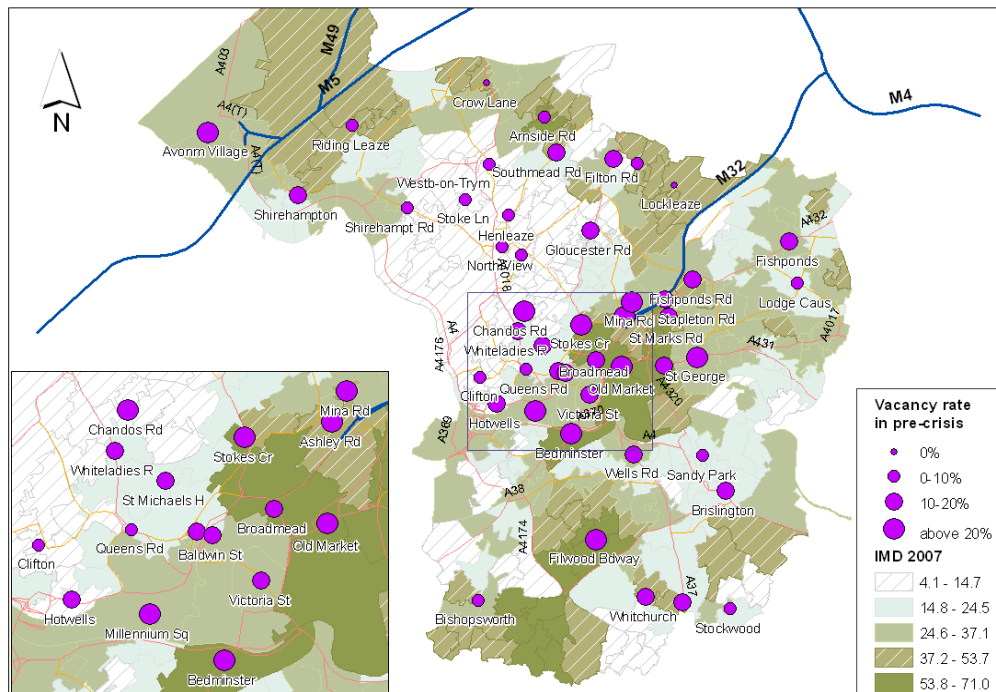
6.5 Vacancy rates

6.5.1 Vacancy rates in the pre-crisis period

The overall vacancy rate across Bristol retail centres stood at 14% in the pre-crisis period and was higher than the corresponding for the southern part of our sample average (8.6%) and slightly above the northern part (12.1%). However, as shown in

Figure 6.12, the pre-crisis vacancy rate varied greatly across Bristol retail centres, ranging from the highest in our four-region sample to virtually nil vacancy rate.

Figure 6.12: Magnitude of vacancy rates across Bristol centres in the pre-crisis period



For instance, vacant outlets in a relatively derelict high street of Old Market, situated in close proximity to Broadmead, accounted for 34.3% of the total retail/service unit numbers. Other locations with exceptionally high vacancy rates included Avonmouth Village (33.3%), Stokes Croft (31.3%), Filwood Broadway (28.6%), and St George (25.9%). Conversely, two of Bristol's remarkably small centres, namely Crow Lane and Lockleaze, both located on the northern fringe of the city, did not record any vacant retail outlets in the pre-crisis surveys. Remarkably, although both centres had maintained their nil vacancy rates during the onset of economic crisis, they were listed amongst those that were most adversely affected during the post-recession shallow recovery period, recording very high increases in vacancy rates.

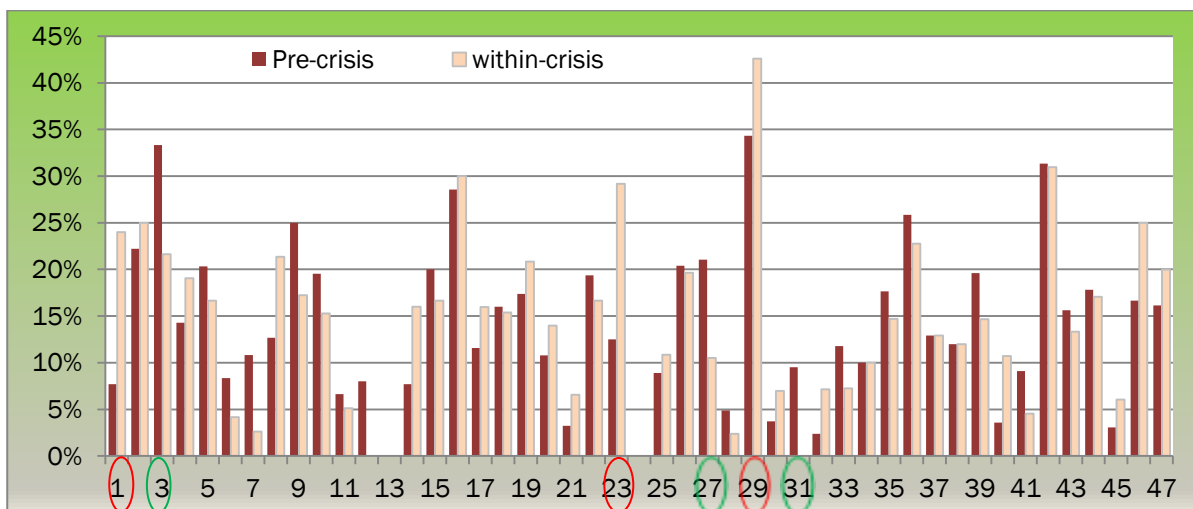
Moreover, from Figure 6.12 can be detected that magnitude of the pre-crisis vacancy rates appears to be somewhat positively correlated with the IMD 2007 scores, which effectively is a measure of multiple deprivation at small area level (Department for Communities and Local Government, 2007). Retail centres located in areas with

lower deprivation scores, which effectively indicate catchments that are somewhat more affluent, seem to have lower vacancy rates than those situated in the highly deprived areas.

6.5.2 Vacancy Rate Changes between the pre-crisis and within-crisis surveys

Figure 6.13 portrays the actual levels of vacancy rates recorded in every Bristol high street and town centre for both the pre-crisis and within-crisis periods. It implies that 19 high streets/town centres, when applying fixed boundaries, recorded declines in vacancy rates, 18 centres experienced rises and 10 high streets observed no changes (see Appendix 2 for retail centre names). The strongest performing centres such as Avonmouth Village, Mina Rd and Riding Leaze (circled in green) observed large declines in vacancy rate ranging from -8pp to -12pp.

Figure 6.13: Pre-crisis and within-crisis vacancy rates across Bristol centres (fixed boundaries)



In other words, centres that recorded declines in vacancy rates appear to have been associated with enhanced resilience to the shock of economic crisis as their dynamics allowed them to not only maintain but also improve their economic performance.

In contrast, the most fragile centres, those associated with record high increases in vacancy rates (circled in red) included Lawrence Hill (+16.7pp), Arnside Road (+16.3pp) and Old Market (+12.1pp). Some retail centres among those with the highest pre-crisis

vacancy rates such as Old Market continued to perform poorly increasing further its vacancy rate to a record high level (42.6%). However, other weakly performing centres in the pre-crisis period (e.g. Avonmouth Village or Mina Rd) recorded substantial declines in vacancy rates during the within-crisis period. In fact, the latter trend was prevailing, with some 15 of the 20 weakest performing high streets in the pre-crisis period, although to a smaller degree, having experienced decreases in their vacancy rates during the within-crisis survey.

A slightly different way of exploring the vacancy rate changes was calculating their average values for each respective period across the analysed sample. The implementation of that method indicates that the mean pre-crisis vacancy rate across the 47 Bristol centres, using merely retail and service units as a base, was 13.9%, but the within-crisis surveys figure stood at 14.1%. This is to say that the increase in vacancy rate change at +0.2pp between these two periods was small, contrasting sharply with the averages for the South (+1.2pp) and across the four-region sample (+1.9pp). However, it needs to be emphasized that the pre-crisis base used to calculate vacancy rate changes in Bristol was significantly higher than any regional equivalent. Using the fixed boundaries, which excluded all vacant units associated with expansion/contraction of centre boundaries, has generated slightly higher Vacancy Rate Changes (VRCs) which in Bristol was +0.4pp, comparing to +1.4pp in southern part and +2.2pp in the entire sample (Table 6.10). Nevertheless, the discrepancies between overall aggregated vacancy rates and Bristol mean vacancy rates, already discussed in the descriptive analysis section, were substantial.

Table 6.10: Comparison of VRC's in Bristol and analysed regions

Mean VRC (between pre and within-crisis)		
Study area	Variable boundaries	Fixed boundaries
Bristol	0.2	0.4
South	1.2	1.4
Entire sample	1.9	2.2

The change in overall vacant retail units between the pre-crisis and within-crisis periods, aggregated for the entire city, was +1.4pp, however the corresponding change

in average vacancy rates was only +0.2pp. A thorough analysis of vacant outlets' increases/decreases reveals some extreme values in our sample which partly can be held responsible for this discrepancy. For instance, Broadmead as a result of opening Cabot Circus shopping centre in late 2008 had experienced an enormous increase in vacant unit numbers from 44 recorded in the pre-crisis to 105 in the within-crisis survey. This particular retail centre was responsible for almost 50% of the overall increase in Bristol vacant unit numbers between the pre and within-crisis periods. In addition, three further large Bristol centres (Gloucester Rd, Baldwin Street and Queens Rd) observed substantial increases of at least 10 vacant outlets each, whilst a large number of predominantly small centres have seen declines in vacant unit outlets.

One way of dealing with this issue was to implement medians rather than the means to measure Bristol's average vacancy rate. Medians, unlike means, use the middle value, which is affected by the extreme values within the sample, the so-called outliers, to a much lesser degree. The implementation of medians shows that the pre-crisis average vacancy rate stood at 12.6%, which was 1.5pp lower than the 13.9% determined by the mean. In turn, during the within-crisis period, the median vacancy rate at 14.7% was 0.6pp higher than the corresponding mean value of 14.1%. In consequence, the values of average vacancy rate depicted for each method had the capacity to create some inconsistency and possibly even a conflict. It could be argued, that the very low mean vacancy rate change (+0.2pp) between the pre-crisis and within-crisis periods was purely a result of the peculiarity of Bristol sample. However, had the medians been used to assess the differential performance of the 47 high streets within the same period, the vacancy rate change would have been set at +2.1pp, which is closely comparable with the cross-regional average.

6.5.3 Vacancy Rate Changes between within-crisis and shallow recovery periods

The overall aggregated vacancy rate for Bristol centres in the shallow recovery period was 15.5%. Although this represented only a +0.1pp absolute increase on the within-crisis period, the differential performance of many analysed high streets has at least in spatial terms, widely deteriorated. Indeed, between the within-crisis and shallow recovery periods 29 retail centres experienced increases in vacancy rates, as

opposed to 15 centres declining their vacancy rates. However, some centres mainly located in the inner city such as Broadmead or Baldwin Street, observed considerable improvement in their differential performance, recording declines in vacant outlets between the within-crisis and shallow recovery periods. Thus, the overall picture was somewhat complex as several larger centres observed a reduction in previously elevated vacancy rates, but the majority of predominantly small centres recorded minor increases in vacant unit numbers. Given the small bases used to calculate vacancy rates of those exceptionally small retail centres, they often produced high values even in the absolute vacancy rate changes. Some centres comprising no more than 25 retail/service units such as Crow Lane, Coldharbour Rd, Lockleaze and Riding Leaze, despite experiencing closures of no more than three units have recorded relatively large vacancy rate changes ranging from +10pp to +20pp. On the contrary, a number of small centres such as Filwood Broadway, Victoria Street or Lawrence Hill having filled one or two vacant units observed substantial declines in their vacancy rate ranging from -6pp to -8pp.

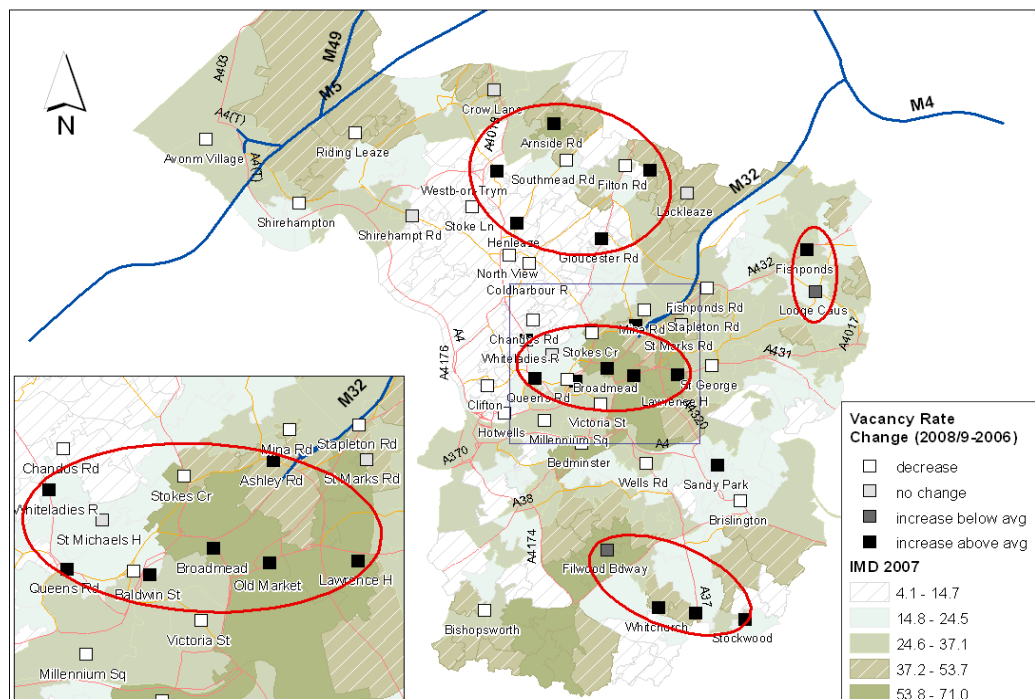
The mean vacancy rate in Bristol during the shallow recovery period stood at 15.6% representing an increase of +1.5pp in VRC between the 2008/9 and 2010 surveys. Regrettably, this could not be compared against the regional averages, due to the lack of systematic post-recession data. As noted above the high increase in VCR has somewhat conflicted with the findings of the descriptive analysis. Once more, the implementation of median rather than mean to measure the average within-crisis vacancy rate narrows the gap in the VRC during the emerging austerity to +0.9pp. Moreover, if the median vacancy rate in the shallow recovery period of 15.1% was used the change between the within-crisis and shallow recovery periods would have been +0.4pp rather than +1.5pp when means were applied. Such results are consistent with the overall aggregated increases in vacancy rate where increases in vacancy rate during the emerging austerity, have slowed down in comparison to the period of economic crisis.

6.5.4 Spatial trends of Bristol retail centres' performance

The majority of Bristol high streets appeared to have been resilient to the shock of the 2008-09 economic crisis as 62% experienced no increases in vacancy rates. Although it could be argued that overall Bristol centres performed stronger than other parts of our four-region sample, little was known about the geographically uneven performance at the intra-urban scale. Tobler's First Law of Geography (1970) stating that *"Everything is related to everything else, but near things are more related than distant things"* urged to investigate geographical patterns of the differential economic performance of Bristol retail centres. Interestingly, when the values of vacancy rate changes between the pre-crisis and within-crisis were mapped, they have revealed the presence of what could be viewed as special clusters of centres that performed below the average (Figure 6.14). The first cluster contained seven largest inner city retail centres that experienced substantial rises in vacancy rate change; however, in near proximity there were three small high streets, namely Christmas Steps, St Michaels Hill and Victoria Street, that performed well. The second cluster of four adversely affected centres was located on the southeast suburb of the city and the third comprising five centres, was situated to the north of Bristol city centre in close proximity of Cribbs Causeway regional shopping centre. Nearly all centres located outside those three clusters appeared to have been resilient to the onset of 2008-09 economic crisis.

The post-recession shallow recovery period has seen further deterioration of vacancy rates relative to the within-crisis surveys. In terms of spatial patterns of vacancy rate changes during that period, Figure 6.15 shows that the weakly performing centres have been distributed throughout the city, with no obvious trends present. The examination of areas affected particularly adversely, indicates that the proximity of a large regional shopping centre such as Cribbs Causeway and to an extent Broadmead/Cabot Circus could have a detrimental impact. The northern part of the city has underperformed considerably, presumably due to the low attractiveness of the shopping parades or poor demand from local catchments which as in the case of Riding Leaze, Crow Lane or Southmead Rd are characterised by high deprivation levels. However, some affluent neighbourhoods such as Coldharbour Rd experienced some rises in vacancy rates, but they were of a smaller magnitude.

Figure 6.14: Spatial distribution of VRC 2006 - 2008/9 (variable boundaries)

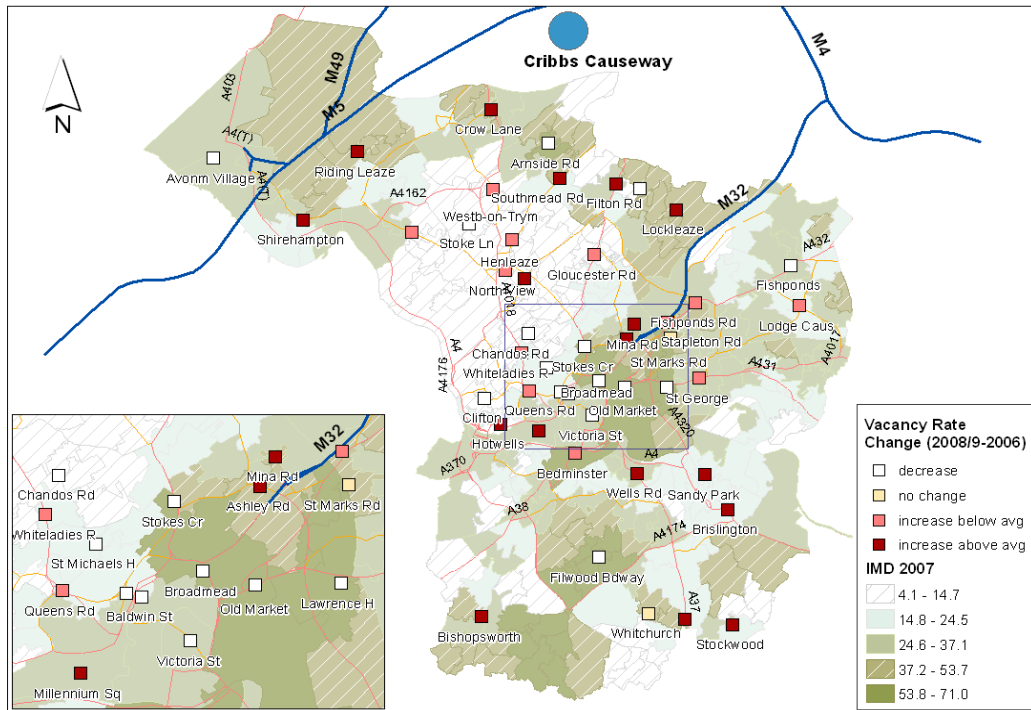


Increases in vacancy rates were recorded by nearly all smaller centres located around the city centre, in particular, in the area to the South of the inner city extending from Hotwells to Brislington and to the North East spreading from St George to Mina Rd. Conversely, a number of retail centres saw their vacancy rates having bounced back to some extent in the shallow recovery period. Interestingly, of the 18 streets/town centres that have not recorded any rises in vacancy rates during the shallow recovery period six were located in what previously had been identified as poorly performing clusters. They appeared to have exhibited some geographically correlated trends, specifically the inner city retail centres such as Broadmead, Baldwin Street, Lawrence Hill and Old Market all reducing their vacancy rates in the range between -2 and -6 pp.

Further, the examination of vacancy rate changes between 2006 and 2010, shown on Figure 6.16, implies that the three clusters of poorly performing centres existing in the within-crisis survey were still indeed present in the post-recession recovery period; however, some alterations have occurred to both southern and northern clusters. The central cluster remained unchanged and despite several high streets having bounced

back during the shallow recovery period, their vacancy rate levels remained above those recorded in 2006.

Figure 6.15: Spatial distribution of 2008/9 - 2010 VRC for variable boundaries



The northern cluster, on the other hand, has notably expanded in size comprising in the shallow recovery period as many as 9-10 retail centres. As in the central cluster, none of its centres have experienced full recovery with vacancy levels still above those seen in the 2006 survey. Nevertheless, four of five centres constituting the northern cluster have seen some kind of improvement or remained stable during the shallow recovery period. In particular, Arnside Rd and Filton Ave observed a significant boost in their performance recording substantial declines in vacancy rates. Moreover, although Westbury-on-Trym, and Henleaze experienced no additional outlet closures, their vacancy rate had gone marginally up due to the slight decrease in the total outlet numbers. On the other hand, several centres such as Crow Lane Lockleaze, Riding Leaze, saw substantial increases of their vacancy rates during the post-recession shallow recovery period. Given that these centres are located in one of the most deprived areas of Bristol it is perhaps not surprising that a running a profitable public house, off licence, coffee shop or a CTN could not be sustained in these catchments.

Parade and Whitchurch has offered a good potential as their differential performance was most uniform. Undertaking a detailed analysis investigating changes recorded to those retail centres' structures has provided valuable insights into their complex adjustment to both the shock of economic crisis and the period of shallow recovery. Simultaneously, it has facilitated the assessment of evolutionary trajectories of the most fragile retail centres.

Filwood Broadway was a part of this cluster only in the initial period, as the centre appeared to have recovered in the shallow recovery period, recording lower levels of vacancy than in the pre-crisis survey. Whilst the centre experienced only a small increase in vacancy during the onset of economic crisis (+1.4pp), it has re-organised its retail offer during the post-recession shallow recovery period by filling the vacant outlets with charity shop, household discounter and employment agency. Essentially, Filwood Broadway has seen a fall in vacancy rate of -6.3pp between the 2006 and 2010 surveys, however the centre was still performing poorly with two major areas of concern; vacancy rate significantly higher (22%) than the national average (12.5%) and overall number of retail outlets continuously declining.

Stockwood for instance, although perceived as a relatively healthy centre with a reasonable shopping environment, was hit particularly badly over the wider period of 2006-10. The high street has lost a baker, butcher, bank and a florist whilst experiencing an opening of a café shop only. Taking into account its small size (28 units in 2006 and 24 in 2010) the net vacancy rate increased from 3.6% to 16.7% respectively, representing a +13pp rise in absolute change. In turn, Gilda Parade, perceived by local consumers as a rundown centre, suffered from a relatively high vacancy rate (17.4%) in the pre-crisis period. The closure of an off licence, florist and employment agency during the economic crisis and a gain of only a disabled goods shop have weakened the centre further. Although it was an addition of two net vacant units only, given the small centre size (24 units), this accounted for a large increase (+7.5pp) in vacancy rate change. Both centres despite being easily accessible and mainly serving local walk-in catchment areas, suffered from low spending, low frequency and short time of an average visit which in consequence has led to a significant leakage of local customers to more attractive located nearby centres with

large supermarkets such as Whitchurch, Wells Rd and Bedminster (GVA Grimley, 2010). Finally, Bristol Whitchurch, to some extent, has fared better, presumably due to the presence of a large supermarket, observing a rise of only one vacant unit in the within-crisis and no further increase in the shallow recovery period. Moreover, the centre has retained all its retailers as the change in vacancy rate merely resulted from the downsizing of Lloyds Pharmacy, which has moved to a smaller and newly created unit within the existing local health centre. Though the increase in vacancy rate change was high (+8.3pp), this was purely due to the very small number of outlets (12) in the centre. If the floorspace was used as a measure of centre size the increase in vacancy rate change would have been substantially smaller (+2.9pp). Furthermore, despite the presence of large food store, GVA Grimley (2010) reported that the centre experienced substantial spending leakage to nearby high streets due to a lack of wide range of facilities and has been suffering from long term/structural vacancy.

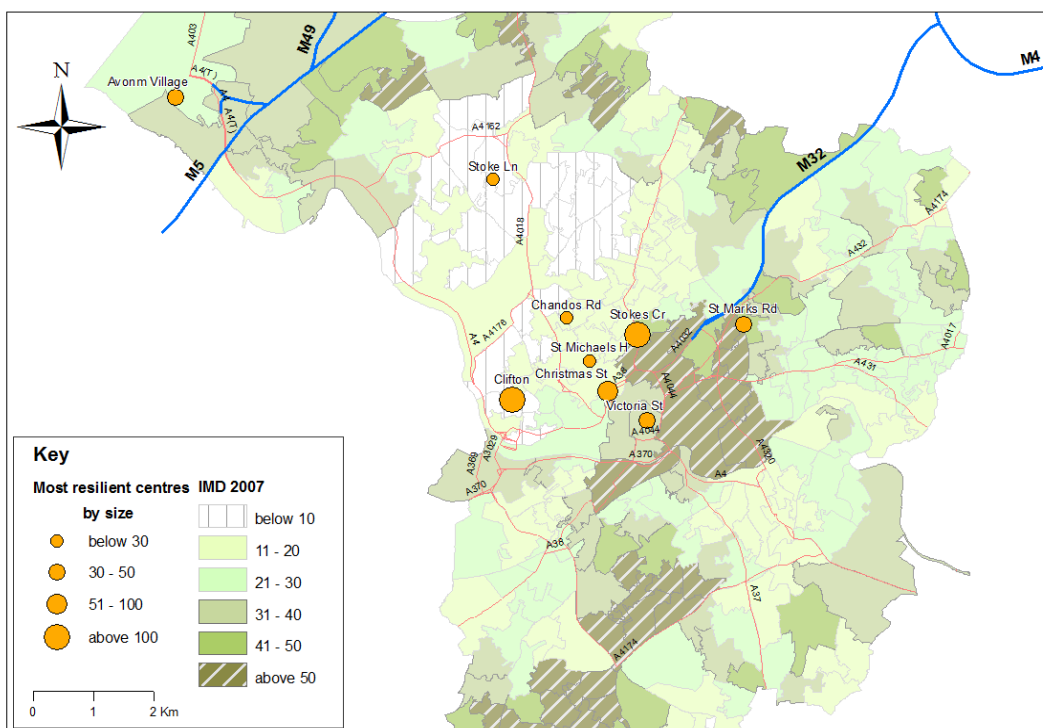
6.5.6 Most resilient centres

On the contrary, nine high streets, shown in Figure 6.17, have maintained or decreased their vacancy rates in both analysed periods. Although all those centres have displayed similar trends in terms of vacancy rate change between the pre-crisis and the shallow recovery period, the magnitude of these changes was far from uniform ranging from 0pp to -15.2pp. One reason for it was that the base (pre-crisis vacancy rate) in each centre has fluctuated substantially between 6.6% and 33.3%; however, this was not always the case. For instance, Avonmouth Village which had the highest pre-crisis vacancy rate had seen a reduction in it by almost half, from 33.3% to 18.2%, but in the case of Stokes Croft, a centre with the second highest pre-crisis vacancy rate, declined only by -2.8pp. The strongest performer in this category was undeniably Stoke Lane initially reducing its vacancy rate by half between the pre-crisis and within-crisis surveys, and then declining it further to nil vacancy rate in the shallow recovery period.

All centres from this category, with the exception of Avonmouth Village and Stoke Lane, were located in the inner city, which was in close proximity to the largest in-town shopping centre, the Broadmead, which in the within-crisis period included the newly

opened Cabot Circus. This may imply that the most resilient centres did not compete directly with the larger centres but rather filled the niche created by the multiple retailers, simultaneously benefiting from the high footfall created by the mechanism of linked trips. So what were the characteristics of these centres that despite the location and unfavourable economic conditions were continuously improving their performance, perhaps holding the key to the enhanced resilience of UK town centres to the economic crisis?

Figure 6.17: Spatial distribution and size of best performing Bristol high streets



Initially, we have considered the key determinants of enhanced resilience found by the 267 centre and their values, presented in Table 6.11, show a somewhat differential picture.

Firstly, the average ratio of services relative to retail outlets across these nine centres at 1.8 was only slightly higher than the Bristol average of 1.7. Secondly, the diversity, measured as a proportion of independent retailers relative to all retail units in the pre-crisis period was very high in these centres averaging 76%, which was 3pp higher than the Bristol average. In the case of five retail centres, independent retailers

occupied more than 85% of all retail outlets; but the exceptional case was Christmas Steps with no single multiple retail unit in both the pre-crisis and within-crisis periods.

Table 6.11: Characteristics of the nine most resilient centres

Retail centre	VRC 2006-2010 (pp)	Ratio of services vs. retail	Independent Retailers (pre-crisis)	No of foodstores (corporate)	Centre size (units no.)
Avonmouth Village	-15.2	3.0	86.0%	2(1)	42
Chandos Road	-10.7	3.2	60.0%	1	28
Christmas Steps	-4.8	1.0	100.0%	1	87
Clifton	-1.5	0.7	88.0%	3(2)	196
St Marks Road	0.0	0.8	93.0%	2	31
St Michaels Hill	-0.5	2.1	71.0%	1(1)	25
Stoke Lane	-9.1	0.8	45.0%	1(1)	22
Stokes Croft	-2.8	1.6	92.0%	5	134
Victoria Street	-9.2	2.9	71.0%	1	32

The first non-independent retailer entry experienced by the centre was in the shallow recovery period due to a conversion of previously independent convenience store to a symbol group. The third significant factor was the presence of a foodstore, and as Table 6.11 indicates, only four of the best performing retail centres had corporate supermarkets present however, the remaining centres had either a symbol group or independent foodstore present in the pre-crisis period. In total, there were 17 foodstores defined as in-town centre; nine of which were independent, five corporate and three symbol group retailers. Stokes Croft and Clifton had the highest number of foodstores with five c-stores and two c-stores plus one supermarket respectively. Furthermore, two new entries were recorded in the shallow recovery period including independent and symbol group retailers and an additional two independents joined the symbol group retailers.

The examination of other characteristics proved that the majority of the most resilient retail centres were small, comprising on average 66 retail/service units in the pre-crisis survey with only two centres, Clifton and Stokes Croft, classified as medium-sized. Additionally, most of the centres, with the exception of Stoke Croft and St Marks Rd, had relatively affluent hinterlands and have been enjoying relatively low levels of income deprivation. However, as in larger cities it is not uncommon for an affluent

area to be adjacent to a poor neighbourhood, both centres could draw shoppers from diverse catchments. Finally, following the observation made by Findly and Spark (2010), that some degree of retail vacancy is inevitable and indeed desirable as it enhances healthy retail churn, which in turn facilitates the desirable reconfiguration of a town centre. The average levels of retail churn were in line with those seen across other Bristol high streets; however, these were extraordinary in the case of Clifton where 12 of its total 13 vacant outlets were sublet in between the pre and within-crisis surveys and 6 of 10 between the within-crisis and shallow recovery.

In summary, the nine most resilient centres had somewhat different dynamics adding to the complexity of high street evolution trajectory and proving that there is no uniform formula for success. However the three most universal characteristics shared by the majority of those centres were the high diversity, foodstore presence and a smaller than average centre size. Remarkably, non-corporate foodstores, in particular the symbol group convenience stores appear to have played vital role in protecting the vitality of small centres, increasing their attractiveness and generating the essential footfall.

6.5.7 Retail hierarchy, deprivation levels and vacancy rate changes

Taking into consideration the retail hierarchy it appears that small local centres performed best between the pre-crisis and within-crisis surveys as of the 21 local centres only 4 experienced increases in vacancy rate during that period. On the other hand, the city and district centres were affected particularly adversely by the shock of economic crisis and there was no explicit trend amongst the major district (town) centres. However, between the within-crisis and shallow recovery periods different patterns could be detected. As 62% of local centres had experienced increases in vacancy rates, it could be argued that small centres started to feel the pinch of the economic crisis and emerging austerity. Second type of centres that experienced major deterioration to their economic health was the district centres with 82% having experienced increases in vacancy rates. Further, the inner city high streets such as Broadmead, Baldwin Street and Victoria Street performed well having recorded

declines in the number of vacant outlets and finally, there was no conclusive trend amongst district centres.

In terms of the deprivation levels, it has been found that overall there was a positive correlation between increases in vacancy rate changes and the score of multiple deprivation, suggesting that retail centres located in more deprived areas were less resistant to the economic crisis, however in the emerging era of austerity the trend was unclear. Furthermore, there were some exceptions too; centres such as Gloucester Rd, Coldharbour Rd and Southmead Rd enjoy one of the lowest deprivation levels in the city, however their differential performance between the 2006 and 2010 surveys was below the average. According to Goad surveys, Gloucester Rd noticed higher than average increase in vacancy rate between the pre-crisis and within-crisis periods but the other two centres following the strong resistance to the onset of economic crisis, recorded sharp increases in vacancy rate changes during the shallow recovery period.

6.6 Modelling vacancy rate changes

Having completed the descriptive analysis of the intra-urban variation in retail/service categories performance, it was important to depict the statistically significant indicators responsible for the increases in vacancy rates during the onset of economic crisis and the subsequent period of the shallow recovery. The intra-urban modelling of vacancy rate changes had two implications as far as the complex adjustment of UK high streets to the economic crisis was concerned. First, there was a potential to establish whether the determinants of enhanced resilience significant at cross-regional scale, would hold at intra-urban level. Second, whether those determinants will be statistically significant when taking into consideration the post-recession shallow recovery period.

The latter has been established in two stages: a) the investigation of the dynamics associated with vacancy rate changes between the within-crisis and shallow recovery periods, and b) the examination of the factors that were statistically significant in the entire period between the 2006 and 2010 surveys. This task was particularly important, as it had the potential to provide empirical evidence on the differential

performance of traditional UK high streets in the post-recession period and to establish their future trajectories. Understanding the indicators associated with the enhanced resilience of British high streets over the longer-term could be a key feature necessary to utilise by policy makers and town centre managers to turn things round after the shock of global economic crisis.

6.6.1 Vacancy rate change between pre-crisis and within-crisis surveys

Vacancy rate change is a leading indicator of economic performance of UK high streets and therefore has been selected as a response variable for the regression modelling. As in the cross-regional sample, the response variable was obtained for both variable and fixed boundaries and only retail and service units rather than all outlets (including non-retail) were used as a base to calculate vacancy rates. The Bristol model has initially employed a comparable set of variables to the cross-regional model, with the obvious exception of North-South divide, as all Bristol retail centres were located in the southern part of our sample. Also the 'corporate foodstore entry' variable employed by the cross-regional model had to be slightly modified to a 'corporate foodstore presence' as only five Bristol high streets experienced net corporate foodstore entry between the pre-crisis and within-crisis surveys. To be precise, corporate foodstores included all retailers that the Competition Commission (2008) referred to as large grocery retailers. This is to say that the modified dummy variable has accounted for all high streets that in the pre-crisis period had at least one policy-compliant medium or large corporate foodstore (above 3500 Sq Ft) located in/edge-of-town centre.

Further, in the modelling stage we have accounted for many possible sets of explanatory variables, including those which in the cross-regional model had their significance below the conventional levels. In particular, the variables defining the affluence of immediate catchment areas based on the IMD 2007 scores, ease of parking and other supportive schemes implemented by local authorities or various traders' associations such as BID's or presence of town centre manager.

The exploration of the theoretically grounded explanatory variables has resulted in obtaining a six best-supported variable model, shown in Table 6.12. As in the cross-

regional model the *negative* parameter estimates indicate factors which, holding all other things constant, are associated with reductions in the increase of vacancy rate change between the pre-crisis and within-crisis surveys; *positive* parameter estimates indicate the opposite - factors associated with relative worsening of town centre performance during the economic crisis.

Table 6.12: Model of vacancy rate change between pre-crisis and within-crisis in Bristol

Variable	Parameter estimate	Std. Error	T-value	Sig.
(Constant)	-.099	.047	-2.124	.040
Retail vs. services %	.168	.069	2.428	.020
Centre Size (ln)	.020	.008	2.415	.020
Retail diversity pre-crisis	-.110	.033	-3.321	.002
Structural Vacancy pre-crisis	.098	.028	3.506	.001
Corporate foodstore presence pre-crisis	-.039	.017	-2.258	.029
Income deprivation	.101	.057	1.755	.087

$R^2=48.4\%$,

N=47

Durbin-Watson d value = 2.482

Condition index value = 18.6

The model explains almost 50% of the total variance in vacancy rate changes and the OLS assumption tests are summarised below the table. Taken together with standardised residual and predicted value plots, the tests suggest normally distributed residuals, no evidence of significant heteroscedasticity, and multicollinearity below critical thresholds. Also outlier and leverage plots were used to check the robustness of the parameter estimates but they have not indicated any abnormalities, so all 47 high streets have been retained in the model.

When comparing the model from Table 6.12 to the cross-regional one, shown in Table 4.4 two things should be noted. First, the multiplicative variable, combining the average store size and floorspace occupied by the twenty UK's key/'magnet' retailers has not been significant in the Bristol model, presumably as a result of the most attractive stores having been only present in a few largest Bristol retail centres during the pre-crisis period. Second, as opposed to the cross-regional model the 'income deprivation' variable, which reflects the affluence of the immediate catchment areas,

has been significant at the intra-urban level. In the cross-region model affluence had the expected sign but its significance was slightly below the conventional levels.

Crucially, the main findings of Bristol modelling confirm that the determinants of enhanced resilience significant at cross-regional scale hold well at the local intra-urban level and can be summarised as follows. Bristol retail centres have been found to perform more robustly and to be more resilient to the shock of the economic crisis if they were, other things held constant, more likely to have been:

- smaller rather than larger;
- those whose business mixes in the pre-crisis period were characterised by higher proportions of service units relative to retail units;
- those whose retail unit compositions in the pre-crisis period were characterised by the diversity offered by higher proportions of small independent specialist stores;
- those which, in the pre-crisis period had a 'large grocery retailer' present in-centre or edge-of-centre which conformed with the town-centres-first approach;
- those with lower levels of structural vacancy in the pre-crisis period;
- those whose catchment areas were characterised by lower levels of income deprivation in the pre-crisis period.

6.6.2 Vacancy rate changes and the implementation of 'third wave data'

As reported by some commercial consultancies such as LDC the performance of UK high streets continued to weaken across the country during the shallow recovery period. This study provides compelling evidence that this was also the case across Bristol retail centres. Using a third-wave of data, two separate response variables have been constructed in order to model the vacancy rate changes in two different periods. First, between the within-crisis and shallow recovery periods investigating the performance of retail centres as they emerged from the shock of economic crisis and the second took into consideration the entire analysed period between the pre-crisis and shallow recovery.

The spatial analysis has shown that the economic performance of retail centres during the shallow recovery period has varied considerably. However, it was important to establish how much of that variance relative to both periods the pre-crisis and

within-crisis could be explained by statistical modelling. The first model, using an identical set of variables to the one in Table 6.12, but derived for the within-crisis base, has provided us with valuable insights into the differential performance of Bristol high streets between the within-crisis and the shallow recovery periods.

Table 6.13: Regression model for the vacancy rate change between within-crisis and shallow recovery periods

Variable	Parameter estimate	Std. Error	T-value	Sig.
(Constant)	.113	.045	2.538	.015
Retail vs. services %	.137	.066	2.065	.045
Centre size (ln)	-.016	.008	-2.086	.043
Independent retail within-crisis	-.058	.034	-1.736	.090
Corporate foodstore presence within-crisis	-.034	.017	-2.050	.047
Income deprivation	-.104	.055	-1.891	.066

The model shown in table 6.13 explains about 30% of the variance in our response variable. Although containing five variables, it was not very robust as only three variables had their significance above the conventional levels, with two of those having the expected sign. Both the higher ratio of services relative to retail units and the presence of a medium/large corporate foodstore within-crisis were found to have been protective of retail centre vitality during the shallow recovery period. The third significant variable, one with the reversed sign, implies that smaller centres, following the stronger resilience to the onset of economic crisis, started to be affected by the prolonged deteriorating economic conditions and the fears increased by the new reality of austerity.

The remaining two parameter estimates had their significance slightly below the conventional levels, however they have still provided some useful information. Importantly, the beneficial impacts of increased diversity have been confirmed as the increased proportion of independent retail during the within-crisis was still associated with a decrease in vacancy rate during the shallow recovery period. In contrast, the negative sign of income deprivation implies that also retail centres with more affluent catchments started to feel the pinch, presumably capturing the worsening position of the 'squeezed middle class'.

The second model has accounted for a wider period, depicting the vacancy rate change between the pre-crisis and shallow recovery surveys. The model has employed an identical set of explanatory variables to the initial Bristol model, shown in Table 6.12. To some extent, the design considering the wider period could be seen as an attempt to combine two previous models in order to depict the long-term indicators of resilience. Clearly, the model shown in Table 6.14, narrows down the range of statistically significant factors considerably. The simple model, explaining 27% of the variance in the response variable, has retained only three significant variables including retail mix, diversity and medium/large corporate foodstore presence in-town/edge-of-centre. The significance of centre size, income deprivation and structural vacancy has waned, however their parameter estimates retained the expected signs, thus still somewhat corroborating the previous findings. These findings imply that taking into account the entire period between the pre-crisis and shallow recovery, only three factors could be firmly attributed to the enhanced resilience of UK town centres and high streets. The higher proportion of service outlets relative to retail units has once more proved a vital determinant of a 'healthy' retail centre and perhaps underpinning the importance of services in future high streets configurations. Crucially, the diversity of a traditional UK high street, proxied by the proportion of independent retailers, and the presence of corporate foodstores have been proved significant by all statistical models reported by this study, thus corroborating firmly our findings that those two factors are vital to a successful retail centre. Although those two factors have often been portrayed as polar opposite in popular debate, the statistical modelling unceasingly supports their beneficial impacts on vacancy rate change.

Table 6.14: Model of vacancy rate change between pre-crisis and shallow recovery period

Variable	Parameter estimate	Std. Error	T-value	Sig.
(Constant)	0.056	0.043	1.300	0.200
Retail vs. Services %	0.176	0.077	2.272	0.028
Independent retail pre-crisis	-0.116	0.039	-2.974	0.005
Corporate foodstore presence in pre-crisis	-0.037	0.018	-2.002	0.052

This is a strong argument supporting their potential symbiotic relationship, where both type of retailers provide complementary offer rather than enhancing direct competition. It is widely recognised that local independent retailers provide economic benefit, environmental distinctiveness and the social glue that holds communities together (NEF 2006), however the corporate supermarkets are often the magnets that bring essential footfall to a centre by the mechanism of linked trips and prevent the 'leakage of expenditure' to a nearby centres (Wrigley et al., 2009b). Finally, the waned effect of structural vacancy on the vacancy rate change in the shallow recovery period could be partly explained by the fact that the long-term vacant outlets began to attract some interest of the supportive institutional structures, private associations developing various forms of increasing town centre attractiveness and a range of businesses searching for potentially cheaper rents. Similar explanation can be offered by the adaptive resilience theory which assumes that during the release and reconfiguration stage, induced by the shock of economic crisis, retail churn increases, simultaneously de-locking the previously locked-in configurations characterised in this case by high structural vacancy.

6.6.3 Implications of the statistical results

The multivariate modelling has two key implications related to performance of Bristol high streets during and since the economic crisis. Firstly, it has validated the findings of the cross-regional model at a local scale and secondly it has examined the robustness of the determinants of town centres' performance in the shallow recovery period. The multivariate analysis evaluating the economic performance of Bristol high streets as they adjusted to the onset of economic crisis has largely corroborated the previous findings from the four-region 267 centres sample (Wrigley and Dolega, 2011). In addition, it has provided some evidence that the affluence of catchment areas can be beneficial to surviving the impacts of the economic crisis when local scale is considered.

Although these findings are significant and of a considerable importance, it was the examination of a 'third wave' shallow recovery period data that added the greatest

value. First, it confirmed the significance of retail diversity, corporate foodstore presence and the increasing role of services in protecting the vitality of UK town centres. Despite the public debate viewing the presence of corporate foodstores as a direct cause of a rapid decline in the numbers of independent retailers the empirical evidence suggest that both those factors are important in protecting the vitality of UK town centres. In fact, most of the decline in the independent stores was caused by the competition from the online retailers. Thus, it could be argued that some kind of complementarity or even symbiotic relationship between the corporate foodstores and independent retailers could have emerged. Even more importantly, the growing and beneficial role of services can suggest that traditional UK high street is changing fast, and it is not only retail units that consumer want in their centre. Indeed, taking into consideration the shift in demand, lifestyle and consumer culture it is possible to re-imagine the future town centre as a place to enjoy and dwell, not only to shop

Second implication pertained to the fact that significance of some of the drivers of town centre viability waned during the post-recession shallow recovery period. The statistical modelling revealed that this was relevant in the instance of centre size, pre-recession structural vacancy and affluence. This implied that smaller centres started to feel the pinch, presumably due to the spatio-temporal lag effects. It could be argued that recession affected Bristol city workers before the effects of public expenditure cuts and public sector redundancies could be felt at local centres. In the shallow recovery period the so-called 'retail churn' which is an essential element of a centre's structure reorganisation has increased simultaneously lowering the significance of the pre-crisis structural vacancy rates. In turn, the waning significance of the affluence could be explained by the worsening situation of the 'middle class' (The Independent, 8 Nov 2012). As the reality of 'Austerity Britain' with high inflation and non-existing salary increases kicked in, the middle-income families begun to feel the squeeze. Finally, a number of variables related to the supportive/unsupportive actions of various local supportive structures were tested; however they did not generate conventional levels of significance. Nevertheless, each of the five retail centres that were a subject to some form of institutional help recorded a small decline in vacancy rates. We acknowledge that Bristol area might be representative of the southern part of our sample, but by no

means can portray the characteristics of other UK regions. Thus, it would be of an uppermost benefit to conduct further research which would examine a comparative urban area, preferably in the North, to facilitate the assessment of the differential performance of tow centres that take into account underlying geographical patterns (see Dorling, 2010). .

Chapter 7: Contextualising high streets evolutionary changes

7.1 Economic shocks and 'slow burns'

High streets have rarely evolved in smooth and incremental ways. These have constantly been reshaped by changing policy and periodic economic or competitive shocks. Overall, the evolutionary trajectories of economic systems are affected by two types of disturbances, a) *unexpected shocks* and b) more gradual processes of change often referred to as '*slow burns*' (Pendall et al., 2010). Although both types of disruption have the capacity to alter the configuration of retail centres, their nature and extent may vary. Thus, the interest has essentially focused on the capacity of UK high streets and town centres to recover from external shock - what Hassink (2010, p.45) describes as '*one of the most intriguing question in economic geography ... why some regional economies manage to renew themselves, whereas others remain locked in decline*'.

In this chapter I explore those issues, in particular the importance of various concepts of resilience in explaining the geographically uneven performance of retail centres. The notion of resilience, used for some time by engineers and ecologists, describes instances when some sort of disruption pushes a system from an established equilibrium (Martin, 2011; Cowell, 2012). In the case of engineering resilience a system 'bounces back' to its pre-shock equilibrium state or growth path but in the case of ecological resilience can be pushed to a new steady state. The multi-equilibrium concept introduced by ecological resilience offers some analytical leverage; in particular, the established determinants of UK high streets performance can be viewed as *tipping points* which can move town centres/high streets beyond their elasticity thresholds. However, as a result of the scale and length of the global economic crisis shock experienced by UK town centres and high streets, it is unlikely that merely bouncing back to previous or new steady configurations will occur. Rather, this chapter

considers the way these new configurations are linked to the notion of adaptability, defined '*as the dynamic capacity to effect and unfold multiple evolutionary trajectories*' (Pike et al., 2010 p. 62).

However, as already described in Chapters 1 and 2, the shock of economic crisis is not the only driver of change re-shaping UK high streets' configurations and their evolutionary trajectories. Pike et al., (2010, p. 63) claim that '*shocks (exogenous and/or endogenous) are often closely intertwined with the unfolding of broader, longer run and slow-burn processes of change*'. Those long-term processes have been referred to by Pendall et al., (2010) as 'drivers of change' which in the long term have the capacity to gradually transform economic systems. In the case of UK town centres and high streets, at least three forces could be associated with such transformation. First, the impacts of decade-long progressive increases in online retailing, which now exceed more than 10% of total sales, have induced the mechanisms of substitution, complementarity and modification, described in Chapter 3 (Weltevreden, 2007). In particular the former mechanism, directly impacting certain types of traditional retailers is strongly associated with the irreversible changes to town centres' configuration. Second, the long-term and cumulative impacts of competition from large out-of-town developments - a force which as a result of the tightening of retail regulation beginning in the mid-1990 and the consequent implementation of 'town centre first' policies (Wood et al., 2006; Guy, 2007; Wrigley, 2010a), has become increasingly complex and difficult to read. Third, the significant changes in consumer culture, which as consumers reassessed the time and cost associated with large 'one stop' shops, has led to a progressive rise of 'convenience culture' (Wrigley, 2009), forming new interdependencies within town centre structures. What is important to note at this stage is that all the above-mentioned drivers of change may be interlinked; however, the complex nature of their interaction is still relatively unknown.

7.2 Evolutionary approach to the resilience of UK high streets

Viewing UK high streets and town centres as dynamic economic systems undergoing constant evolutionary change, this chapter now attempts to capture the subtle nature of the observed adjustment of UK high streets to the mixture of

macroeconomic shock of global economic crisis and the ‘slow burns’ exposed by the severity of the shock, especially their *evolutionary aspect*.

Following Martin (2011) we argue that there are four interconnected dimensions which can help to unfold and understand the *adaptive resilience* of UK high streets and town centres to the shock of economic crisis and the other interlinked drivers of change. These are:

- a) *resistance* defined as the degree of fragility or vulnerability of high streets to economic shock,
- b) *recovery*, in particular its speed and extent but also the way it relates to the degree of resistance,
- c) *reorientation* which focuses on the nature of town centres’ reconfiguration and adaptation in response to macroeconomic shock,
- d) *renewal* viewed as the extent to which UK high streets resume their pre-shock growth path.

So far in this thesis, the examination of the first of those dimensions – resistance – involved establishing statistically significant factors that have been associated with either protecting UK town centres/high streets or increasing their fragility during the economic crisis. The assessment of the second – recovery – involved evaluation of the speed and extent of the recovery of the intra-urban retail centres from the shock of economic crisis using a ‘third wave’ data – the surveys carried out in the post-recession shallow recovery period. We now move to the latter two and tackle an issue that remains embryonic but is vital for policy development i.e. what is the extent and nature of reorientation and renewal which is likely to characterise UK town centres/high streets in the decade following the economic-crisis. We approach this issue through the lens of two notions often perceived ‘in tension with each other’: *adaptation* and *adaptability*.

In the context of an economic system’s response to a shock, *adaptation* is defined by Pike et al., (2010) as the capacity of a system to move back - at least in the short run- to the path that proved to have been successful in the past. Although, such interpretation may reflect the tendency of systems to improve their adaptation to a given niche, it could be perceived as leaning towards engineering or ecological

resilience, where systems react to a shock by taking a step back before returning to a growth path. In the context of high streets and whilst some of them have responded to the economic shock in a way which saw vacancy levels ‘bouncing back’ to a degree, alternative trajectories of growth, suggestive of resilience through adaptability need consideration. Pike et al., (2010) claim that adaptability emerges through a decision to leave the path that proved to have been successful in the past. Dawley et al., (2010) argue that this kind of response is beneficial in coping with unforeseen shocks, but it is also likely to encounter various challenges.

Viewing the long-run success of an economic system through the lens of *adaptability* emphasises the ability of various agents and institutional structures to adapt to the changing competitive, technological and market pressures (Simmie and Martin, 2011). Indeed, the adaptive capacity of a town centre depends on the actions of individual agents, who can learn and store knowledge, are innovative and adjust their behaviour to ever-changing consumer behaviour patterns and technological advancement. There has been compelling evidence that factors such as diversity, innovation and creativity can foster the process of growth and competitiveness of an economic system, thus those characteristics should be viewed as inherent elements of an adaptable system. Diversity on the one hand, can work as a ‘shock absorber’ preventing the system as a whole from severe destruction disturbance can cause (Dawley et al., 2010), and on the other hand, innovation and novelty of local entrepreneurs are essential to create and maintain more sustainable growth. Importantly, what becomes increasingly clear from this research is that unexpected shocks such as the economic crisis, partially by exposing the other forces of concern, are likely to increase the responsiveness of various actors. There is an argument that for the economic systems to be resilient to major shocks, a long-term and cumulative process of adaptive capacity building may be essential. However, adaptive capacity or even transforming the system at a local scale can be protective only to a certain degree as there are other forces beyond the control of local actors.

7.2.1 Adaptive cycles

Complex systems are characterised by self-organising behaviour (Levin, 1998) and an adaptive capacity Martin (2011) which enables them to reconfigure their internal structures spontaneously in a response to an unexpected shock. Town centres, however, are exposed to a number of other more gradual forces of change which drive their evolutionary reconfiguration. In that evolutionary and adaptive context, the resilience of self-organised complex systems is often explained by the *adaptive cycle* (Holling et al., 2002; Pendall et al., 2010).

The simplified version of an adaptive cycle of complex economic systems contains four phases: a) growth, characterised by innovation, volatility and high demand for products and services, b) consolidation, when the role of growth and innovation slows down and resources become more fixed, c) release when some sort of disruption creates the need for change and d) reorientation when a system reorganises itself and new trajectories of growth emerge.

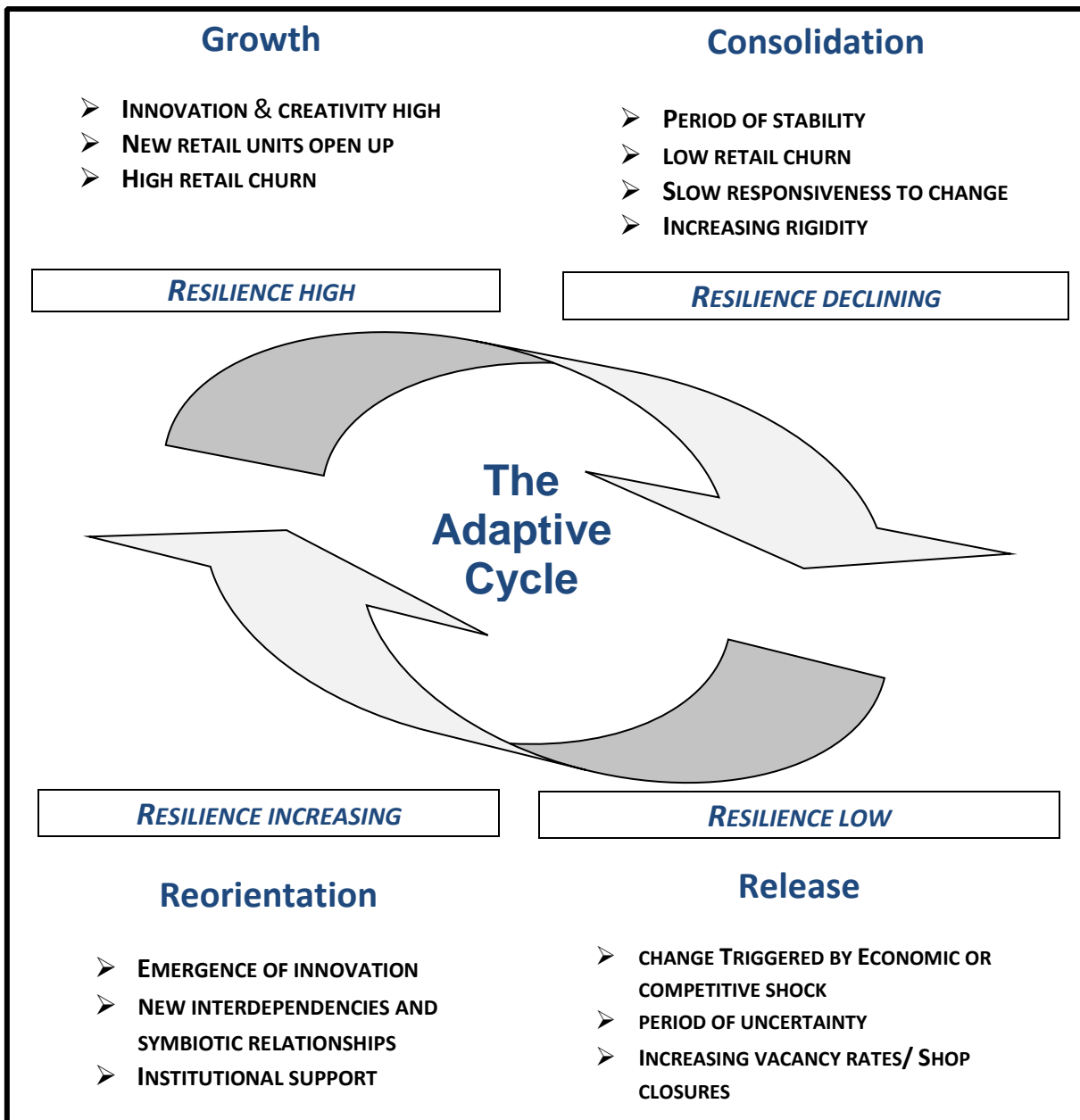
Viewing UK town centres and high streets as dynamic and complex economic systems which constantly evolve and have the capacity to be self-organised, and by employing a concept well-established in ecological sciences, this research suggests an analytical framework to approach the adaptive cycle of UK high streets and town centres.

Following the four above mentioned phases of the adaptive cycle, the analytical framework suggested here in the context of high streets, is illustrated in Figure 7.1 below.

The main characteristics of each of the four phases are:

1) Growth: This phase happens rapidly and is often characterised by a high rate of opening up of new stores which may lead to duplication of businesses, and generates increased competition. Retail centres, during this stage are likely to attract new investments and increase available floorspace to meet increasing demand. The newly completed retail space coupled with high retail churn and newly completed retail space facilitate the changing demand of both existing retailers and new entrants in a particular centre. Resilience in that phase, fostered by innovation and creativity is typically high, but as the phase matures, it slowly decreases.

Figure 7.1: The adaptive cycle of UK high streets and town centres



2) *Consolidation*: Over time, as the development path becomes more fixed and the connectedness amongst various agents is high, the system's rigidity increases. In this phase retail supply in terms of demand for physical outlets becomes more predictable and established. Most commonly it is a period when town centres reach highest capacity and experience a period of relative stability. As retail churn decreases and efficiency increases retail centres may become 'locked-in' in a particular trajectory of development. Town centres, however, constantly evolve due to changing consumer

culture and arising competition, therefore failing to take appropriate actions or adapt to those changes may result in an increased vulnerability and low resilience, especially at the mature stage of this phase.

3) *Release*: This stage is usually triggered by some sort of unexpected shock. It is quite rapid and may feel like an emergency which is often marked by collapse and uncertainty. In terms of a town centre the need for change may be driven by internal factors such as new corporate superstore entry or by external factors, for instance the shock of economic crisis. As a result, the rate of shop closures goes up and shop openings down leading to a dramatic rise in the number of vacant units. but Such shock however, has the capacity to open up new possibilities and de-lock previously rigid and often declining configurations in the manner referred to by Shumpeter (1942) as 'creative destruction'.

4) *Reorientation*: In this stage innovation kicks in creating new potential for growth and new configurations are likely to emerge through some internal mechanisms which create new interdependencies. Although the mechanisms explaining the emergence of new configurations are little understood, however the reconfigured town centres are likely to increase their attractiveness and accessibility in order to increase the footfall, which is the lifeblood of every retail centre. Moreover, some research (e.g. Wrigley and Dolega, 2011) suggested that developing symbiotic relationships between corporate and independent retailers or increasing the presence of various services was equally important for the adaptively resilient town centres.

Domains and scales

The resilience of complex systems to economic and competitive shocks is linked to the adaptive cycle, however it is more complex than Figure 7.1 suggests. Importantly, an economic system is 'nested in' a hierarchy of different scales which interact with each other in a rather complex way. Usually, the interactions happen through two principal mechanisms where larger scales affect smaller ones and in turn the local systems act back on the regional and national ones. Walker and Salt (2012) implied that complex systems are composed of at least three interlinked domains: social, economic and physical which operate at different scales: local, regional and national.

Chapter 7

This study, by adopting this idea, derives the domains through which retail centre adaptive capacity is built, (Table 7.1) and positions them at the scales a town centre is 'nested'. Although the characteristics of each domain may be overlapping to a degree or be interlinked they could be summarised as follows:

a) The social domain typically includes various demographic indicators driving the demand side of retail (e.g. affluence of catchment areas, population increase, unemployment etc.). They have the ability to depict changes in consumer culture and fluctuating levels of market demand at different scales. For instance, the regional variations in affluence, employment etc. have the capacity to create different consumer confidence and levels of demand e.g. North-South divide.

b) The economic domain at the local level includes various elements impacting the 'economic health' of a town centre such as business rates, other lease terms especially the length or presence of various structures of institutional support. At the regional and national scale it incorporates underlying dynamics of growth, cyclical economic downturns and competition from large retail developments or technological advances such as online retailing,

Table 7.1: Town centres viewed as complex systems and their constituent domains and scales

Domain		Scale		
		<i>Local</i>	<i>Regional</i>	<i>National</i>
	<i>Social</i>	Catchment area demographics (e.g. affluence, population increase, unemployment levels)	Regional variation in levels of consumer confidence and demand	Changing consumer culture
	<i>Economic</i>	Business rates, institutional support, diversity	Underlying dynamics of growth, economic strength, regional employment base	Economic downturns, increase in online sales, change in planning policy
	<i>Physical</i>	Retail fabric, streetscape, parking ease, presence of magnet stores	Accessibility factors, physical geography, rural-urban living	

c) The physical domain comprises the condition of retail fabric or streetscape and other physical factors impacting footfall levels such as adequate and reasonably priced

parking or presence of most attractive 'magnet' stores. Additionally, other factors such as adequate size of a centre, presence of services such as banks, post office or perceived safety and cleanliness are crucial here. At the regional or national levels various accessibility factors or constraints by physical geography such as sea, river or lake may also be important.

The concept which links resilience of economic systems to the interlinked hierarchy of 'adaptive cycles' - referred to as the panarchy model – has already attracted increasing attention of several economic geographers (e.g. Simmie and Martin, 2010; Dawley et al., 2010; Walker and Salt, 2012). Translating it into retail, the panarchy model portrays the adaptive capacity of UK retail centres as a function of complex linkages between social, economic and physical domains which are 'nested in' different scales. Understanding the mechanisms responsible for interactions between various components of a town centre and the extent to which they are affected by different scales, is crucial to building adaptive capacity which in turn increases the resilience of a particular centre. Indeed, the mechanisms through which town centres develop a 'coping strategy' to both unexpected shocks and 'slow burns' is largely dependent on their long-term strategy and previous experiences such as entry of a major competitor'. This can be helpful in anticipating the internal unexpected shocks, however the limitations in terms of the external shocks can be far greater.

7.2.2 Targeted interventions

Walker and Salt (2012) have however questioned the extent to which self-organising behaviour can induce the anticipatory and/or reactive reorganisation in social or economic systems. Although, the evidence from the cross-regional analysis found only a limited evidence on the positive impacts of institutional support during the economic crisis, there is a growing body of evidence that targeted interventions might be important to the enhancement of a system's adaptive capacity (Simmie and Matrin, 2010, Dawley et al., 2010) In addition, it has been long argued that building adaptive capacity is a long process and requires multi-scale coordination. There are three key dimensions to the targeted interventions: (i) timing, (ii) role of actors and (iii) scales.

(i) Both timing and sequencing of interventions are important because they can have negative impact on a system if implemented before agreeing on safety measures or regulatory frameworks. In the context of an *adaptive cycle* there is a consensus view that a key time for developing action plans, aiming at increasing the adaptive capacity of a system, is the *conservation phase*. Otherwise, the increasing connectedness of elements in a very efficient system may break apart in an uncontrolled manner during an unexpected shock or disturbance. Walker and Salt (2012) claim that lack of action plans and visionary management may lead to a loss of opportunities and any consequent back-loop phase can be long, chaotic and expensive.

(ii) Equally important in building the adaptive capacity of a system is the role of various actors, whose good knowledge is helpful in identifying the structural problems of a system, in particular, the drivers of change and anticipating the response to that change. There is evidence that institutions which learn from previous challenges can adapt their behaviour more easily, even in the absence of major shocks or disturbances. Some of the most challenging interventions may involve a transformation of system, introduction of new components or downsizing. Nevertheless, initiating a successful transformation requires a good understanding of the way a system works, what change is required and what is the role of particular actors in that system. Usually, the options for transformation '*require encouraging and investing in novelty and experimentation as well as help to change, rather than subsidies that allow people to continue doing the same thing when it is no longer viable*' (Walker and Salt, 2012, p.126). In the case of UK high streets, anticipating the changes in demand and consumer culture, often exposed by periodic shocks, is crucial to the economic health of a town centre. Indeed, the presence of a town centre manager and participation in BID's or other revitalisation schemes can be beneficial, however, equally important may be attracting novel and innovative retailers whose investment enhances the vitality and protects the function of an existing centre.

(iii) In addition to the above dimensions, the scales at which targeted interventions take place are of central importance. Dawley et al., (2010, p.8) indicate that the *institutional co-ordination of multiple actors vertically across and horizontally between multiple spatial levels, from the supra-national to the local*' is vital to a successful

adaptation of economic systems to the drivers of change. The spatial scale may be also critical when deciding on the duration and intervals of targeted interventions (Walker and Salt, 2012; Pike *et al.*, 2010) because the timing required for an intervention may vary at each scale. They also suggest that since a transformation at a large scale is risky and potentially expensive, support for experimentation at a finer scale is needed and it should be undertaken in a bottom-up manner. Taking into consideration UK high streets, at the level of a town centre it is important to understand the causes of poorly performing retail/service types before drawing an action plan for the whole centre. Certainly, acknowledging the issue and commissioning a comprehensive study of town centre viability are important first steps to facilitate any successful intervention.

A good example of such targeted intervention which incorporates all three dimensions discussed above is the initiative led by Mary Portas, launched by the Department for Business, Innovation and Skills in 2011. The Review, which made 28 recommendations, has identified key tasks for policy makers, local authorities and local communities that have to be implemented in order to create prosperous and diverse high streets. The Government has accepted the recommendations and as a response has decided to “*run a number of Town Teams ‘Portas Pilots’ to test proof of concept*” (Department for Communities and Local Governments, 2012). Initially 12 town centres were selected in May 2012 for the programme and then a further 15 town centres so-called ‘second wave Portas Pilots’ were added in July 2012. This initiative has generated much interest amongst many struggling town centres in the UK and as a result, more than 400 towns have applied to be ‘Portas Pilots’. The Government has offered all those Town Teams that were not selected the opportunity to become a Town Team Partners. In effect, more than 300 Town Teams registered and they will have access to the network of advisers managed by the Association of Town Centre Management and will receive a share of a multi-million pound fund to take forward elements of their plans.

7.2.3 Assessing the adaptive cycle framework

Some aspects of the *adaptive cycle* concept may to a degree overlap with other notions found in economic geography such as system *lock-in*. It is a process found in

path dependence theory which shows that economic systems have the capacity to become 'locked into' a particular trajectory of economic development (see Martin and Sunley, 2006). One interpretation is that if a system was 'locked into' a successful development path it may be resistant to an external disturbance, thus viewed as resilient. The contrasting argument goes that as a system becomes efficient in the consolidation stage; the connectedness between its components becomes very strong, increasing the rigidity of the system, which in consequence reduces its resilience to the unexpected shocks. Simmie and Martin (2010) suggested that there is a 'trade-off' between connectedness and resilience and often an external shock is required to 'de-lock' the system from the rigid path. Such shock has the capacity to open up a new opportunity for a system, which can then reorganise its form and function through the process of either adaptation or adaptability – the notions discussed earlier in this chapter.

In that context, the important aspect provided by the 'adaptive cycle' framework shows that if an economic system responds to the external shock through *adaptation*, it is likely to omit part of the cycle. In fact, by adopting the previously successful path of growth it moves directly from an *early release stage* to the *established growth and consolidation phases*, reducing the length of a cycle considerably. This is to say, that such response can be viewed as closely related to the notions of *engineering* or *ecological resilience*, where systems respond by 'bouncing back' to previous configurations.

On the contrary, the response of a system to an external shock through *adaptability* utilises a whole adaptive cycle with the focus placed on the emergence of new interdependencies during the release and reorientation stages. Most likely, the emergence of a new path is stimulated by the pre-existing resources, knowledge and experiences (Simmie and Martin, 2010). Furthermore, the nature and extent of the renewal of a previous trajectory of development depends on the evolving dynamics of a system and severity of the disruption. In the context of UK high streets, the adaptive response to both unexpected external shocks and 'slow burns' is highly desirable, however it can be seriously constrained by a need of accumulating the required resources, both financial and intellectual, in a relatively short period of time.

The adaptive cycle framework has several advantages when considering UK high streets and town centres: a) it depicts their dynamic and evolving nature, b) links their potential resilience to the pre-shock position in the cycle and c) offers some explanation of the mechanisms responsible for creating the adaptive capacity.

As town centres are complex systems which constantly evolve, the dynamics of that change are depicted relatively well by the adaptive cycle. In particular, the panarchy model implies that the evolution of UK town centres is intertwined with the regional dynamics of growth and national retail planning policies. However, what is even clearer from the *adaptive cycle* framework, is the fact that the resilience of town centres is linked to the nature of their pre-shock state; in other words, the phase in the adaptive cycle in which a retail centre was in the pre-crisis period can determine its resilience. As Figure 7.1 shows, the response of high streets in consolidation and release phases is characterised by less resilience than those which are in either the growth or reorientation stages. The adaptive cycle also suggests that building adaptive capacity is a process that on the one hand draws from previous knowledge and experiences, but on the other hand, is fostered by novelty and innovation, which underpin the emergence of new growth trajectories.

Despite considerable analytical leverage in explaining the *adaptive resilience* of UK retail centres, the ‘adaptive cycle’ framework has some limitations (see Table 7.2).

Table 7.2: Strengths and weaknesses of an adaptive cycle framework

<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> ▪ Depicts dynamic nature of UK high streets and considers the evolutionary aspect ▪ Links the potential resilience of a retail centre to the pre-shock position in the cycle ▪ Explains to a degree mechanisms responsible for creating adaptive capacity ▪ Shows that the emergence of a successful path is linked to the accumulated knowledge and innovation 	<ul style="list-style-type: none"> ▪ Back loop (release and reorientation phases) little understood and developed ▪ Becomes very complex when multiple scales are accounted for ▪ Does not account for the power and conflict present in regional, local governance ▪ The extent of regional evolution and national retail planning policy following adaptive cycle unclear

(i) The '*back loop*' of an adaptive cycle – the release and reorientation phases – is undeveloped and little understood. Indeed, as there has been less research conducted on the '*back loop*', partly due to the fact that release and reorientation often happen very rapidly, so the mechanisms of that process require further consideration. In contrast, phases one and two, often referred to as the '*front or development loop*', are relatively predictable and well understood as they last much longer than the release and reorientation stages (Walker and Salt, 2012).

(ii) The adaptive resilience of UK high streets and town centres is more complex than Figure 7.1 indicates as there is a need to take into account: a) multiple scales the system is nested e.g. failure of regional or national retail chain affects local centre; b) and the power and conflict '*present in regional governance in ways they are not present in ecosystems*' (Swanstrom, 2008, p.3) e.g. a constant struggle between policy makers and developers.

(iii) The phases of the adaptive cycle as well as their length and speed are not always easily distinguishable. Moreover, as Robinson (2010) observed the movement between phases is sometimes not as linear as shown on Figure 7.1. In terms of UK town centres, this may not only question our ability to specify the stages of adaptive cycles at regional or national scales, but also query the extent to which adaptive cycles represent the evolution of regional dynamics or national retail planning policy.

7.3 Reconfigured high streets - emerging visions

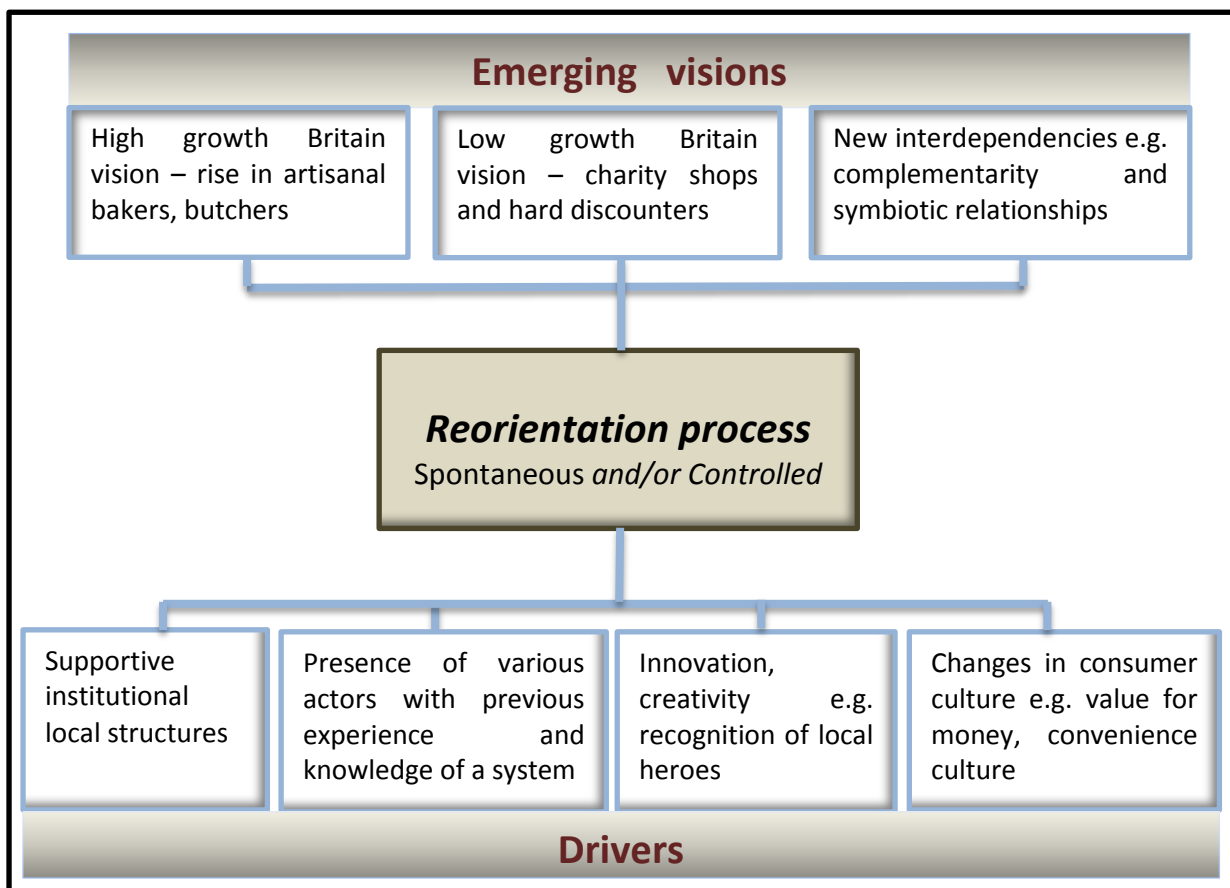
Although a substantial part of that task lies ahead, it is our view that some indicators of the potential evolutionary trajectories of 'adaptively resilient' high streets are available. In this context the analysis of entry and exit of small and specialist stores in over a thousand UK town centres and high streets during the early to mid-2000s conducted by the Competition Commission (2007), together with the parallel study carried out by the University of Southampton (Wrigley et al., 2009a), and aspects of our results on the differential performance of convenience retail at both cross-regional and intra-urban levels, are relevant. Some evidence of UK high streets' evolutionary trajectories was observed in the Competition Commission (2008) analysis which despite confirming a long-term decline in almost all convenience retail specialist

stores, demonstrated that over the past ten years specialist stores have experienced also a different trend. The entry of corporate supermarkets was often accompanied by positive or at least non-detrimental impacts on particular types of small stores: bakers, health food shops, independent convenience stores and delicatessens. Those controversial findings, not supporting the uniform decline amongst specialist stores, have been extended by the parallel Southampton study which identified some areas in the UK, particularly the high-growth part of 'London and prospering southern England', where additional types of convenience retail experienced growth. In that region, butchers, delicatessens, fishmongers and CTNs, joined the positively impacted small-store groups identified by the Commission, suggesting that the differential regional growth had some implications on the economic performance of evolving UK high streets. What these findings implied more widely, was that the small-specialist store sector was potentially able to adapt to a significant external competitive shock. Following the out-of town development era over the previous thirty years (Guy, 2007; Wrigley, 1998), the implementation of 'town centre first' policies has resulted in the return of leading corporate-food retailers to town centres/high streets, which was regarded by smaller independent retailers as a shock. Moreover, that shock was not merely a defensive and destructive force. It could be viewed as a foundation of an adaptability process within convenience retail which in an evolutionary context has transformed the structures of those centres/high streets that experienced corporate foodstore entry. The vital component of such configuration was the adaptation of small stores 'flexing' their offers and raising their levels of service to achieve complementarity to those provided by the corporate-foodstore entrants. Such specialist stores would then potentially be able to access, via the mechanism of 'linked trips' (Guy, 2007; Wrigley et al., 2010b), a share of the expenditure which previously would have leaked away from the town centres/high streets, but which would now be 'clawed back' by policy compliant corporate foodstore entry/presence. In this way it was possible to envisage an evolutionary trajectory of reconfigured town centres and high streets in which adaptability was centred on new mixes and offers of small and specialist store types, providing symbiotic relationships with the in-centre or edge-of-centre corporate foodstores.

Similarly, it can be suggested that small comparison retailers can compete successfully against large corporate stores and cheaper internet or ‘brick and click’ retailers either by delivering a complimentary offer or embracing the technology and adopting the multi-channel retailing strategies. The severe impact of the global economic crisis on the comparison retailers and the more vulnerable independent retailers in particular, has exposed the structural problems in the sector and compelled those retailers to seek new interdependencies and complementary relationships.

Overall, this research implies that UK high streets have the capacity to reconfigure in two distinctive but often interlinked ways: (i) spontaneous reorientation in a response to an unexpected shock, typical to the behaviour of a complex system (ii) controlled reorientation – induced by implementation of targeted interventions (see Figure 7.2).

Figure 7.2: The reorientation process of a retail centre – the inputs and outputs



(i) One emerging version involving the complementarity-based adaptability - what might be termed the high-growth-Britain vision - was characterised by rising numbers of artisanal bakers, butchers, and fishmongers, accompanied by town-centre farmers markets. In that version the small and specialist retailers 'raise their game' to complement and also to re-challenge the offer of in/edge-of-town corporate supermarkets as expressed by The Independent on Sunday *"New bakers and butchers are opening up all over the country, ending a decades-long decline. Retail experts believe the resurgence reflects a growing demand for high-quality produce, from artisanal loaves to dry-aged beef ... Traditional shops have improved their game retailers had to become as professional as the supermarkets. Butchers have realised they have a niche they can fill that supermarkets can't"* (23 January 2011, p.7). The second version could be termed the low-growth-Britain vision and was of course, somewhat more muted as it attracted less artisan produce and more of the tertiary brands and Asian-sourced non-food bargains. This was reflected in our empirical results by the rapid expansion of a limited-range hard discounters, pound and charity shops. However, in the more affluent prospering smaller towns of northern England, Scotland, South Wales, and Northern Ireland, the vision of a diverse 'ecology' of complementary and revitalised small stores re-emerged and could again be supported by the findings of the Southampton study of entry and exit (Wrigley et al., 2009a, page 2080).

(ii) Another vision of reconfigured UK high streets involved the implementation of various targeted interventions. One of the most important types of intervention, having the potential to change future configuration of the post-crisis UK high streets, was institutional support. Retail centres that can identify and remove barriers perceived as damaging to their performance can recover faster from the economic shock. Here, the key role is played by the presence of town centre managers with a long-term vision and participation in various high street revitalisation schemes such as BID's. Further, numerous local supportive initiatives such as improving town centre accessibility by providing adequate and reasonably priced parking facilities or investing in retail centre streetscapes can also help ameliorate underlying problems. On the contrary, retail centres which lacked the long-term vision or institutional support were

less likely to remove the barriers damaging their performance and see the emergence of coping strategies preventing them from retail blight.

Finally, taking into account the necessity to protect and enhance competition, the development of policy measures which promote innovation, creativity, and upgrading of quality standards may be vital to future high street trajectories. For example: drawing lessons from analysis of centres which have thrived in difficult times; investment in 'good-practice' guides; recognition of the local retail heroes whose skills can catalyse the upgrading of centres in which they operate etc., together with encouragement of planning regulation to focus more proactively on the sustainable economic health of centres whilst simultaneously maintaining and protecting the beneficial effects of the widely supported 'town-centres-first' approach.

7.3.1 Renewal of the pre-crisis evolutionary trajectories

In our view the shock of the economic crisis, fragile consumer confidence and the subsequent austerity has had two different implications on the evolutionary trajectories of UK town centres and high streets, observed in the first decade of the 2000s.

(i) The reorientation process, initialised by the regime in retail planning policy and changes in consumer culture has been muted, but it has not been eliminated entirely. As a result of corporate food retailers returning to those smaller town centres and high streets, we see evidence in our descriptive results which show, in both southern regions as a whole and particular urban areas, a continuation albeit at a lower level of similar trends to those observed in the early to mid-2000s. That is to say, in the southern parts of our sample and despite the problems of economic crisis, fragile consumer confidence and recessionary impacts on household incomes, a continued robustness of bakers, delicatessens and independent convenience stores can be observed. Furthermore, the intra-urban analysis has shown that during the shallow recovery period and despite the emerging austerity, butchers and health food shops joined that group. Additionally, the new evolutionary trajectory of reconfigured UK town centres/high streets is likely to be associated with a substantial number of leisure amenities offering experience-based activities e.g. cafés, restaurants or health and

beauty shops. On the one hand the presence of entertainment and leisure facilities is extremely important to a successful high street as consumers can enjoy the 'shopping experience', but on the other hand amenities that provide sensory stimulation and hands-on experience cannot be fully substituted by the internet (BCSC, 2010).

(ii) The reorientation process induced by the technological advancements, in particular the increase in online sales, has been somewhat enhanced. The prolonged economic crisis and the emerging reality of austerity both had negative impact on customer disposable income and as a result have boosted the pursuit of 'good value' amongst UK consumers. Online shopping offers great opportunity in that respect, and as a result of the economic crisis the share of internet sales has been recorded even more robust growth and is predicted to reach at least 30% by the 2020. The UK has the highest share of internet sales in Europe and Internet shopping can now be conducted almost anywhere, offering consumers not only lower price but also other benefits such as choice and convenience (Experian, 2012). This trend has also been recently boosted by the emergence of m-commerce (sales over mobile devices such as mobile phones and tablets). One consequence of such rapid growth of online sales coupled with large increases in the volume of physical retail space, recorded in second half of the 2000's, is that vacancy rates in 2011/12 across the UK have been at their highest levels.

Chapter 8: Discussion and conclusions

This chapter discusses the implications of the research for the study of the performance of UK high streets during economic crisis. It begins by assessing how the findings of this study differ from and complement previous comparable research - conducted mainly by commercial consultancies and property firms. It then proceeds to evaluate the contributions of the research to: a) systematic evidence on cross-regional and intra-urban high street performance during the economic crisis and austerity, b) identification of the key drivers of the performance of UK high streets and town centres derived by one of the first attempts of multivariate analysis of this issue and c) conceptualisation of the likely reconfiguration of UK retail centres, in particular linking that to the concept of resilience.

Additionally, this chapter highlights a novel contribution of the analysis, that is to say a) the diversity of a retail centre as it entered the economic crisis, b) the entry/presence of policy-compliant corporate foodstores, are both vital to preserving the economic health and sustaining performance of retail centres. Finally, this chapter discusses what this analysis tells us of two forces of change (i) tightening in the retail planning policy and the subsequent adaptation of a 'town centre first' approach to retail development, and (ii) the rise of convenience culture including the wider effects of an expansion of large food retailers into the convenience store sector on the specialist convenience retailers.

8.1 Links to previous studies

The shock of global economic crisis, fragile consumer confidence, and the emerging reality of Austerity Britain have resulted in a deterioration of household disposable incomes and impacted the retail/service configuration of UK town centres and high streets. The popular image of these changes tends to dwell upon the cataclysmic decay of UK high streets involving the emergence of highly unattractive and dominated by vacant outlets town centres with a focus on the possible 'death' of the traditional UK

high street dominated by small independent specialist retailers. However, does the evidence support those views?

This research, investigating those impacts has provided compelling evidence on both the performance of UK high streets and town centres during and since the economic crisis and the changes to their configurations. This study as in the case of other related studies, finds evidence of harmful impacts of the economic crisis on UK retail centres which were signalled by the progressively rising vacancy rates, originating predominantly from the closures of comparison retail and financial services units, and by the vulnerability of regional economies of northern Britain struggling to support the pre-crisis configurations of town centres and high streets. However, the descriptive analysis revealed that the response of UK retail centres to the shock of economic crisis and the other forcers of change has been far from uniform. The uneven adjustment of UK town centres to the onset of economic crisis was evident in both differential performance of retail/service types and complex spatial variability of the vacancy rate change. Whilst comparison retail and financial services felt the adverse impacts of the economic crisis, some types of convenience retail such as convenience stores and virtually all types of leisure services, with the exception of public houses, displayed strong resilience to the shock of economic crisis. Those retailers not only maintained the pre-crisis number of units but significantly managed to record substantial increases. Additionally, taking into consideration the key indicator of town centre performance - vacancy rate - this study has found that almost one in three retail centres in the cross-regional sample did not record any increases in vacancy rate.

Most of the descriptive analysis results are comparable with the findings of other commercial consultancies and property firms such as Local Data Company (LDC) or Colliers CRE. Despite the fact that there are some important differences in the number of centres surveyed, the spread of those centres, the retail hierarchy and the base used to calculate vacancy rates, both our analysis and that of LDC identify what LDC terms as the 'gathering storm' as a result of the shock of global economic crisis. Similarly, both analyses identify other factors having adverse effects on the performance of UK retail centres, in particular, the substitution effects of increasing

online sales which have seriously impacted the sales of some types of retail, such as music, video, bookshops and travel agents (Weltevreden, 2007). Conversely, this analysis and that of LDC report an upward trend in vacant units; although LDC's low starting base produced a much higher percentage of rises (Colliers CRE, 2009). Presumably as a result of employing sparse data (GENECON, 2011), the LDC's estimation of vacancy rate at about 4.5% was much lower than Colliers' at 7.3% or that of the cross-regional sample at 10.1%, used by our study. Given that the Colliers sample includes London, where vacancy rates in 2006 were below the UK average, Colliers' figures are clearly much closer to those recorded in our sample than those reported by LDC.

However, the major difference between this research and those of commercial consultancies and property firms relates to the fact that it has extended the list of drivers of UK town centre performance during and since the economic crisis in one of the first attempts of multivariate analysis of this issue and conceptualisation of the nature of change in configurations of UK retail centres by implementing the concept of resilience.

8.2 The value added by this study

The value added by this study has three dimensions: a) evidence on the differential performance of retail centres during and since the economic crisis, b) establishment of the factors driving the performance of UK high streets and town centres in response to the shockwave of economic crisis and during the emerging period of austerity, c) contextualisation of the nature of evolutionary change of UK high streets and their complex adjustment to the shock of economic crisis and other forces of change.

8.2.1 Evidence on the differential performance of retail centres during and since the economic crisis

The descriptive analysis has provided systematic evidence on the differential performance of retail centres during and since the economic crisis, in particular by establishing the severity of the impact of economic and competitive shocks on both broad and detailed types of retail/service. For instance, it demonstrates that the high

closure rates were mainly recorded by comparison retailers and business and financial services. This decline has been strongly related to the declining household incomes and progressive rise of online sales, typically offering better value. Although it could be argued that these results were comparable to those of commercial consultancies, the novelty of these findings relates to the fact that the difference between responses of multiple and independent retailers was captured. The assessment separating the performance of multiple and independent retailers is of considerable importance to the public and policy debate on the economic health of UK high streets as it provides valuable insights into the differential ways these two types of retailers adjusted to the economic and competitive shocks. Furthermore, we are not aware of any commercial consultancy which would provide systematic evidence based on that important distinction.

The emergence of the so-called 'digital' generation (Currah, 2006) has over past years been exerting increasing pressure on some types of traditional small retailers, especially on those that have not embraced technological change. What the economic crisis did was to exacerbate the impact of online sales on the traditional UK high street and spread them on additional types of comparison retailers. As a result, it was not only the large corporate retailers that were likely to be adversely effected by the e-commerce. In fact, this research shows that the large decline recorded by the comparison retail as a broad category was mostly associated with the closures of small independent shops. Indeed, small independent comparison retailers proved to be very vulnerable to the competition from 'e-tailers', which reinforced by the economic crisis, often experienced what Weltevreden (2007) referred to as the 'substitution effects' - the replacement of physical stores. On the contrary, the majority of multiple comparison retailers, with the exception of 'department stores' and 'kids wear', which were adversely impacted by the closure of 'Woolworths' and 'Adams' chains, remained relatively resistant to the shock of the economic crisis and rapidly growing online sales. Arguably, large corporate retailers have been better equipped to deal with the direct consequences of economic crisis such as decline in disposable household income and increasing demand for 'value for money'. As large comparison retailers have become

multichannel operators and embraced the new technology they were maximising the sales experiencing predominantly the complementarity effects of e-commerce.

In the case of convenience retail the picture was rather different; overall, this broad category demonstrated some resilience to the shock of economic crisis and other drivers of change, presumably due to the fact that food shopping is a necessity (Anagboso, 2009). More specifically however, our evidence suggested that the robust performance of convenience retail was primarily driven by large increases in all types of small convenience stores, with independent retailers recording the highest growth. Also taking into consideration the specialist convenience retailers, of a particular interest was the finding that independent retailers showed much stronger resistance to the onset of economic crisis relative to the multiple retailers. Some types of independent convenience retailers such as butchers and greengrocers recorded merely smaller declines than their multiple counterparts, but others such as greengrocers, grocers, bakers and off licences experienced genuine growth either in the four-region or southern part of our sample. This finding could challenge the commonly held view of many trade organisations and NGOs that increasing competition from 'town centre first' policy-compliant corporate food retail developments threatens the viability of small specialist stores.

8.2.2 Factors driving the performance of retail centres in response to the shock of economic crisis

One of the key aims of this study was to establish the indicators of retail centre performance during the economic crisis and austerity period. Understanding of those determinants is vital to maintain town centre/high street vitality and viability and protect them from unexpected cyclical and competitive shocks. This study, in one of the first attempts of multivariate analysis of this issue, provided statistically significant drivers of town centre performance. These drivers were obtained for two different spatial scales: (i) cross-regional and (ii) intra-urban.

(i) Vacancy rate which is the key indicator of retail centres' economic performance, has been widely used not only by researchers but also by local authorities and town centre managers (Findlay and Sparks, 2010; Wrigley and Dolega, 2011). Drawing from Findlay and Sparks' (2010) schema of retail vacancy causes, this study viewed changes

in vacancy rates as a product of filtering the shock of economic crisis through two different structures: regional and local. The regional dimension was reflected in a clear north-south divide with the southern part of our sample demonstrating stronger underlying growth dynamics compared with the more vulnerable regional economies of northern England (Dorling, 2010; Wrigley and Dolega, 2011). Similarly, filtering the macroeconomic shock through the local systems such as mix and interdependencies of businesses within town centres themselves and the physical configurations of those centres, produced theoretically expected results in terms of the beneficial impacts of: a) small-independent-specialist-store-based diversity, b) town-centres-first policy-compliant corporate foodstore entry/presence, c) substantial amount of entertainment-linked service units; and in terms of detrimental impacts – long-term structural vacancy.

These results, although largely consistent with the theoretical expectations, contained some factors that were theoretically more ambiguous. For instance, the influence of centre size on economic health had been unclear and the findings that smaller centres performed better than larger centres was reassuring as similar results have been reported by recent LDC's findings. Moreover, it is essential to stress that these findings represent important new evidence going well beyond previously reported evidence on the differential performance of UK high streets during the economic crisis. In particular, despite being central to highly polarised debates surrounding the impacts of corporate food-retail entry/presence on UK high streets, we are aware of no publicly available evidence simultaneously supporting the protective power of town centre diverse structures. Additionally, we are not aware of any evidence on whether diverse town centres/high streets proved more resilient to the shock of economic crisis than centres which were transformed by corporate-foodstore entry/presence.

Finally, the cross-regional model deriving the indicators of enhanced resilience had also some limitations. None of the measures of the group of factors which we termed supportive local institutional structures and business practices were statistically significant. Several of our proxies (e.g., BIDs scheme, town centre manager, ease of parking), when included in preliminary specifications of the regression modelling, had

parameter estimates consistent with our theoretical expectations, however, at best, they suggested weak relationships. The issue remains open therefore as to whether this group of factors is not included in the model as a result of: inappropriate proxies being selected, the particular structure of our 267 town centre/high street sample, or because they genuinely had a relatively marginal impact on the differential performance of centres experiencing significant macroeconomic shock.

(ii) The intra-urban analysis, utilising the above drivers derived for the 267 centre sample, confirmed that those factors hold well at local scale. This was a significant finding which could also be viewed as a validation of the cross-regional results. Importantly, some variables which did not reach conventional levels of significance in the cross-regional model, such as affluence of immediate catchment areas, proved to be significant at the local scale. The causes of such varying significance are not clear but it can be speculated that using constant size of catchment areas is less accurate in the cross-regional context than in the local one. Depicting accurate catchment areas for such a large sample is indeed a very complex process; one that is determined by a number of dynamics for each particular retail centre including its size, position in retail hierarchy or distance from nearest competitor.

8.2.3 Factors driving the performance of town centres during the emerging austerity

Central to obtaining the drivers of town centre performance during the shallow recovery period was incorporating of 'third wave' post-recession data, available for the intra-urban analysis. The results of that analysis have revealed two trends: a) the significance of some factors such as centre size, affluence and structural vacancy waned in the shallow recovery period and b) the beneficial impact of services, policy-compliant corporate foodstores and diversity was statistically significant.

Such results implied that the smaller centres started to feel the pinch during the emerging austerity period and the waning effect of affluence could be associated with the worsening situation of the 'squeezed middle', an instance increasingly reported by the media(The Independent, 8 Nov 2012). Furthermore, the evidence showing that the detrimental impact of structural vacancy vanished and the positive 'retail churn' increased could suggest that the effects of various supportive actions, triggered by the

economic crisis, begun to be noticeable. In the case of some town centres improved accessibility, revitalised streetscape and falling business rates began to attract rising number of new 'start-ups'.

However, of central importance was the fact that three determinants retained statistical significance and this had two implications. First, the finding that a substantial provision of services had beneficial impact on retail centre vitality has corroborated the trend which was underway during the period of prosperity. This could be linked to the fact that a wide range of services encourage customers to visit and spend more time in a particular centre (Zweeden, 2009; Moeller, 2009). Some trade associations for retail industry such as BRC also recognised this trend and in order to protect town centre vitality suggested aligning services and cultural activities along shops (BRC, 2009). However, the statistical evidence supporting those claims was provided by this study which also demonstrated that the increasing presence of service units is vital to the evolving configurations of UK high streets and town centres.

A second and perhaps novel contribution was the finding that both policy-compliant corporate foodstores and independent retailers are beneficial to preserving town centre vitality not only during the shockwave of economic crisis but also in the emerging period of austerity. It is essential to highlight that these two novel findings have been statistically significant in all models attempting to explain town centres differential performance. Although it is not consistent with the view taken by various small-retailer trade organisations and environmentally focused NGOs, we suggest that supporting the new interdependencies is a key and an inherent element of adaptively resilient town centres. As a result, these are the important but previously unexplored two issues that we now turn to.

8.2.4 Conceptualising the nature of evolutionary change of UK high streets

The complex response of UK high streets and town centres to the shock of economic crisis and the other forces of change has drawn our attention to the differential ability of those centres to recover from the economic shock. Essentially, the concept of resilience, which has recently become increasingly popular amongst economic and regional geographers, was applied to the retail sector. After reviewing

three different concepts of resilience, it had to be acknowledged that the idea of UK high streets simply ‘bouncing back’ to the pre-shock configuration: a) did not capture the subtle and complex way UK retail centres adjusted to the economic and competitive shocks depicted by the descriptive analysis and b) was not only unlikely but also undesirable. Rather, the empirical findings of this study were positioned against the type of resilience that stresses the anticipatory and reactive capacity of a system to minimise the impacts of a destabilising shock and which focuses on resilience as a dynamic and evolutionary process. This research, viewing UK high streets as complex and dynamic economic systems undergoing constant evolutionary change, suggested a *conceptual framework* of adaptively resilient town centre which linked the resilience of retail centres to the position in the *adaptive cycle* and the *role of various actors* across different scales. Moreover, we highlighted the importance of the ‘back loop’ – release and reorientation stages – to understanding of the emergence of new trajectories of growth, in particular by utilising the process of *adaptability*. In agreement with other studies (e.g. Dawley et al., 2010, Salt and Walker, 2012) this thesis questioned the ability of UK retail centres to adapt to economic and competitive shocks solely by a mechanism of spontaneous reconfiguration. Rather, it suggested that the ability of UK town centres to survive unexpected disturbances and ‘slow burns’ in a relatively good shape, can be also related to the previous knowledge and experience of various actors who can anticipate the changes in demand and consumer culture. This in turn, facilitates a multi-scale intervention, one which can transform the configuration of a high street and is typically fostered by novelty, creativity and innovation. The *conservation phase* was identified as the key time in which such intervention should be developed as otherwise, the system may break apart in an uncontrolled manner during an unexpected shock or disturbance. However, it needs to be pointed out that the statistical modelling showed only a limited relationship between the institutional support and town centres’ vitality. More compelling, in that respect, was the qualitative evidence from the intra-urban analysis, which demonstrated that all five retail centres that received some form of institutional help during the economic crisis improved their performance in the subsequent period.

Despite some limitations of the *adaptive cycle framework* such as the complexity or not accounting for the power and conflict '*present in regional governance in ways they are not present in ecosystems*' (Swanstrom, 2008, p.3) there might be significant implications for the design of policy proposals and instruments aimed at revitalising UK town centres and high streets. This in particular should include addressing the new and policy-significant empirical findings on the increasing role of services and complex relationship between the large corporate and independent retailers. In the evolutionary context, the adaptability of reconfigured town centres and high streets was centred on new mixes and offers of small and specialist store types, providing symbiotic relationships with the in-centre or edge-of-centre corporate foodstores. Nevertheless, it is essential to highlight that the concept of adaptively resilient high streets is still in the embryonic stage. Therefore, further research testing the above assumptions is essential, in particular one investigating the aspects of: a) relationship between the pre-shock development stage of a retail centre and its response to the economic crisis, b) the role of institutional support in building adaptive capacity of UK high streets and town centres and c) the nature and extent of the emerging symbiotic relationship between corporate foodstores and independent retailers.

8.3 Corporate food retailers and the drivers of change - reactive or proactive response?

In the context of the adaptive resilience framework, the reactive response of large food retailers to the tightening retail policy can also be viewed as being continuously reshaped by the evolving cultural context. This research investigated the response of corporate food retailers to both the adoption of a 'town centre first' policy and the rise of 'convenience culture' during and since the economic crisis. The evidence provided by this research has contributed to the public and policy debate in three ways: a) by establishing the role played by diversity - measured by proportion of small stores - and corporate retail entry in protecting the performance and enhancing the resilience of centres/high streets, b) by evaluating the reactive and proactive response of corporate food retailers to the changes in planning policy and convenience culture c) by

providing evidence of the impacts of 'convenience culture' on the configurations of UK high streets and retail centre.

8.3.1 What has this thesis told us about diversity of retail centres and entry/presence of corporate food retailers?

Small-retailer trade organisations such as the Association of Convenience Stores (ACS), together with environmentally focused NGOs and campaigning organisations such as the Campaign for Rural England, Friends of the Earth, and New Economics Foundation (NEF) have long argued that the vitality and sustainable development of small retail centres is closely linked to their diversity. In the context of an economic crisis, NEF (2009) regarded diversity as a factor potentially enhancing resilience of UK high streets; otherwise they can find themselves buffeted by wider corporate disinvestment decisions during the economic crisis such as Woolworths, Adams, Borders etc. Typically, the organisations who subscribe to this view, regard the corporate-food-retail entry into UK high streets which took place in the late 1990s and 2000s, as uniformly destructive of those town centres/high streets' locally-owned amenities. Although this entry could be regarded as a consequence of the adoption of a town-centres-first approach to planning regulation, the common view amongst above organisations and a large proportion of the public was to strongly resist it in order to prevent further loss of diversity (Wrigley and Dolega, 2011).

In contrast, a growing body of academics have argued that corporate foodstore entry/presence has also positive impacts on town centres' economic performance. In particular, highlighting their role as anchor stores in maintaining the quality and range of shopping in smaller towns, arguing that they should be '*seen as a vital element in sustainable development plans*' (Powe and Shaw, 2004, p. 407) and corporate foodstore entry '*can act as a catalyst for further investment in those centres*' (DETR, 1998, p. 8). The evidence of positive impacts associated with the corporate foodstore entry/presence included their role in 'clawing back' trade from larger urban centres and supporting the use of other services in the town by the mechanism of linked trips (Thomas & Bromley, 2003; Wrigley et al., 2010b).

Popular debate, however, portrays these two views as polar opposites in terms of attempts to protect and/or enhance the vitality and viability of town centres and high streets.

This study has concentrated on the extent to which policy-compliant corporate foodstores, those located in and/or edge-of-town centre, have impacted the performance of UK high streets and town centres, in particular the specialist convenience retailers. It is therefore of central importance that both factors, high diversity and corporate foodstore presence/entry, were statistically significant and associated with the enhanced performance of UK town centres; that is to say, with smaller increases or reductions in vacancy rate. Indeed, the desirable and emerging evolutionary trajectory of reconfigured high streets likely to characterise the post-crisis decade, was one in which adaptability was centred on new mixes and offers of small and specialist store types, providing symbiotic relationships with the in-centre or edge-of-centre corporate foodstores. Moreover, the view that corporate policy-compliant foodstores have uniformly detrimental impacts on the centre's diversity was also rejected by the intra-urban convenience store entry/exit analysis, where all the high streets that experienced net corporate convenience store entry had retained their vitality, measured by the number of specialist convenience retailers. In fact, a somewhat opposite trend was detected where in some cases the entry of a corporate convenience store was supplemented by rising numbers of small specialist convenience retailers.

8.3.2 Reactive or proactive response of large food retailers to the drivers of change?

This study has also provided valuable insights into the incompletely understood consequences of more than a decade-long transformation of UK town centres and large corporate food retailers flexibly adapting to the tightening in retail planning regulation. In particular, by considering the nature and extent to which corporate foodstores presence/entry have adopted 'town centre first' policy during and since the economic crisis, this study demonstrated two valuable aspects of those consequences. First, it strongly confirmed that large grocery retailers have widely adopted the 'town centre first' agenda by developing the majority of their stores in-town or edge-of-town

centre locations. The intra-urban analysis showed that of the 33 supermarkets present in the pre-crisis period, as many as 30 were the policy-compliant in/edge-of-town centre developments. Furthermore, the descriptive analysis results revealed two underlying trends:

a) The overall number of supermarkets has slightly declined in the cross-regional sample. This could be partly explained by the closure of Kwik Save stores in the northern part of our sample and the divestment of 133 Somerfield stores across the country as the Co-operative Group was ordered by the Office of Fair Trading (OFT, 2009) as a part of the acquisition deal. In addition, as a result of that merger some voluntary divestment of the former Somerfield supermarkets took place, presumably to avoid the cannibalisation issue. Nevertheless, the number of supermarkets operated by the so-called 'big four' grocery retailers (Tesco, Sainsbury, Asda and Morrisons) has recorded net increase, despite the harsh economic conditions and declining households income.

b) Although Tesco had the biggest share amongst all grocery retailers it was the Co-op that operated the highest number of supermarkets across the analysed 267 town centres and high streets. Our evidence shows that after the merger, Co-op had as many stores, predominantly medium sized, as Tesco and Sainsbury's combined.

The second feature revealed by this study relates to the store formats adopted by corporate food retailers as a response to the planning policy regime. Some commentators (e.g. Wrigley et al., 2009; Wood et al., 2010) suggested that one of the reasons corporate food retailers entered the sector of small convenience stores was attributed to the Competition Commission (2000, 2003, 2007) having provided a shelter for such developments interpreting the wider UK grocery market as a combination of two separate sectors, the 'one stop' which was highly regulated and the secondary/convenience store sector, which was highly fragmented and neglected by the large retailers.

Indeed, the intra-urban results demonstrated that the prevailing store formats were the policy-compliant a) mid-size supermarkets (between 3 000 and 15 000 SqFt) and b) convenience stores (below 3 000 SqFt). This study has also demonstrated that

the strong growth in convenience store numbers during the first half of the 2000s, reported by the Competition Commission (2007) and Wrigley et al., (2009), was maintained despite the shock of economic crisis. In particular, Tesco was found to expand rapidly the small Express stores, increasing the number of outlets by 50% in the relative measure (M1) between late 2006 and early 2009, and essentially becoming the most common fascia amongst the convenience stores in Bristol. Such rapid expansion encountered some challenges too. They were clearly demonstrated by the Bristol riots in April 2011 which, as the Guardian (22 April 2011, p. 1) heralded, had been '*sparked by a raid on a squat occupied by opponents of a newly opened Tesco Express store in Stoke Croft*'.

Although the media portrayed parts of Bristol as in 'the war with Tesco', the results of this study suggested that a more moderate view of those events might be essential, one that takes into account the proactive response of large food retailers to changes in consumer culture.

Indeed, the rise in convenience culture across Britain and other developed countries pointed out by Wrigley, 2010 is associated with the rapid expansion of the small convenience store sector as a whole. It could be argued that consumers have rethought economic and social cost associated with long rather than short distances to shops and the time cost associated with large and often inhospitable stores and this has placed increasing doubts on a long term prospects of large format out-of-town retail developments. Although all types of convenience store operators were found to increase their presence on UK high streets substantially, there was emerging evidence, that corporate retailers may prefer different locations than the independent retailers. The intra-urban analysis revealed that large food retailers were more likely to open new convenience stores in centres towards the upper end of the retail hierarchy, whilst independent retailers preferred the opposite end. This could be explained by the fact that factors responsible for the emergence of convenience culture - time scarcity, longer working hours, increasing leisure orientation and a growing number of males responsible for shopping (Reimers and Clulow, 2004) - are more likely to prevail amongst inner city dwellers. For instance, as suggested by DTZ (2007) certain dynamics

such as a large labour force and high student population, prevailing in central Bristol, created higher demand for convenience shopping.

8.3.3 Impact of convenience culture on UK high street configurations

The strong growth of convenience stores, in particular the entry of corporate retailers into that sector has attracted increasing attention of various trade organisations commercial and academic research. In agreement with the anti-supermarket rationale outlined in Chapter 3, some trade organisations (e.g. ACS) and academic researchers (Sadun, 2008) claimed that expansion of corporate retailers into the c-store market has been associated with adverse effects on convenience specialist retailers. The findings of this research however, suggest that this was not necessarily the case when considering: a) the number of independent convenience stores and b) the number of other specialist convenience retailers. In terms of the former, this thesis provides compelling evidence that all types of convenience store operators increased their numbers substantially, with independent retailers accounting for the largest share of that growth. In fact, the intra-urban study showed that the independent retailers accounted for more net growth in convenience store numbers than corporate and symbol group retailers combined. In terms of the latter, we acknowledge that although certain convenience specialists e.g. butchers, greengrocers and health food stores recorded considerable declines during the onset of the economic crisis, there was no evidence to support the view that those declines were associated with the growth in corporate convenience stores. It could be argued that whilst the growth in convenience stores was attributed somewhat to the response of corporate retailers to the rise of convenience culture (Wrigley, 2010) the decline in some specialist convenience retailers could be largely explained by the decrease in personal disposable income (Angaboso, 2009) observed during the economic crisis and the following period of austerity. Indeed, the intra-urban descriptive analysis revealed that the health shops and butchers after the initial drop in numbers recorded between the pre-crisis and within-crisis surveys, managed to recover in the post-recession period. Such an engineering resilience like recovery implied that the unexpected shock of economic crisis could be blamed for their misfortune rather than the steady expansion

of corporate retailers into the small convenience store market. Moreover, this claim seemed to be supported by two additional pieces of evidence. 1) The substantial decline in off licence stores, which was recorded in the shallow recovery period, was entirely associated with the national chain First Quench going into administration. In consequence, this trend had not been experienced by the independent off licence stores, which recorded constant growth throughout the analysed periods. 2) More importantly, the four Bristol retail centres that experienced net corporate convenience store entry did not record any loss of vitality, measured by the number of convenience specialist retailers. Although there was some evidence of 'retail churn' and adverse effects associated with the initial shock of the economic crisis, the total number of convenience specialist retailers remained constant between 2006 and 2010 in two of those centres and slightly increased in the remaining two.

Thus, the evidence from this study strongly supports the view that the impacts of corporate c-store entry on the independent convenience specialist retailers were not uniformly negative. Rather, we find evidence of neutral or in some cases positive impacts. This is a crucial finding to the debate on the impacts of corporate convenience stores on the traditional UK high streets. It supports the argument that convenience stores have risen to prominence and partially have taken the role of supermarkets, and as a result 'anchoring' small retail centres, enhanced the viability of existing centres through the spill-over trade effects of linked trips. The claims on uniformly negative impacts of corporate convenience stores on UK high streets, raised by ACS and other researchers, appear to be overstated at best, at worst, biased. This research contributes to the view that in the face of economic and competitive challenges the 'healthy' UK high streets are likely to focus on forming symbiotic and complementary relationships between corporate and independent retailers. However, we acknowledge that the Bristol area might depict the dynamics of the South West or southern part of our sample, but by no means can represent the UK as a whole. Therefore, it would be of a great benefit to conduct further research examining the nature of corporate food retailers' entry into the small convenience store sector, using survey data for large urban areas in other regions of the UK.

8.4 In conclusion

This study has investigated the complex adjustment of UK town centres and high streets to the global economic crisis and other powerful and interlinked forces that have recently been (re)shaping the economic performance and physical structures of those retail spaces. These forces include: a) more than ten years of rapidly increasing online sales systematically exerting pressure via substitution effects on several components of traditional British high streets, b) the competition from out-of-town large retail developments and the subsequent tightening of retail policy leading to the implementation of a 'town centre first' policy and c) the progressive and until recently little discussed rise of 'convenience culture' which has led to rethinking by consumers of the value attributed to 'one stop' shopping and the desire of corporate retailers to enter the fast growing convenience stores market.

What the global economic crisis did was to expose these forces. Over the past fifteen years, all four factors have differentially impacted the vitality of UK high streets and have become an increasing focus of government and public anxiety. Although this study has mainly concentrated on the response of UK retail centres to the shock of the 2008-09 economic crisis and its aftermath by depicting their differential performance between the pre-crisis, within-crisis and shallow recovery periods and establishing the determinants of enhanced resilience significant at both cross-regional and intra-urban levels, there were also strong linkages with the remaining forces of change. In particular, the intra-urban analysis has strongly focused on the pre-existing structure of corporate food retailers and their recent expansion into the small convenience store sector. In consequence, this study has provided evidence that the picture of corporate convenience stores directly competing with the convenience specialist retailers in the manner portrayed by ACS and other NGOs was not an accurate one. Rather, the dynamic and constantly evolving UK high streets have increasingly begun to create new interdependencies and symbiotic relationships between corporate and independent retailers. The new empirical evidence provided by this research on the drivers of performance and reconfiguration of UK high streets and town centres and the mechanisms responsible for that change have expanded our understanding of the

complex adjustment of high streets to those forces – enhancing available knowledge.

The implications of these findings are threefold:

- (i) First, some results although providing new and valuable insights have essentially corroborated previous studies, conducted by both academia and commercial research consultancies. In particular, the descriptive analyses which examines the differential performance of broad and detailed types of retail, revealed substantial increases in vacant retail/service units, resulting mostly from closures in comparison retail and financial services. Furthermore, the convenience store entry/exit analysis has confirmed a strong growth of small food-retail-based convenience stores despite the adversities of economic crisis, a finding extending similar results reported previously by both the Competition Commission (2008) and Wrigley et al., (2009a).
- (ii) Second the drivers of performance identified by the multivariate analysis are of themselves important to the policy debate on the future of UK high streets. The study found a set of statistically significant factors protective of town centre vitality during the shock of economic crisis and the subsequent period of austerity. Although some of those findings could be viewed as controversial, they have set a benchmark against which future studies evaluating the resilience of retail centres can be positioned and interpreted. Specifically, the effects of high diversity of retail centres, substantial presence of various services and the entry/presence of a policy-compliant corporate foodstore, have been shown to be beneficial to the economic health UK town centres and high streets.
- (iii) The study provides a theorisation of these important changes, in particular utilising the concept of resilience of economic systems to understand the reconfiguration of UK high streets as a result of the shock of economic crisis and the subsequent period of austerity. In particular, we use the concept of adaptive resilience to understand the dynamic and evolutionary process in which UK high streets have gradually and constantly changed. In this research we suggest a conceptual framework which links the notions of

adaptive capacity and adaptive resilience and indicates how a position of a centre in the adaptive cycle and the role of various actors may be important to performance of that centre.

Never before has the economic health of high streets been so high at the political agenda, nor generated such a large amount of research. This thesis has participated within the rise of that research and some of the results, previously published or in press, have been presented and disseminated at high profile Government meetings and are acknowledged to have made a significant contribution to those debates. The work presented here is by default a snapshot of both emerging analytical research and policy response which both reflects and is shaped by the nature of those debates.

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Appendix 1

Comparison	Convenience	Retail Service	Leisure Services	Financial & Business Services	Vacant Outlets
Antique Shops Service	Bakers & Confectioners	Clothing & Fancy Dress Hire	Bars & Wine Bars	Building Societies	Vacant Retail &
Art & Art Dealers	Butchers	Dry Cleaners & Launderettes	Bingo & Amusements	Building Supplies & Services	Other vacant outlets
Booksellers	CTN	Filling Stations	Cafes	Business Goods & Services	
Carpets & Flooring	Convenience Stores	Health & Beauty	Casinos & Betting Offices	Employment & Careers	
Catalogue Showrooms	Fishmongers	Opticians	Cinemas & Theatres	Financial Services	
Charity Shops	Frozen Foods	Other Retail Services	Clubs	Legal Services	
Chemist & Drugstores	Greengrocers	Photo Processing	Disco, & Nightclubs	Other Business Services	
Childrens & Infants Wear	Grocers & Delicatessens	Photo Studio	Fast Food & Take Away	Printing & Copying	
Clothing General	Health Foods	Post Offices	Hotels & Guest Houses	Property Services	
Crafts, Gifts, China & Glass	Markets	Repairs, & Restoration	Public Houses	Retail Banks	
Cycles & Accessories	Off Licences	Travel Agents	Restaurants		
Department & Variety Stores	Supermarkets	TV, Cable & Video Rental	Sports & Leisure		
DIY & Home Improvement		Vehicle Rental			
Electrical & Durable Goods		Vehicle Repairs & Services			
Florists		Video Tapes Rental			
Footwear					
Furniture Fitted					
Furniture General					
Gardens & Equipment					
Greeting Cards					
Hardware & Household Goods					
Jewellery, Watches & Silver					
Ladies & Men Wear & Acc.					
Ladies Wear & Accessories					
Leather & Travel Goods					
Men Wear & Accessories					
Music & Musical Instruments					
Music & Video Recordings					
Newsagents & Stationers					
Office Supplies					
Other Comparison Goods					
Photographic & Optical					
Secondhand Goods, Books, etc.					
Sports, Camping & Leisure Goods					
Telephones & Accessories					
Textiles & Soft Furnishings					
Toiletries, Cosmetics & Beauty Products					
Toys, Games & Hobbies					
Vehicle & Motorcycle Sales					
Vehicle Accessories					
Shoe Repairs Etc.					

Appendix 1

Appendix 2

ID	Intra-urban centre name
1	Bristol - Arnside Road
2	Bristol - Ashley Road
3	Bristol - Avonmouth Village
4	Bristol - Baldwin Street
5	Bristol - Bedminster
6	Bristol - Bishopsworth
7	Bristol - Brislington
8	Bristol - Broadmead
9	Bristol - Chandos Road
10	Bristol - Christmas Steps
11	Bristol - Clifton
12	Bristol - Coldharbour Road
13	Bristol - Crow Lane
14	Bristol - Filton Avenue
15	Bristol - Filton Road
16	Bristol - Filwood Broadway
17	Bristol - Fishponds
18	Bristol - Fishponds Road
19	Bristol - Gilda Parade
20	Bristol - Gloucester Road
21	Bristol - Henleaze
22	Bristol - Hotwells
23	Bristol - Lawrence Hill
24	Bristol - Lockleaze
25	Bristol - Lodge Causeway
26	Bristol - Millennium Square
27	Bristol - Mina Road
28	Bristol - North View
29	Bristol - Old Market
30	Bristol - Queens Road
31	Bristol - Riding Leaze
32	Bristol - Sandy Park Road
33	Bristol - Shirehampton
34	Bristol - Shirehampton Road
35	Bristol - Southmead Road
36	Bristol - St George
37	Bristol - St Marks Road
38	Bristol - St Michaels Hill
39	Bristol - Stapleton Road
40	Bristol - Stockwood
41	Bristol - Stoke Lane
42	Bristol - Stokes Croft
43	Bristol - Victoria Street
44	Bristol - Wells Road
45	Bristol - Westbury-on-Trym
46	Bristol - Whitchurch
47	Bristol - Whiteladies Road

Resilience, Fragility, and Adaptation:

New Evidence on the Performance of UK High Streets During Global Economic Crisis and its Policy Implications

Neil Wrigley and Les Dolega

School of Geography,
University of Southampton, SO23 9HJ, UK

email - n.wrigley@soton.ac.uk

email – ld1e09@soton.ac.uk

Environment & Planning A. 2011, volume 43, pages 2337 – 2363

Abstract

At a time of increasing Government concern with the economic health of UK town centres and high streets, and with an independent inquiry (led by Mary Portas) on *Revitalizing the High Street* to report by the end of 2011, this paper seeks to make four contributions.

First, to inject into an available evidence base, currently notable for its sparseness, new descriptive evidence on the differential performance of a sample of over 250 centres/high streets in four regions of the UK as those centres adjusted to the shock wave of global economic crisis. Second, to address the task of *theorizing* the nature of the complex adjustments underway by positioning the policy-significant findings provided in the paper within conceptualisations of ‘resilience’ in economic systems - particularly those which stress the anticipatory or reactive capacity of systems to minimise the impacts of a destabilising shock and which focus on resilience as a dynamic and evolutionary process. Third, to offer findings from theory-driven statistical modeling of the determinants of the differential resilience or fragility exhibited by that sample of centres. Fourth, to assess what the implications of those findings and a focus on ‘adaptive resilience’ might mean for the design of policy proposals and instruments aimed at revitalising UK town centres and high streets.

Although some of the paper’s empirical findings parallel those suggested by specialist commercial research companies which have emerged to fill the need to chart the post-economic crisis malaise of UK retail centres, they also significantly extend available knowledge. In particular, they offer novel insight into the impact of two factors – ‘diversity’ of a centre’s pre-existing retail structure and ‘town centres first’ policy-compliant ‘in-centre’ or ‘edge-of-centre’ corporate foodstore entry. Although conventionally portrayed as polar opposites within popular debate in terms of attempts to protect and/or enhance the vitality and viability of town centres and high streets, our analysis suggests that this may not be the case. Indeed the retail centres in our sample which proved most resilient to the shock wave of global economic crisis were characterised by *both* diversity and corporate food store entry

Introduction

Town centres and high streets in the UK have adjusted in complex, and as yet not fully understood and documented ways, to the global economic crisis of 2007-09 and the sharp deterioration in UK consumer confidence recorded during late 2007 and early 2008. Moreover, that adjustment has taken place on top of the incompletely understood consequences of two other forces. First, of the progressive rise of online retailing which year-on-year has had increasingly marked ‘substitution’ effects on certain types of town-

Appendix 3

centre retailers (Weltevreden, 2007). Second, of the decade-long transformations which have resulted from the increasingly effective implementation of a '*town centres first approach*' to retail planning policy following the adoption of PPG6 and the 'sequential test' in the mid 1990s (Guy, 2007; Wood et al, 2006; Wrigley 2010; Cheshire et al, 2011).

At a time of considerable Government concern about the economic health of UK high streets, two tasks are vital in any attempt to address the policy-significant gaps in knowledge concerning the differential ability of those retail centres to adjust to the macroeconomic shock wave of global crisis. First, and most obviously, there is the critically important task of providing new empirical evidence. However, that must not merely be descriptive. Specialist commercial research consultancies (e.g. the Local Data Company) have been created and/or have risen to prominence in response to that need. In particular, the Local Data Company (LDC) has charted for the UK press and media the declining fortunes of certain types of high street and categories of retailer during the plunge into recession in 2008, the shallow recovery of 2009/10, and the threat of 'double dip' in early 2011 associated with the UK Government's public-sector expenditure cuts, declining household incomes and the emerging reality of 'Austerity Britain'. Rather the empirical knowledge required most urgently, and which can add greatest value, derives from the more detailed and higher-order insights that can be provided by considered, and inevitably more complex, academic analysis. Second, however - and of equal importance - is the task of *theorizing* the nature of the complex adjustments underway. The differential performance of UK town centres and high streets during economic crisis is clearly intimately related to their capacity to be resilient to the impacts of macro-economic shock. However, as recent debates in evolutionary economic geography have demonstrated (particularly the work of Martin, 2011) the concept of '*resilience*' is itself a multi-dimensional one, reflecting the alternative interpretations adopted by different scientific traditions. Nevertheless, as we demonstrate below, both individually and in combination, those varying interpretations of resilience - particularly the concept of '*adaptive resilience*' - offer analytical leverage in structuring understanding of the likely evolutionary paths of UK town centres and high streets post economic crisis.

Appendix 3

This paper addresses both these challenges. First, it contributes to an evidence base which is currently notable primarily for its sparseness. In particular, by using a specially created dataset consisting of Goad/Experian³ retail-composition survey information for 267 centres/high streets in 4 regions of the UK, it begins the task of providing the missing analytical insights into the factors which shaped the performance of those centres during economic crisis. Second, it addresses the task of theorizing: (i) the complex adjustments of UK town centres and high streets to the shock wave of economic crisis, (ii) what that might mean in terms of pre-existing evolutionary trajectories of UK town centre/high street reconfiguration, and (iii) what the implications might be for the design of policy proposals and instruments aimed at revitalising those centres. Specifically, it does that by positioning the new and policy-significant empirical/analytical findings which it provides within conceptualisations of ‘resilience’ in economic systems, particularly those which stress the anticipatory or reactive capacity of systems to minimise the impacts of a destabilising shock and which focus on resilience as a dynamic and evolutionary process.

The paper proceeds in the following way. First, it provides a summary of our approach to the empirical knowledge task. Specifically it addresses the design and execution of our 267 centres/4 regions study of retail change – detailing at a descriptive level, and triangulating

³ The Goad/Experian retail survey data provides detailed maps and associated databases for over 2,300 retail centres in the UK.. Essentially each retail unit in a centre is mapped onsite by Experian surveyors, and retail occupancy information on the fascia of the occupying retailer/service provider, their retail/service category, and the floor space of the unit is collected. The initial surveys and maps date to the mid 1960s when Charles Goad started the Goad map and database at the request of the then Department of Trade and Industry. Since then, the coverage of retail centres has been progressively extended over time both geographically and to include smaller centres. Currently, the top 500 ‘ranked’ retail centres in the UK are surveyed on an annual basis with the remainder being surveyed every two years. The longitudinal richness of the available data on large numbers of centres has resulted in increasing use of the information outside the retail and property industries –as illustrated in the parallel analyses of exit and entry of small stores in over 1000 centres between 2000 and 2006 reported by the Competition Commission (2007) and by the University of Southampton retail research group Wrigley et al, 2009). The issue of how the boundaries of the retail centres mapped by the Experian surveyors are defined is discussed later in the paper

Appendix 3

against other sources, the overall losses and gains of different types of retail and service provision experienced by these centres following the macroeconomic shock of global crisis. Next it addresses the task of theorizing the nature of resilience and adaptation revealed by the contrasting performances of UK town centres and high streets. Structuring the paper in this way is a deliberate choice and should not be misinterpreted as indicating any downplaying of the theoretical. Rather, it is positioned at this point to signal and preface the important shift - from descriptive to theoretically-leveraged analytical - in the paper's focus which then follows. Moving into the presentation of that analytical statistical-modelling phase of our research it is important to stress that our motivation was, as far as possible, to ensure a 'top-down' theoretically-driven approach to the analysis. Likewise, and as shown in the final sections of the paper, we consistently sought and have attempted to provide, a contribution to UK policy debate - in particular to the Government's *Revitalising the High Street* initiative launched in May 2011 - which positions the findings of our study within a conceptualisation of 'adaptively resilient high streets' and which remains sensitive to issues of existing and emerging evolutionary trajectories.

The Empirical Knowledge Task 1

Study design

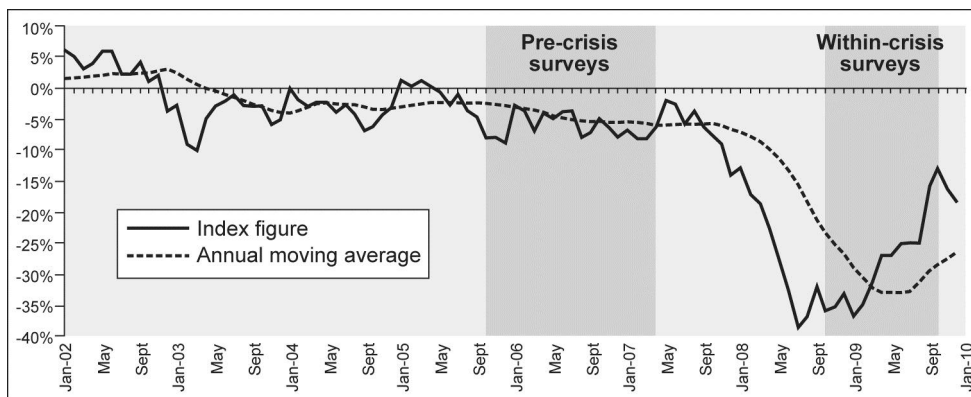
As part of a broader research programme at the University of Southampton focused on the consequences of a decade of tightening UK retail planning regulation, the opportunity arose - with ESRC RIBEN support - to design a study of the differential ability shown by 267 town centres and high streets spread across four regions of the UK in adjusting to the macroeconomic shock wave of global crisis. The study relied on retail composition information drawn from the detailed and long-established Goad/Experian surveys - a data source (see Footnote 1) which has increasingly been used to provide vital evidence-based research for UK regulatory enquiries and policy debate. (See Competition Commission, 2008, A5(1) 8-18 and Wrigley et al, 2009a, p.2066 for discussions of the strengths and weaknesses of the Goad/Experian data. In particular, note the Competition Commission's (2008, A5(2) -9) publicly expressed confidence in the quality of the data.)

The 267 town centres/high streets each had Goad survey data which allowed assessment of the retail change experienced by those centres as they adjusted to economic crisis. That is

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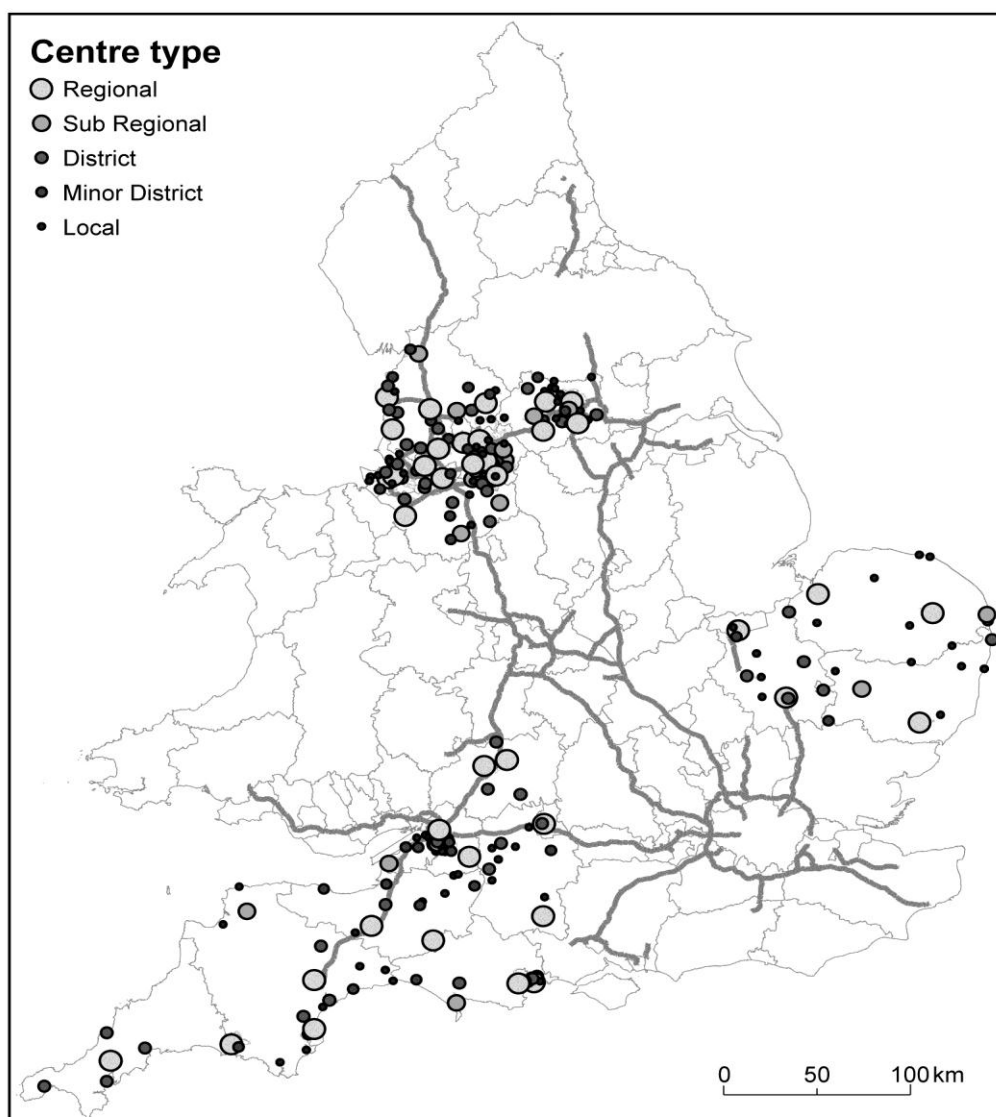
to say, change in their retail/service-unit composition between the immediate pre-crisis period (2006-2007) and the period (Q4 2008 through 2009) which followed the steep plunge in UK consumer confidence shown in Fig 1. Given that the consumer confidence index is a 'leading indicator', it was not until that latter period (Q4 2008 - 2009) that the effects of the economic crisis began to be felt most strongly by those centres.

Figure 1: UK consumer confidence index 2002-09



The 267 centres/high streets (shown in Fig 2) were divided into two groups –a 'northern' group of 117 centres (93 in the North West and 24 in West Yorkshire) and a 'southern' group of 150 centres (119 in the South West and 31 in East Anglia). The design represented a pragmatic 'least cost' supplementation of a set of Goad surveys to which the researchers had access in order to meet the requirements of a complementary, but much larger, industry-funded project in the wider University of Southampton research programme (see Wrigley et al, 2010, Ch 14). Nevertheless, as Fig 2 indicates, despite the pragmatic and constrained nature of its design, the sample of centres/high streets included offered good representation across centre size, the urban/rural spectrum, contrasting underlying regional economic growth dynamics, and so on. However, it was in no sense a sample which was spatially structured or sufficiently large to be representative of the UK – most significantly, it omitted London, where very different patterns and levels of growth of some types of retail and service provision had been found in the early to mid 2000s by both the Competition Commission (2007) and the University of Southampton research group (Wrigley, 2007; Wrigley et al, 2009a).

Figure 2: Location and type of 4-region sample of centres/high streets



Descriptive analysis of changes in retail composition

For each retail or service type in the 267 town centres/high streets sample, two measures of change between the 'pre-crisis' and 'within-crisis' (subsequently referred to as '*recession*') surveys were calculated.

- (c) The first, measure M1, was the *relative* change in retail/service units of a particular type in the centre/high street. That was computed as the difference between unit numbers recorded in the two Goad surveys ('pre-crisis' and 'within-crisis'), relative to the 'pre-crisis' numbers as a base.

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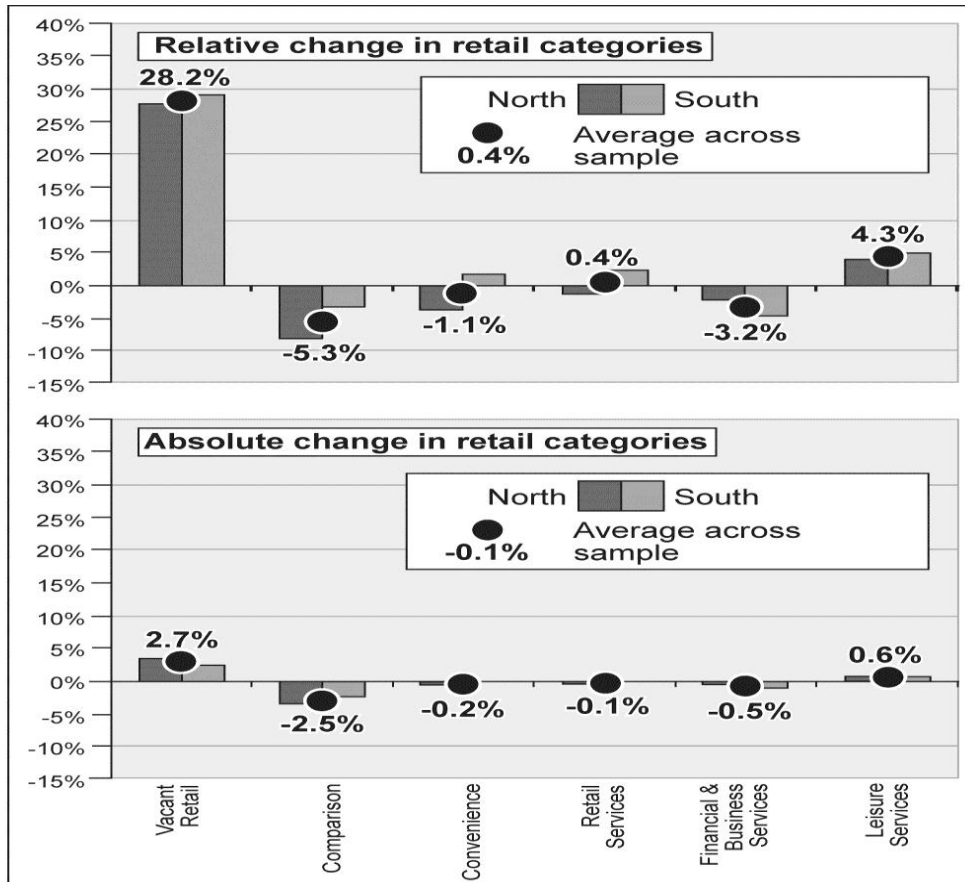
(d) The second, measure M2, was the simple *absolute* basis-points increase/decrease recorded between the two surveys in the percentage of retail/service units of a particular type in a centre/high street.

In the case of M1, low 'pre-crisis' base figures recorded for a particular retail/service type in a centre have the capacity to produce high and unstable values of relative change. Conversely, M2 measures absolute change in the percentage of each retail/service type in a centre and is more stable

Overall change in the retail composition of sample centres/high streets

The most commonly used indicators of the impact of the macro-economic 'shock' of economic-crisis experienced by UK town centres/high streets are retail/service unit closures, empty units and, in turn, increases in the measured 'vacancy rate' of a centre. As Fig 3 shows, in our sample of 267 centres, between the 'pre-crisis' and 'recession' surveys, vacant units increased by 28% (based on relative change measure M1) from an average of 10.4% to 13.1% - that is to say 2.7 basis-points on absolute change measure M2.

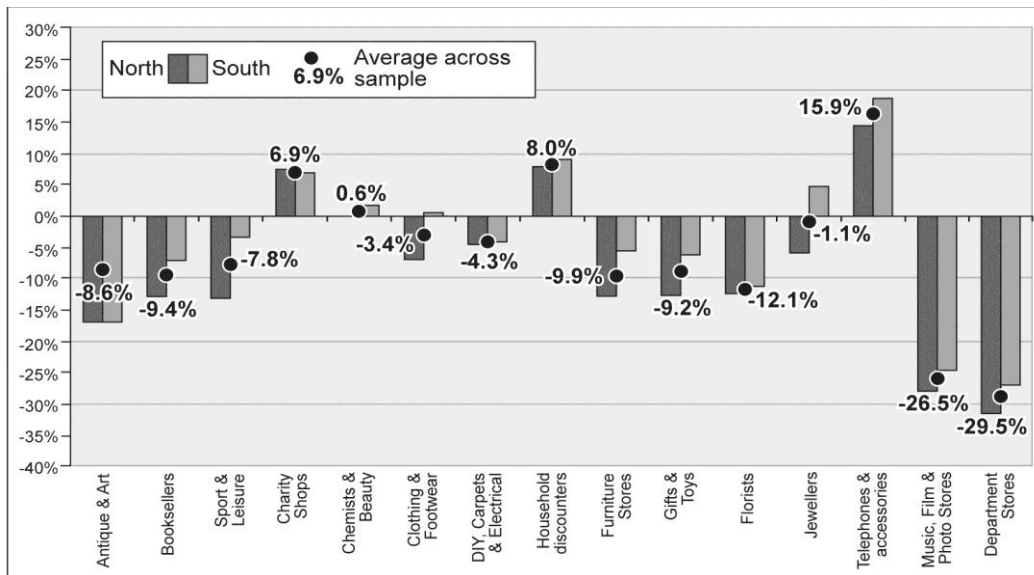
Figure 3: Relative (M1) and absolute (M2) change by retail category - 'pre-' to 'within-crisis'



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In terms of the broad types of retail/service which contributed to those closures and increased vacancy rates, the greatest adverse impact from the ‘shock’ of economic-crisis appears to have been felt by ‘*comparison*’ retail (essentially non-food retailing, but see Appendix 1 for a full listing of the types of retailing falling into that category) As Fig 4 shows, virtually all types of retailing within that broad category lost units as ‘discretionary’ spending by UK consumers declined. However, the hardest hit appear to have been ‘department stores’, ‘music, video & photography’ retailers, ‘florists’, ‘furniture & furnishings’ retailers, ‘booksellers’, and ‘cards, gifts & toys’ retailers – each type recording a relative decline (measure M1) in the range -29% to -9%. Nevertheless, the impact on ‘comparison’ retail was clearly far from uniform. ‘Telephones & accessories’ retailers, ‘household discounters’ (consisting of ‘pound shops’, household bargain shops etc) and to a much lesser degree ‘chemists & beauty’ retailers recorded increases rather than declines - indeed telephone retailers recorded a relative increase of almost 16%. Moreover, as many types of comparison retailers closed units, so ‘charity shops’ mirrored ‘household discounters’ by moving into some of the vacated space. The consequence was that charity units increased by almost 7%.

Figure 4: Relative change (M1) in comparison retail categories – ‘pre-crisis to ‘within-crisis’

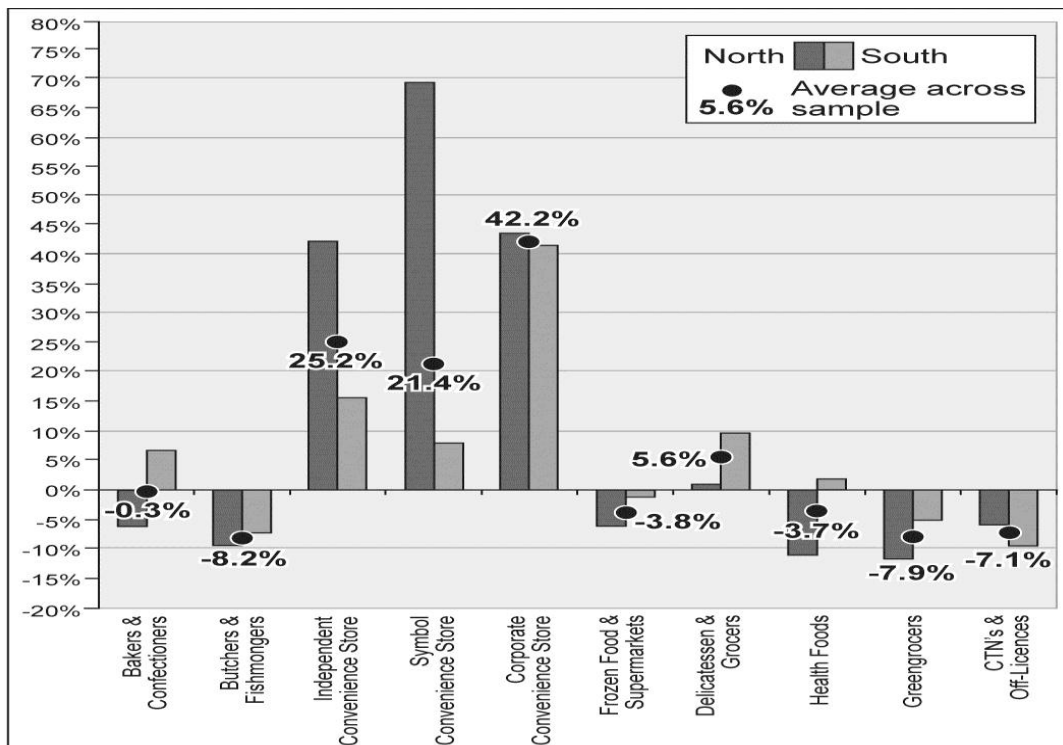


In contrast, ‘convenience’ retail, ‘financial & business services’, ‘retail services’ and ‘leisure services’ contributed far less to the increased vacancy rates. Indeed, as Fig 3 shows, in each of these broad categories – with the exception of ‘financial & business services’ – there was some evidence of continued growth, both in terms of ‘relative change’ (M1) in units and in square feet of floor-space.

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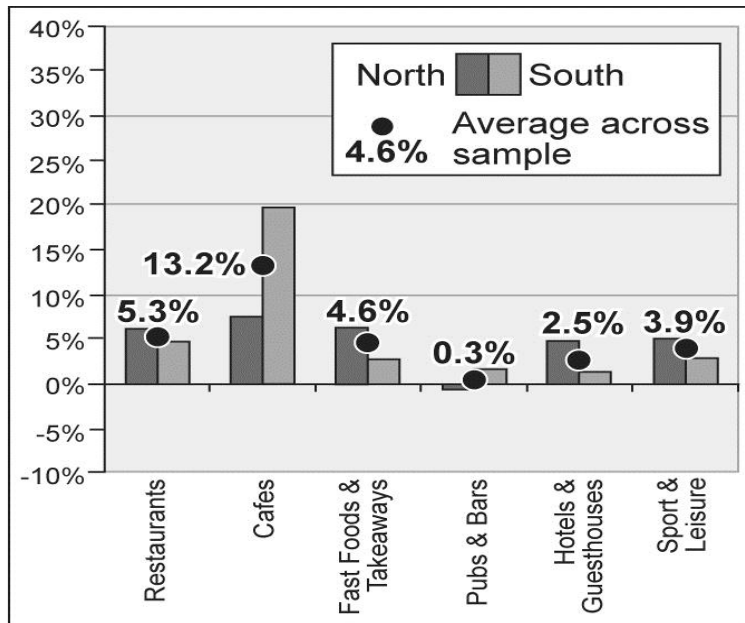
In the case of ‘convenience’ retail (see Appendix 1 for full listing of types of retailing falling into the category), Fig 5 shows that only three categories - ‘butchers & fishmongers’ (-8.2%), ‘greengrocers’ (-7.9%), and ‘CTNs & off-licences’ (-7.1%) - experienced relative declines close to the lower-bound (9%) figure recorded by the hardest hit types of ‘comparison’ retail. Moreover, the strong growth which both the Competition Commission (2007, 2008) and the Southampton research team (Wrigley 2007; Wrigley et al 2009a) had uncovered in relation to small food-retail-based ‘convenience’ stores during the early to mid 2000s, and which had been reported to the *Groceries Market Inquiry* (2006-08), appears to have been maintained despite the shock of economic crisis. Moreover, as in those earlier findings which related to the first half of the 2000s, significant increases (above 20%) were recorded not only in corporate convenience stores, but also among ‘symbol group’ and ‘independent’ convenience stores – the latter having been seen, during the early to mid 2000s to be associated with the growth of ethnic retail (particularly in London and prospering southern England), or what Guy (2008) referred to as the ‘Polish grocer’ effect. However, growth during economic crisis was not confined to the small food-retail-based ‘convenience’ store sector. There was also evidence, in the ‘southern’ part of our 4-region sample of centres/high streets, of increasing numbers of *specialist* small food retailers, with ‘bakers’ and ‘delicatessens’ recording gains of between 5% and 10%.

Figure 5: Relative change (M1) in convenience retail categories – ‘pre-crisis’ to ‘within-crisis’



Likewise, in the case of 'leisure services', Fig 6 shows that growth was recorded for almost all categories of 'leisure services' (a decline in pubs is masked by the categorisation in Fig 6). In particular, there was a substantial (+13%) relative increase in cafes – a finding duplicated at the local level in an earlier study of the transformation of the retail structure of a market town in South West England (Wrigley et al, 2009b)

Figure 6: Relative change (M1) in leisure services categories – 'pre-crisis' to 'within-crisis'



Assessing and triangulating the descriptive findings

In assessing these initial descriptive findings, two issues can usefully be considered. First, how do they compare to the results obtained by the Local Data Company - specifically from the LDC's analysis of a larger but more thinly spread sample of 705 UK centres which includes less smaller (district and local) centres than in the research reported here. Second, what are the indicators that the differential performance of UK town centres and high streets as they responded to macro-economic 'shock' might have systematic and identifiable dimensions – not least relating to geography? In other words what are the initial hints in the descriptive analysis that UK town centres/high streets exhibited differential, but explainable, levels of 'resilience'?

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First, with regard to the findings of the Local Data Company, we note three things.

(a) In regular reports released since 2009 and covering similar issues to those in the descriptive results outlined above (LDC, 2009, 2010, 2011), the LDC has charted, for a non-academic audience, the 'gathering storm' affecting UK high streets following, but not entirely as a consequence of, the shock of global economic crisis. In particular rising retail vacancy rates have been highlighted – with average rates reaching 12% at the end of 2009 and 14.5% at the end of 2010. Likewise, the LDC has highlighted the main contributions to closures and increased vacancy rates as coming from 'comparison retail', with 'convenience' retail categories displaying much greater resistance to the shock of economic crisis.

(b) The LDC's end-2009 vacancy figure (12%) across its wider but more thinly spread UK sample is not dissimilar to the 13.1% recorded in our 2008 Q4 – 2009 'within crisis' sample. Likewise, despite the different categorisations of 'comparison' and 'convenience' retail types used by LDC compared to our study – the LDC's findings are broadly equivalent to those reported above. In particular, 'department stores', 'gifts' and 'stationary/cards' retailers, 'florists', 'furniture and related' retailers, and 'music & video' (or 'home entertainment') retailers are identified in both studies as amongst the hardest hit 'comparison retail' categories – with relative declines in the -29% to -10% range being recorded in both. Similarly, both LDC and our study agree that the 'convenience' retail categories showing greatest relative decline include 'butchers & fishmongers', 'CTNs' and 'off-licenses', but that the declines experienced by these categories place them at or below the lower end of the range noted for the hardest hit 'comparison' retailers

(c) The most striking difference between our figures and those of the LDC relates to the average vacancy rate in the pre-crisis period. In our 2006/07 'pre-crisis' sample, that figure has been noted above in relation to Fig 3 to be 10.4%. In contrast, LDC calculate the 'gathering storm' of shop closures and high street retail vacancies from a Q1 2008 base vacancy rate which they estimate to have been around 4.5%. In part the difference reflects a general reduction in vacancy rates which occurred during 2006/07, and the different geographical structure of the samples. However, we also note concerns expressed by some leading UK property consultancies (e.g Colliers, 2009), when reviewing LDC and

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related figures, regarding ‘confusing’ data and ‘inconsistency of approaches’ to measuring empty retail units. Colliers report that their own figures, in contrast, suggest that retail vacancy rates – defined on the basis of empty units available for occupation (‘hard voids’) - rose from 7.3% in October 2006 (a central point of our ‘pre-crisis’ sample) to 13.8% in April 2009 (a central point of our Q4 2008 -2009 ‘within-crisis’ sample). Given that the Colliers’ sample includes London - where vacancy rates in 2006 were below the UK average - Colliers’ figures are clearly much closer to those recorded in our sample.

Secondly, what indicators are there within these descriptive findings that there may be systematic and identifiable dimensions of the differential performance of UK town centres and high streets as they adjusted to macro-economic ‘shock’? Here it is sufficient simply to highlight the obvious ‘north-south divide’ present throughout Figs 3 to 6. (See Dorling 2010 for a recent consideration of the enduring significance of the concept to the economic geography of the UK). That divide - with northern town centres/high streets performing significantly worse in terms of rising vacancy rates and, moreover, threatened in the medium-term with continued struggle given their heavier dependence on public sector employment at a time of severe Government expenditure cuts - has also consistently been highlighted in the LDC reports. Additionally, the LDC reports suggest differential performance related to centre size which, in turn, compounds the north-south differential. That is to say, whilst large and medium-size centres in the north appear in the LDC results to have performed poorly in terms of increasing vacancy rate, medium-size centres in the south have shown much greater ‘resilience’ to the shock of economic crisis.

Having contributed to the available descriptive evidence base, the focus of the study now shifts from descriptive to theory-leveraged analytical. Specifically, we explore the value which can be added to debates on the economic health of UK high streets from a consideration of alternative conceptualisations of ‘resilience’ in economic systems. We then report the findings obtained from a ‘top-down’ theoretically-informed statistical modelling of the differential performance of our sample of town centres and high streets during economic crisis, asking what factors determined the levels of resilience and fragility exhibited by those centres.

The Theoretical Interpretation Task

Three concepts of 'resilience'

The concept of 'resilience' – broadly defined as the ability to 'recover from and position *elastically*' following a disturbance of some form - has recently attracted attention in both urban and regional studies and evolutionary economic geography (Foster, 2007; Hill et al, 2008; Christopherson et al, 2010; Hassink, 2010; Martin and Simmie, 2010; Martin, 2011). That interest has essentially focused on the capacity of a local economic system to recover from external 'shock' – what Hassink (2010, 45) describes as

'one of the most intriguing questions in economic geography ... why some regional economies manage to renew themselves, whereas others remain locked in decline'

In particular, Martin (2011) in an insightful exposition has drawn attention to three alternative interpretations of the concept of resilience adopted in different scientific traditions. Martin refers to these as: (i) the 'engineering resilience' interpretation found in physical science, (ii) the 'ecological resilience' interpretation found in biological science, and (iii) the 'adaptive resilience' interpretation found in complex systems theory.

Whereas the 'engineering resilience' interpretation focuses on the ability of a system to *bounce back* (return to a stable configuration) - that is to say, to be resistant to economic shock - the 'ecological resilience' interpretation focuses, as Martin shows, on the scale of shock a system can absorb before it is destabilised and moved to a new configuration. In other words, what pushes a system beyond its '*elasticity threshold*' to a new configuration. In the ecological interpretation, therefore, the degree of 'resilience' is the size of shock a system can tolerate before it is unable to return to its former configuration and must change form, function or position.

Clearly, in existing uses of the term 'resilience' in the context of the responses of UK town centres and high streets to macro-economic shock, the notion of 'bounce back' has often been implicit. Additionally, however, the notion of 'tipping points' which move town centres/high streets beyond their 'elasticity thresholds' has regularly been present in public policy debate on the future of the high street. In particular, arguments relating to the potentially adverse impacts of corporate foodstore entry on the fragile '*ecologies*' of small

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and specialist independent-retailer-dominated town centres and high streets have been mounted by both small-retailer trade organisations (e.g. the Association of Convenience Stores) and by anti-corporate-food-retail or environmentally-focused NGOs. That is to say, both ‘engineering’ and ‘ecological’ interpretations of ‘resilience’ are present in the debates which inform and frame policy.

Yet, in our view - although acknowledging that aspects of the ‘ecological resilience’ interpretation potentially offer analytical leverage - neither of these interpretations quite capture the subtle nature of town centre/high street adaptation which we observe via our descriptive analysis. Rather, we find greater traction in the third interpretation identified by Martin - ‘*adaptive resilience*’ - which focuses on anticipatory or reactive reorganisation of the form and function of a system so as to minimise the impact of a destabilising shock. As Martin observes, complex adaptive systems are distinguished by ‘self-organizing’ behaviour and an adaptive capacity which enables them to reconfigure their internal structures spontaneously. As a result, the ‘adaptive resilience’ interpretation focuses on resilience as a dynamic and evolutionary process. Moreover, it is an interpretation which in Martin’s view resonates with Schumpeterian (1942) notions of the ‘creatively destructive’ potential of macro-economic shocks – in which the sweeping away of outmoded economic structures opens up opportunities to develop new configurations and new trajectories of growth.

There is considerable leverage we believe to be gained from using an ‘adaptive resilience’ interpretation to structure understanding of the likely evolutionary paths of UK town centres and high streets post economic crisis. Conversely, the notion that centres/high streets will simply ‘bounce-back’ in an ‘engineering resilience’ manner following economic recovery, or indeed that returning to the previous configurations of those centres/high streets is achievable or desirable, is one for which we have little sympathy. Moreover, despite the intrinsic attraction of the concept of ‘tipping’ mechanisms which have the potential to push centres/high streets - in an ‘ecological resilience’ manner - beyond their ‘elasticity thresholds’ to new configurations of form, function and position, that represents, in our view, only part of the story. In particular, the *protective nature of ‘diversity’* argument which is often used by small-retailer trade organizations and NGOs to support the need to underpin the ‘fragile ecologies’ of small and specialist independent-retailer-dominated

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centres is poorly articulated.⁴ Rather, we are attracted to the notion that town centres/high streets have, in ways that are poorly understood, complex self-organizing anticipatory and/or reactive capacities. That is to say, by the idea that what we are observing in our empirical research is essentially an *evolution* - albeit at differential rates across the UK - to new configurations of, and functional relationships within, those centres/high streets.

But what are the key dimensions of a retail centre's structure – not least its mix of businesses (both retail and services), the relationships and interdependencies between those businesses, and with local institutional structures - that served to protect centres differentially against the shock of economic crisis and to facilitate adaptive resilience? Moving into the statistical modelling phase of our study, our primary motivation, therefore, was to ensure a 'top-down' theoretically-driven analysis of these dimensions, avoiding as far as possible over-mechanical reliance on 'bottom-up' data exploration.

The Empirical Knowledge Task 2

The nature of the response variable

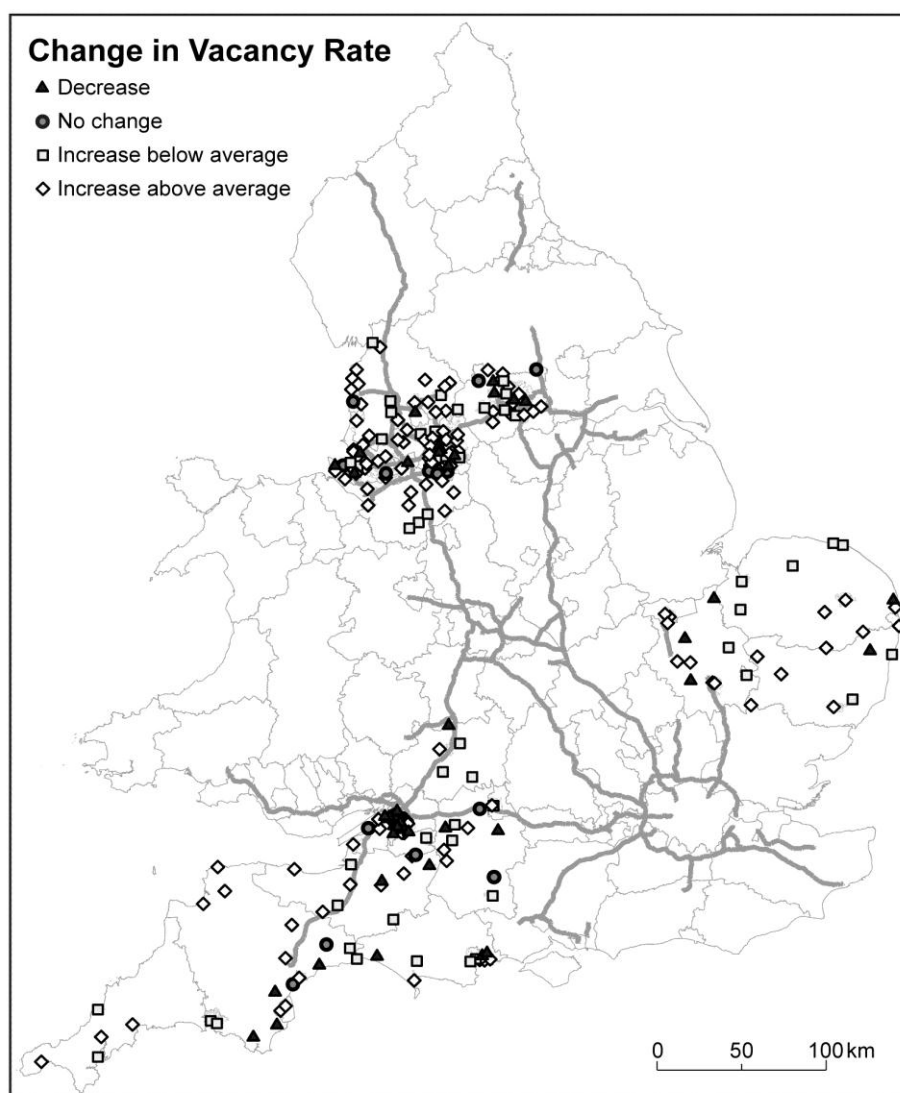
As noted above, the most commonly used indicators of the impact of macroeconomic shock on UK town centres and high streets are retail/service unit closures, empty and/or 'available but still trading' units (referred to as 'hard' and 'soft' voids), and changes in retail/service vacancy rates. In a similar fashion, our analysis uses vacancy rate change as the 'response

4 In this context, we are grateful to one of our referees for suggesting that there would be value to be gained from considering the 'diversity' component of the arguments surrounding the need to protect the fragile ecologies of small and specialist independent-retailer dominated centres, within the context of what is termed the Jacobs vs. Marshall-Arrow-Romer (MAR) debate (Glaeser et al. 1992). In particular, the issue of *concentration versus diversification* considered within that debate, and which has important implications for the ability of regional economies to cope with changing competitive dynamics flowing from the macroeconomic shocks of rapid globalization of industries, requires appropriate translation into, and evaluation within, the discussion of retail 'diversity'. In particular, the potentially *protective* effects of small independent store based diversity in dealing with the changing competitive dynamics and macroeconomic shock waves engulfing UK town centres and high streets require articulation and their mechanisms spelling out

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variable' in the multivariate models reported below. As a result, we begin by showing in Fig 7 the complex spatial variability of those vacancy rate changes across our four-region sample. Overall, Fig 7 reveals that 69.3% of our sample centres/high streets experienced an increase in vacancy rates - with some centres seeing rises in the 5 to 10 basis points range between the pre- and within-crisis surveys in terms of absolute change measure M2. In contrast, and more surprising given the concerns of UK Government and media with the deteriorating economic health of town centres and high streets, 22.8% of our sample centres recorded reduced vacancy rates in the 'within-crisis' surveys, with a further 7.9% experiencing no change in rates.

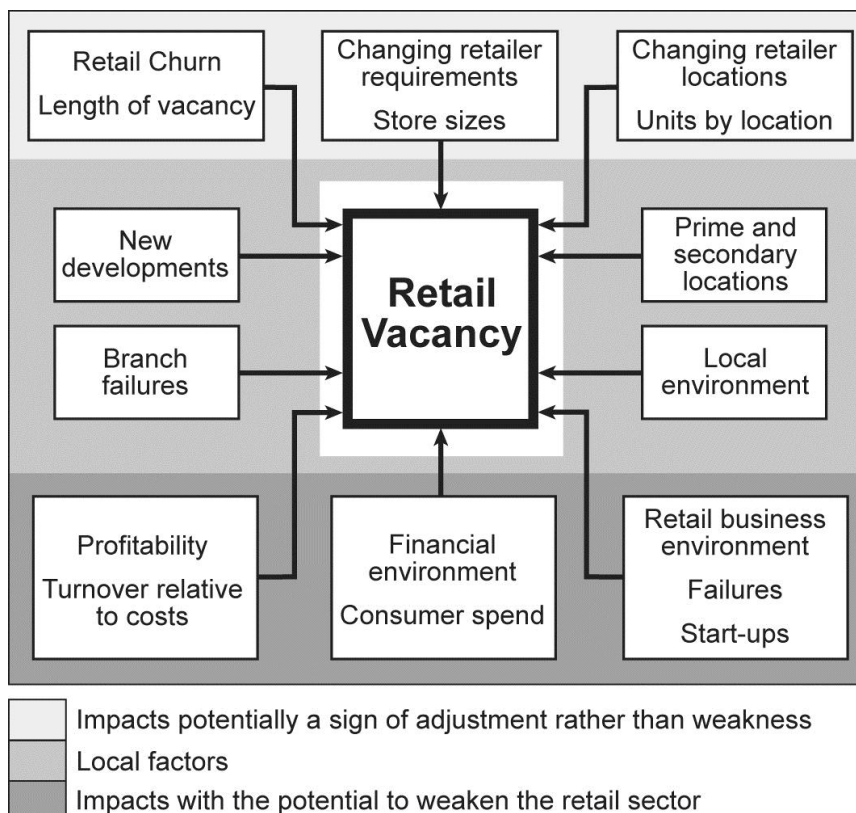
Figure 7: The spatial variability of vacancy rate changes across the 4-region sample



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Moreover, consistent with the dynamic and evolutionary ‘adaptive resilience’ perspective outlined above, it must be stressed that ‘vacancy rate change’ is not a uni-dimensional variable. Indeed, as Findlay and Sparks (2010) point out in a rare discussion of the issue, (summarised via the schema in Fig 8) retail/service unit vacancies are not uniformly and inevitably an indicator of the fragility of a centre/high street. They may equally be a sign of ongoing and essential readjustment. That is to say, in stable economic conditions, a degree of what is termed ‘*churn*’ is essential to accommodate and facilitate often rapidly changing retailer/service-provider requirements in terms of store formats, sizes, and preferred micro locations within centres/high streets as those retailers and service-providers adjust to shifting consumer tastes and fluctuating levels of market demand. In other words, a certain level of vacancy is essential to, and reflects, a ‘healthy high street’. By extension, in periods of macro-economic shock, a somewhat higher ‘churn’ rate might simply be a necessary element in, and reflection of, self-organizing anticipatory or reactive reconfiguration by ‘adaptively resilient’ town centres/high streets as they evolve dynamically to new configurations, trader interdependencies, and trajectories of growth.

Figure 8: Determinants of retail vacancy – the view of Findlay and Sparks (2010)



More prosaically, there are also some definitional issues regarding the use of vacancy rates as the response variable in a multivariate analysis which require clarification. The first of these relates to the base from which the vacancy rate is calculated. As the Colliers' (2009) report on inconsistency of approaches to the assessment of high street performance makes clear, some researchers have calculated vacancy rates at a given point in time 'by expressing empty units as a percentage of all shop units (only), whilst others take all town centre units into account – resulting in a lower percentage'. In our case, we adopted the former approach – expressing empty units as a percentage of retail and service units. If we had adopted the latter, then the average vacancy rate in the pre-crisis period across our sample of 267 centres/high streets would have been 9% rather than 10.4%

The second relates to the more complex issue of whether the vacancy rates were calculated on the basis of what can be termed 'fixed' or 'variable' boundaries. The Experian/Goad surveys of town centres and high streets allow the boundaries of the shopping areas to expand or contract over time (from survey to survey) – or, as the Competition Commission (2007) noted, to have 'no fixed size in geographic terms'. However, as the University of Southampton research team pointed out in submissions to the Commission (see Wrigley et al, 2009, p2069) those boundaries can also be held constant. That is to say, vacancy rate change can be calculated within *fixed* boundaries, allowing us to report what might be termed the *like-for-like* increases or decreases in vacancy rates. In the multivariate analysis which follows we report the 'fixed boundaries' like-for-like figures. However, both 'fixed' and 'variable' boundaries results were derived and used to assess the robustness of the findings reported.

Specification of the explanatory variables

As the schema (Fig 8) of Findlay and Sparks (2010) implies, the differential changes in retail/service unit vacancy rates experienced across UK town centres and high streets as a result of the macro-economic shock of global economic crisis, can be viewed as a product of filtering that 'shock' through two structures.

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(a) First, through the regional economic system in which centres/high streets are located. That produced, in turn, regional, sub-regional and local variations in both levels of consumer confidence and levels of demand across the immediate catchment areas of those centres/high streets.

(b) Second, through the existing economic structures of the centres/high streets themselves. That is to say, through their pre-existing mix of businesses, the relationships and interdependencies between those businesses, and through local institutional structures supportive or less supportive of their business-practice environments and entrepreneurial cultures. Additionally via the way that process is translated into wider retail and property industry assessment of the likely trajectories of growth of the centres/high streets.

As a result, attempts to identify potential explanatory variables focused on capturing both these dimensions.

In terms of the *first dimension* (economic system in which embedded), a clear North-South divide was present in the descriptive findings discussed above, and also in similar results of the LDC. The expectation going into the multivariate modelling was that filtering the ‘shock’ of economic crisis through regional economic structures that had a previously strong underlying growth dynamic (i.e. the previously prospering ‘South’) would, other things being held constant, have resulted in less severe increases in vacancy rates than in similarly configured centres/high streets in the more vulnerable regional economies of the ‘North’. There was also the expectation that *within* regional economies, holding other things constant, centres/high streets with more affluent catchments or with demographics favouring higher rates of consumer demand, would likewise have experienced less severe increases in vacancy rates.

In terms of the *second dimension* (economic structures and configurations of centres/high streets themselves), given the argument advanced above, attention focused on the following groups of factors.

(a) *The mix and interdependencies of businesses* – in particular:

(i) the balance of retail versus service units;

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(ii) the proportion of small independent retailers - i.e what has been argued by small-retailer trade organizations and NGOs to be the potentially protective, but fragile, '*diversity*' of independent specialist-store dominated centres/high streets;

(iii) the presence, or entry via a '*town centres first*' policy-compliant in-centre or edge-of-centre site, of a corporate foodstore able to anchor the centre/high street and provide a vital element in ensuring its sustainable development in the manner described by Powe & Shaw (2004), Thomas & Bromley (2003), and Wrigley et al (2010a).

(b) *Local supportive or unsupportive institutional structures and business-practice environments that impact on the attractiveness of the centre/high street.* In particular, indicators such as: investment in the design and maintenance of the built environment and 'streetscape' of the centre; funding of a 'town centre manager'; involvement in BIDs schemes; supportive car parking policies; encouragement (perhaps by incentives) of the entry of key 'magnet stores' and/or investment in temporary 'crowd pulling' attractors to enhance the attractiveness of the centre/high street and to encourage spill-over spending by consumers, etc.

(c) *The physical configuration of the town centre or high street and the extent to which that might help facilitate re-configuration and renewal.* In particular, the overall size of the centre/high street and the distribution of floorspace across units in the centre. The argument here is that larger centres potentially offer a wider variety of niches but also higher prevailing levels of competition compared to small centres. Additionally they are also likely to be characterised by a higher proportion of larger modern shop units offering potential for flexible re-configuration when compared to the typically older less adaptable retail fabric of many UK smaller centres/high streets. Finally, the level of what can be termed '*structural vacancy*' in the centre/high street - defined as long-term empty units in existence for more than two years indicating poor retail fabric and harmful to the attractiveness of the centre has also been argued to be potentially important (Zweeden, 2009; Findlay and Sparks, 2009). That is to say, the level of 'bad' vacancy as opposed to the short-run 'healthy' vacancy which is associated with normal '*churn*' and which facilitates both adjustment of store formats, sizes and in-centre locations by existing retailers/service-providers and a necessary level of entry and exit

The theoretical expectations going into the multivariate modelling regarding these *second dimension* groups of factors were as follows. Filtering the macro-economic shock of economic crisis: (a) through centre configurations underpinned by supportive local institutional structures and business practices which promoted the attractiveness of centre/high street; (b) through retail/service and trader type/size mixes which were ‘*diverse*’ going into the period of crisis; (c) through structures involving corporate foodstore presence or, alternatively, entry conforming with the *town centres first approach* to retail planning policy and which helped anchor the centre by encouraging expenditure retention and linked trips (Powe and Shaw, 2004; Wrigley et al, 2010b) were - other things being held constant - likely to have protected centres against the most severe increases in vacancy rates. Finally, in the case of physical structures which facilitate flexible re-configuration, whilst expectations relating to the influence of centre size were far more ambiguous, there was a clearer consensus that higher levels of existing ‘structural’ vacancy going into the period of crisis was likely to have been detrimental to the attractiveness of a centre/high street and to have been associated with more severe increases in overall vacancy rates.

The best-supported theoretically-grounded model of vacancy rate change

Table 1 summarises the results of our multivariate modelling. That is to say, a parsimonious seven-variable OLS regression model obtained after exploration of many different specifications of possible sets of explanatory variables which might capture the two dimensions discussed above – dimensions through which the shock of economic crisis was filtered into differential changes in vacancy rates across our four-region sample of 267 town centres and high streets. *Negative* parameter estimates indicate factors which, holding all other things constant, are associated with reductions in the rate of increase in vacancy rate between the pre-crisis and within-crisis surveys. In other words, which are linked to *relative improvement* in performance of centres/high streets during economic crisis. *Positive* parameter estimates indicate the opposite – factors associated with *relative worsening* of performance during economic crisis.

Overall, the model in Table 1 explains 36% of the complex spatial variability of changes in vacancy rates shown in Fig 7 – a respectable level for a parsimonious model of a relatively

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large cross-sectional sample, and one which leaves more than 250 degrees of freedom⁵. The model has been subject to a battery of standard tests to check the extent it conforms both to OLS assumptions and provides robust estimates. The OLS assumption tests are summarised below the table. Taken together with standardized residual and predicted value plots, the tests suggest normally distributed residuals, no evidence of significant heteroscedasticity, and multicollinearity below critical thresholds. Outlier and leverage plots were used to check the robustness of the parameter estimates. On the basis of outlier/high leverage detection criteria which have become standard practice in regression diagnostic approaches (Belsley et al, 1980; Henderson and Velleman, 1981; Wrigley, 1983), a small number of centres (8) were removed from the initial sample of 267 to produce the estimates reported in Table 1

Table 1 A parsimonious theoretically-grounded model of vacancy rate change

Explanatory Variable	Parameter estimate	Standard Error	T-value
Constant	-0.076	0.019	-3.998**
South-North divide	-0.016	0.004	-4.170**
Centre size (Log)	+0.013	0.002	+5.743**
Retail diversity pre-crisis	-0.027	0.013	-2.139*
Corporate food store entry	-0.008	0.004	-2.081*
Retail vs services % pre-crisis	+0.095	0.021	+4.463**
Structural vacancy pre-crisis	+0.060	0.010	+6.130**
Std Avg Store Size x Std magnet store floorspace	-0.349	0.082	-4.243**

** parameter estimate significant at 1%, * significant at 5%. R squared = 35.6 N = 259

5 We accept, of course, that despite the attraction of this theory-driven parsimonious model, more than 60% of the complex spatial variability of changes in vacancy rates remains unaccounted for, and that there is a strong probability that there may be missing explanatory variables that we have not been able to include in our model which may be found to have an important role to play in accounting for the differential performance of our sample of centres in response to the shock wave of global economic crisis. Differential parking policies and charges are perceived to play a significant role in the economic health of town centres and high streets but unfortunately we had no access to systematic information on these factors, Neither did we have access to systematic information on retail rents at a centre or retail/service unit level. Omission of either of these variables may have played a role in our inability to retain a catchment affluence variable in the model reported in Table 1.

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P-value for normality test of residuals =0.84

Durbin-Watson d value = 2.17

Condition index value of = 28.61

The main findings of the model of vacancy rate change presented in Table 1 can be summarised as follows

Town centres and high streets in our 4-region sample which displayed the greatest resilience to the shock of economic crisis (as measured by lower rates of increase, or reductions, in vacancy rates) - that is to say, which were more likely to have sustained their vitality and viability - were *all other things being equal/held constant* more likely to have been:

- 'southern' rather than 'northern';
- 'smaller' rather than 'larger';
- those whose business mixes in the pre-crisis period were characterised by higher proportions of service units relative to retail units;
- those whose retail unit compositions in the pre-crisis period were characterised by the 'diversity' offered by higher proportions of small independent specialist stores;
- those which, despite the shock of economic crisis, had experienced between the 'pre-' and 'within-crisis' surveys an in-centre or edge-of-centre corporate foodstore entry which conformed with the 'town centres first' approach to retail planning policy;
- those with lower levels of 'structural vacancy' in the pre-crisis period – i.e. with lower levels of the 'bad' long-term vacancy potentially harmful to the attractiveness of centres/high streets;
- those whose physical structures going into economic crisis could be seen as both relatively attractive and facilitative of re-configuration – in the model this was proxied in terms of centres/high streets characterised by larger average store sizes which *additionally* had higher levels of that floorspace occupied by 20 of the UK's key/'magnet' retailers (i.e. by the multiplicative effect of these two characteristics)

The majority of these findings are consistent with our theoretical expectations outlined above. For example, filtering the 'shock' of economic crisis through regional structures that in the pre-crisis period had relatively strong underlying growth dynamics compared to the more vulnerable regional economies of northern England was reflected, as expected, in a clear 'North/South' divide in performance. Similarly, filtering the macro-economic shock

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through the mix and interdependencies of businesses within town centres/high streets and the physical configurations of those centres, produced theoretically expected results in terms of the beneficial impacts of: (a) small independent specialist store based ‘diversity’, and (b) ‘town centres first’ policy-compliant and expenditure-retaining corporate foodstore entry, plus additionally in terms of the detrimental impacts of (c) long-term ‘structural vacancy’. Moreover, in the case of factors such as the influence of centre size where our expectations were theoretically more ambiguous it is reassuring that our findings – that ‘smaller’ centres performed better than larger centres, other things being equal – lend support to similar findings now being reported by the LDC.

It is important, however, to highlight two further aspects of Table 1.

- (a) First, that the model reported includes none of the measures of the group of factors which we termed ‘*supportive local institutional structures and business practices*’. Several of our proxies (e.g. BIDs scheme, town centre manager, etc), when included in preliminary specifications of the model, had parameter estimates consistent with our theoretical expectations. However, at best they suggested weak relationships and none approached conventional levels of significance. The issue remains open therefore as to whether this group of factors are not included in the model as a result of: inappropriate proxies being selected, the particular structure of our 267 centre/high street sample, or because they genuinely had a relatively marginal impact on the differential performance of centres experiencing significant macroeconomic shock. Likewise our expectation that: within regional economies, holding other things constant, centres/high streets with more affluent catchments or with demographics favouring higher rates of consumer demand were likely to have performed relatively well in the face of the shock of economic crisis, again produced parameter estimates of the expected signs. Nevertheless, despite suggesting stronger relationships with centre performance than the factors we assessed from the local institutional structures/business practices group, none of the proxies of catchment affluence we experimented with reached conventional levels of significance.
- (b) Second, although we have suggested that the majority of the findings of the model in Table 1 are consistent with our theoretical expectations, it is essential to stress that these findings represent important new evidence which goes well beyond what has previously been reported about the differential performance of UK high streets during economic crisis. In particular, despite being central to highly polarised debates surrounding the impacts of corporate food retail incursion into UK high streets, we are aware of no publicly available evidence on whether centres/high streets which experienced the shock of economic crisis with diverse independent small-store dominated structures, were protected by that diversity. Additionally, we are not aware of any evidence on whether ‘diverse’ centres/high streets proved more resilient to the shock of economic crisis than centres which were transformed

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by corporate foodstore entry/investment. As a result, it is to that important but previously unexplored issue that we now turn.

Diversity versus corporate retail entry

As noted above, small-retailer trade organizations such as the Association of Convenience Stores (ACS), together with environmentally-focused NGOs and campaigning organizations such as the Campaign for Rural England (CPRE), Friends of the Earth (FoE), and New Economics Foundation (NEF) have long argued that the vitality and sustainable development of small retail centres can be equated with the *diversity* and 'extra value that small, independent and genuinely local shops provide in terms of economic benefit, environmental distinctiveness and the social glue that holds communities together' (NEF, 2006). By extension, despite being viewed by these organizations/NGOs as highly fragile ecologies threatened by a 'supermarket onslaught' driven by corporate retailer responses to the 'town centres first' approach to planning policy, that diversity has also been regarded as potentially protective of small centres and high streets faced with the shock of economic crisis. Small centres otherwise can find themselves buffeted by wider corporate disinvestment decisions (e.g. the closures of Woolworths, Adams, MFI) - decisions taken at a considerable remove, sometimes without a strong local logic, but frequently with severe consequences for the functioning of the centre. The groups who subscribe to this view regard the corporate food retail entry into smaller centres and high streets which took place in the late 1990s and 2000s, and which was an inevitable consequence of the adoption and progressive strengthening of a '*town centres first*' approach to planning regulation, as uniformly destructive of the amenity of those centres/high streets and to be resisted to prevent further loss

In contrast there has been a growing body of academic opinion - represented in the work of Powe, Hart & Shaw (2004, 2008, 2009), Thomas Bromley (2002 2003), Wrigley et al (2010a) and reflected in statements by Government Departments - which has argued that corporate foodstores 'often play a vital role as anchor stores in maintaining the quality and range of shopping in smaller towns and district centres' (DoE, 1995), should be 'seen as a vital element in *sustainable development* plans' for those centres (Powe & Shaw, 2004, 407), and that corporate foodstore entry 'can act as a catalyst for further investment in those centres'

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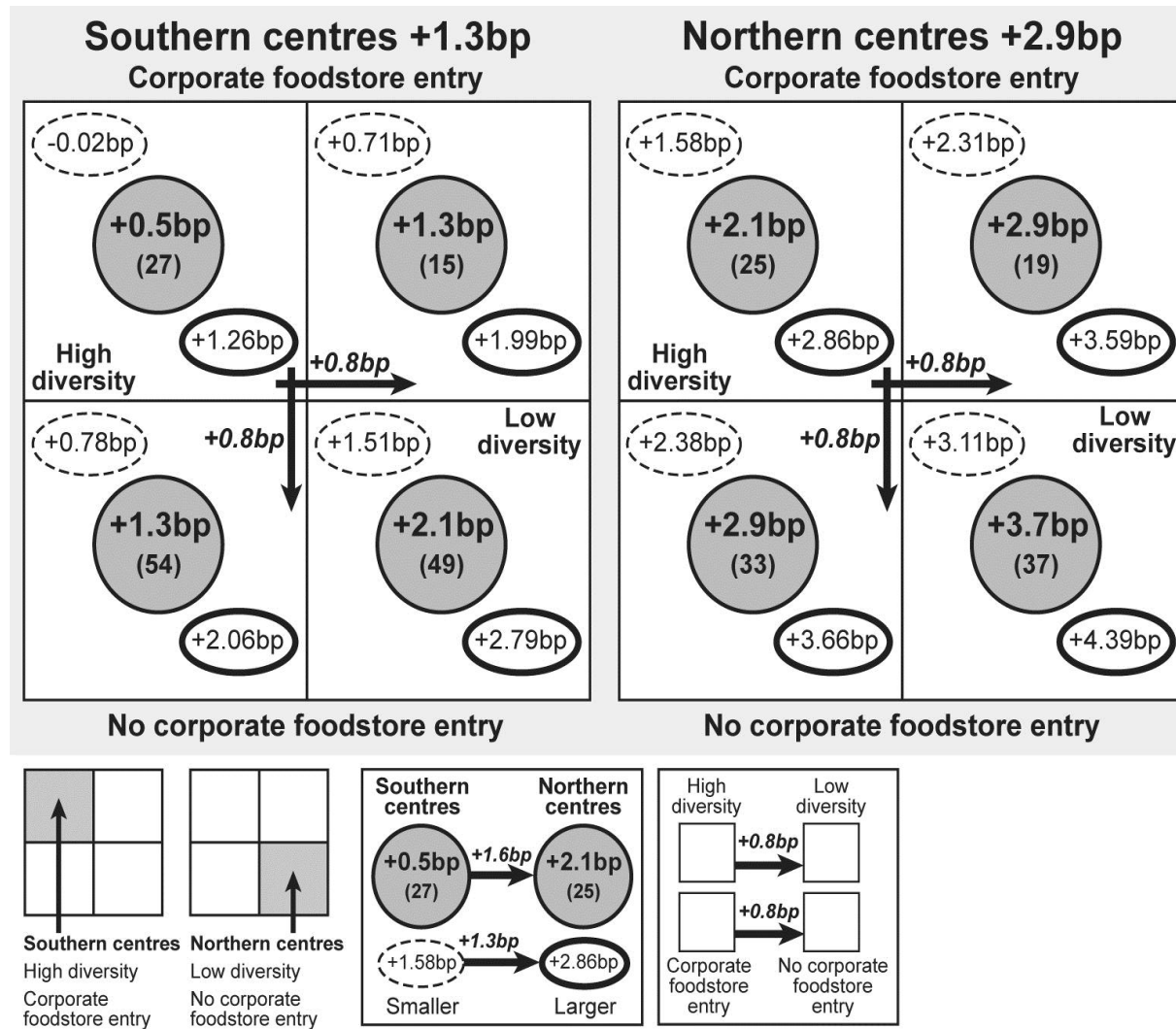
(DETR, 1998, 8). In this view, corporate foodstore entry confers a form of positive spatial externality on other retailers and service providers in the centre. The externality is articulated via the mechanisms of linked trips (Wrigley et al, 2010b); retention of expenditure which would otherwise have been lost to larger centres and distant out-of-centre superstores; and the generation of footfall and associated urban 'buzz' (Storper & Venables,, 2004) essential to the health of the centre.

Popular debate portrays these two views as polar opposites in terms of attempts to protect and/or enhance the vitality and viability of town centres and high streets. It is therefore of very considerable interest that both factors appear in the specification of, and reach conventional statistical significance levels within, the model of vacancy rate change reported in Table 1. Moreover, *both* factors are seen to be associated with better performance - that is to say, with smaller increases or reductions in vacancy rate. In simple terms, holding all other things constant, both factors appear to have been protective of the vitality and viability of centres/high streets or, in other words, to have been associated with enhanced resilience

To the best of our knowledge this is a novel finding of very considerable significance for policy debate in the UK. To help visualise what it implies, Figure 9 provides a graphical summary of the impacts of four of the explanatory variables in Table 1 on predicted values of vacancy rate change, the other three explanatory variables being set at their average values. 'Larger/smaller', 'high/low' etc values of four assessed explanatory variables are defined by setting them to their upper or lower quartile values. and the numbers in brackets in the centre (average size) circle of each quadrant are the number of cases in the sample falling into that quadrant/group.

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Figure 9 - Visualising the impacts of four of the explanatory variables in Table 1 on predicted values of vacancy rate change



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The detailed key under the diagram helps interpret what initially may seem a complex picture. What that key shows, is that beginning in the top left hand quadrant of the left side part of Figure 9, here the model in Table 1 provides predictions of the change in vacancy rate 'pre-crisis' to 'within-crisis' for 'southern' centres/high streets, with high levels of 'diversity' (measured in terms of the proportion of small independent specialist stores) in the 'pre-crisis' period, and which also experienced a planning policy compliant, in-centre or edge-of-centre, corporate foodstore entry. These are the better performing centres/high streets in our study, and within that group smaller centres are shown to have performed better than larger centres. In summary, therefore, what the model in Table 1 predicts for this quadrant is that In the case of 'southern', 'smaller' town centres/high streets, with high levels of 'diversity' in the 'pre-crisis' period, with corporate foodstore entry between the 'pre-' and 'within-crisis' surveys, and with the three other explanatory variables set at their sample average values, the absolute vacancy rate (M2) would have **decreased** by 0.02 basis points. If that specification is then changed slightly from one applicable to 'larger' rather 'smaller' centres/high streets, all other things remaining the same, Figure 9 shows the predicted vacancy rate would have changed from the small (-0.02 bp) decrease to a +1.26 basis points **increase**. Finally, if we average over smaller and larger size centres in the quadrant (i.e take an average size 'southern', 'diverse' centre/high street which experienced corporate foodstore entry), the predicted change in vacancy rate would be altered to an increase of +0.5 basis points.

Conversely in the lower right hand quadrant of the right side diagram, vacancy rate changes are displayed for what, on the same basis, the model predicts to be poorer performing centres/high streets. Here, in the case of 'northern', 'larger' centres/high streets, with 'low levels of diversity' in the pre-crisis period, and which did not experience corporate foodstore entry between the 'pre-' and within-crisis' surveys, the model predicts that the absolute vacancy rate would have increased by +4.39 basis points. That is to say, almost 5 basis points worse than the small improvement (-0.02bp) predicted for the best performing centre-type in Figure 9.

Examination of Figure 9 shows that, other things being equal, the effect of a centre/high street being located in 'northern' rather than 'southern' regions of England is to raise the predicted absolute change in vacancy rate by +1.6 basis points, and the effect of the centre/high street being 'larger' rather than 'smaller' is to raise the vacancy rate by +1.3bp. On the same basis, Figure 9 shows that not only do *both* factors - 'diversity' and corporate food store entry - appear in the specification of the model at conventional levels of significance, with both being associated with beneficial impacts on performance, but additionally that both factors have identical impacts on predicted changes in vacancy rates. The predicted rate is raised by +0.8 basis points if the centre/high street had 'low' rather than 'high' diversity in the pre-crisis period, and raised by an identical +0.8 bp if the centre/high street did not experience in-centre or edge-of-centre corporate foodstore entry.

Although some of the absolute differences predicted in this way between various levels - 'larger/smaller', 'high'/low' and so on - of the factors included in the model, might seem somewhat muted, that is simply a function of: the limited time which separates our pre-crisis to 'within-crisis' surveys: the two-sample-points design of the surveys; and the particularities of the 4-region sample available to us. Rather it is the qualitative picture that is more important – in particular our novel and policy-significant findings regarding the similarly protective effects of small-store diversity and corporate foodstore entry on the performance of our sample of more than 250 UK town centres and high streets adjusting to the shock of economic crisis.

Adaptively Resilient High Streets? – Evolutionary Trajectories and Policy Implications

The shock of global economic crisis, fragile consumer confidence, and the expectation and reality of deteriorating household incomes, has clearly had a significant impact on UK town centres and high streets. As discussed above, despite concerns about inconsistencies of approaches, all studies we are aware of find evidence of a 'gathering storm' signalled by progressively rising vacancy rates, hard hit 'comparison retail', and with the vulnerable

regional economies of 'northern' Britain demonstrating the least ability to support their 'pre-crisis' configurations of centres and high streets.

The value added by our study

The popular image of these developments portrayed by the media tends towards the cataclysmic – involving the emergence of highly unattractive high streets where sometimes more retail units are vacant than occupied, with a focus on the disappearance of iconic and cherished stores (e.g. Woolworths) and on the possible 'death' of traditional UK high street dominated by small independent specialist retailers. Set against this popular image, all the research we are aware of shows a more modest and differentiated picture. That picture is one of increasing retail and service unit vacancy rates but increases confined largely to the single-digit basis points range; in which some centres and high streets have performed strongly and against the trend or, alternatively, *relatively* better than the majority; and in which certain types of retail and services (e.g. telephones & accessories retailers, small food-retail-based convenience stores (independent as well as corporate), cafes and restaurants, etc) have increased their presence across the UK in general, or sometimes (e.g. delicatessens, bakers) more strongly in 'southern' regions, as a result of longer-term structural change in the industry. What we have been able to do via the research documented here is to add value to that picture, and to the essentially descriptive analysis on which it is based.

We have achieved that added value, not only by exploring a more clustered sample of centres/high streets with greater representation of smaller centres than that analysed by the LDC but also, crucially, via providing the theoretically-grounded multivariate statistical modelling notably not present in the research of commercial companies like LDC. Our analysis, whilst confirming the dimensions of UK high street decline documented by both the LDC and leading property-industry consultancies (progressively rising vacancy rates, differentially greater pressure on 'comparison' rather than 'convenience retail, a consistent

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north-south differential in the health of centres/high streets, and a more recent identification of weaker performance by larger centres) also provides findings which are not only novel but are also certain to surprise some of the groups contributing to public debate on these topics. Notably, our findings suggest that the ‘diversity’ of high streets conferred by greater representation of small independent specialist stores should **not** be viewed as the polar opposite of what has been argued to be the expenditure-retaining, further-investment-catalysing, vitality-enhancing, sustainable-development-promoting impacts of planning policy compliant corporate foodstore entry. Rather, in our sample **both** factors appear to have been associated with greater resilience of centres/high streets in the face of economic shock – indeed associated with an identical relative improvement. To our knowledge, this is the first occasion in which any empirical study (particularly one, such as ours, designed and executed to rigorous and transparent standards) has reported this finding, and it is clearly a finding which merits further investigation and replication across other samples.

Unpacking the adaptive capacity and resilience of town centres and high streets

Nevertheless, the consensus position of all available research (including our own) is that the scale of the shock which has been experienced by UK high streets - coming on top of the significant processes of ‘*substitution*’, ‘*complementarity*’, and ‘*modification*’ impacting high streets and particular types of retailer/service provider (music & film, books, computer hardware & software, travel agents) from the decade long progressive increases in online e-retail sales (Weltevreden, 2006,2007) - is such that ‘bounce back’ to previous configurations is unlikely. Moreover, there is a strong argument that seeking for a return to previous configurations is of itself undesirable - that high streets have always been dynamic and adaptive, have rarely evolved in smooth and incremental ways, and have constantly been reshaped by periodic economic and competitive shocks.

Rather we suggest that the focus should be placed on understanding the *adaptive capacity and resilience* that has enabled some UK town centres/high streets to perform both relatively (and in some cases, absolutely) better, despite macro-economic shock and

despite the ongoing and complexly interrelated forces of: online e-retail, a regulatory regime which has prioritised a 'town centres first' approach to retail development, and the rise of what has been termed 'convenience culture'. In this context, we draw on Martin (2011) who, more generally, has suggested that four interrelated dimensions are helpful in unpacking and understanding the resilience of the responses of local economies to macro-economic shock. Namely:

- *resistance* – or, conversely, the degree of fragility or vulnerability of such economies to macro-economic shock
- *recovery* - in particular its speed and extent plus the way it relates to the degree of resistance;
- *re-orientation* – the nature of reconfiguration and adaptation in response to macro-economic shock
- *renewal* - the extent to which economies resume their pre-shock growth path.

In this study, we have essentially concentrated on two of these dimensions – resistance and recovery. First, by offering new insights into the factors which have been associated with either protecting UK town centres/high streets or increasing their fragility during the economic crisis. Second, by extension, by considering what factors might play a role in the speed and extent of recovery of centres/high streets from the recessionary impacts of the crisis. What remains as a task for both future research and policy development is a better understanding of the nature and extent of *re-orientation* and *renewal* which is likely to characterise UK town centres/high streets during the post-economic crisis decade. That same task – together with formulation of policy instruments which might help ameliorate some of the most pressing of the problems perceived to afflict the post-crisis high street also lies at the heart of the UK Government's *Revitalising the High Street* initiative led by Mary Portas and launched by the Department for Business, Innovation and Skills on May 17 2011.

Evidence of evolutionary trajectories

Although most of that task lies ahead, it is our view that some indicators of the potential evolutionary trajectories of 'adaptively resilient' high streets are available. In that context, the analysis of entry and exit of small and specialist stores in over a thousand UK town

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centres and high streets during the early to mid 2000s conducted by the Competition Commission (2007), together with the parallel study conducted by the University of Southampton (Wrigley et al, 2009a), and aspects of Figures 5 and 6 above, are germane.

What the Commission's analysis essentially demonstrated was that entry of corporate supermarkets into one thousand plus centres/high streets was often accompanied by 'positive' (exit reducing/entry promoting), or at least 'non-detrimental', impacts on particular types of small stores. (Bakers, health food shops and independent convenience stores were positively impacted by supermarket entry with others, including delicatessens, falling into the no-clear pattern/non-detrimental impact category.) That finding - highly controversial for being at variance with received public opinion about uniformly negative impacts of supermarket entry - was then confirmed and extended by the parallel Southampton study which demonstrated that it applied particularly strongly in the then high growth part of the UK, 'London and Prospering Southern England'. In that region, butchers, delicatessens fishmongers, CTNs, and independent music & video shops joined the 'positively' impacted small store groups identified by the Commission.

What these findings implied, more widely, was that the small store sector was potentially able to adapt to what at the time (early to mid 2000s) was regarded as a significant external 'shock' - the competitive shock of the leading corporate food retailers returning to town centres/high streets they had largely moved away from over the previous 30 years (Guy, 2007; Wrigley,1998). Moreover, that adaptation was not merely defensive and negative. Rather, it was possible to conceive of new configurations of those centres/high streets evolving.

Reconfigured high streets – emerging visions

Central to those new configurations was the adaptation of small stores 'flexing' their offers and raising their levels of service to achieve complementarity to those provided by the corporate foodstore entrants. Those 'complementary-offer' small stores would then potentially be able to access, via the mechanism of 'linked trips' (Guy, 2007; Wrigley et al,

2010b), a share of the expenditure which previously would have leaked away from the centres/high streets but which would now be 'clawed back' as a result of the supermarket entry. In this way it was possible to conceive of an evolutionary trajectory towards a new vision of reconfigured town centres/high streets - retail centres in which adaptation centred on new mixes of small and specialist store types, and on the ranging and offers of those stores, provided symbiotic relationships with the new types of corporate in-centre or edge-of-centre foodstores.

One version of that vision - what might termed the '*high-growth Britain vision*' - was of rising numbers of artisanal bakers, butchers and fishmongers, complemented by town centre farmers markets, as the small and specialist retailer sector 'raised its game' to complement and also to re-challenge the corporate supermarket entrants. As a report in *The Independent* expressed it

'New bakers and butchers are opening up all over the country, ending a decades-long decline. Retail experts believe the resurgence reflects a growing demand for high-quality produce, from artisanal loaves to dry-aged beef ... Traditional shops have improved their game – retailers had to become as professional as the supermarkets. Butchers have realised they have a niche they can fill that supermarket's can't' (*Independent on Sunday*, 23 January, 2011).

The '*low growth Britain*' vision was of course, somewhat more muted – less artisan produce and more the tertiary brands and Asian-sourced non-food bargains of the rapidly expanding limited-range hard discounters and 'pound' shops - and empirically that was reflected in a significantly reduced number of categories of small stores which were found to be positively associated (in the sense of reduced exit or increased entry) with corporate foodstore entry in those areas of the UK (see Wrigley et al 2009a, p2077, for detail). However, in the more affluent '*Prospering Smaller Towns*' of 'northern England', Scotland, South Wales, and Northern Ireland, the vision of a diverse 'ecology' of complementary and revitalised small stores re-emerged and could again be supported by the findings of the Southampton study of entry and exit (Wrigley et al, 2009a, p2080).

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Our reading of the more dramatic ‘shock’ of global economic crisis, recession and fragile consumer confidence on the evolutionary trajectories of UK town centres and high streets is therefore that it damped down but did not eliminate the *re-orientation* processes underway as a consequence of the return of corporate food retailers to those centres and high streets. We see evidence supporting that in Figure 5 above which shows, in ‘southern’ regions, a continuation – albeit at a lower level – of similar trends to those observed in the early to mid 2000s. That is to say, in the ‘southern’ parts of our sample – and despite the problems of economic crisis, fragile consumer confidence, and recessionary impacts on household incomes – a continued robustness of bakers, delicatessens, health food shops, and independent convenience stores can be observed. Additionally, in Figure 6, the longer term trend towards a higher share of retail services – e.g. cafes and restaurants – is seen to continue.

As UK town centres and high streets gradually emerge, in the medium term, from the depths of their current crisis, we anticipate therefore that the evidence will show that they have *not* ‘bounced back’ in an ‘engineering resilience’ sense, but rather that they have resumed - albeit at different levels - their evolutionary trajectories of the pre-crisis period. That is to say we anticipate *renewal* of those trajectories, in the sense outlined by Martin (2011) and noted above. We acknowledge, of course, that the shock of economic crisis will have damped down and modified the *re-orientation* processes strongly underway prior to the unexpected shock of global crisis. Moreover, we suggest that an intuitive, if as yet unarticulated, sense of these developments and processes may already exist among leading analysts and stakeholders. For example, the Director of the Local Data Company is reported as observing similar trends towards small independent retailers providing complementary offers and higher service-levels.

‘Vulnerable businesses are disappearing and being replaced by service-based retailers offering something that cannot be provided online. There are more independents than multiples opening in affluent parts of the country or market towns’ (Matthew Hopkinson, Director LDC, quoted in Measure, 2011)

Policy implications and measures

The design of policy proposals and instruments which will speed recovery by identifying and removing barriers perceived to be damaging the performance of town centres/high streets, and by supporting those centres that have thrived despite the shock of economic crisis, is the critical task of the Government's *Revitalising the High Street* initiative. However, based on the evidence reported in this paper, it is a task which in our view is unlikely to be best achieved by attempting to reset town centres/high streets to their configurations before the partly regulatory-induced ('town centres first') and partly consumer-lifestyle-induced (convenience culture and on-line e-retail) re-configurations of the past decade. The rediscovery of the high street by the UK's leading food retailers which is now 15 years into its evolution is simply too entrenched, too important to the necessary 'raising of the game' of small and specialist retailers, and (despite what popular opinion might wish to believe) has too strong a consumer mandate, to be rolled back. Rather, the key to the leverage achievable by and success of any package of policy measures emerging from the High Street initiative will, in our view depend on working '*with the grain*' of evolutionary trajectories that were becoming clear before the shock of global economic crisis, fragile consumer confidence, and declining household real incomes impacted UK high streets. Our findings on the performance of a four-region sample of over 250 retail centres suggests that at the core of ***adaptively resilient*** centres/high streets is 'complementarity', raised levels of quality and service, and new forms of symbiotic relationship between small independent stores and corporate retailers.

That suggests - taking due account of the necessity to protect and enhance competition – the development of policy measures which promote innovation, creativity and upgrading of quality standards. For example: drawing lessons from analysis of centres which have thrived in difficult times; investment in 'good practice' guides; recognition of the '*local retail heroes*' whose skills can catalyse the upgrading of centres in which they operate; support of mentoring schemes (perhaps mediated through networks of leading universities), etc, together with encouragement of planning regulation to focus more proactively on the sustainable economic health of centres whilst simultaneously maintaining and protecting

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the beneficial effects of the widely supported 'town centres first' orientation. Finally, in the context of issues whose discussion has frequently been blighted by only the loosest connection to the evidence base, there should be commitment to grounding policy formulation in robust and verifiable analysis of what actually has underpinned and/or promoted the attractiveness and performance of UK high streets during a period of economic crisis. The research summarised in this paper seeks both to make a major contribution to knowledge, and to add value to policy debate, on exactly that basis.