

# **MARKETING STRATEGY AND SUPPLY CHAIN RELATIONS IN GROCERY RETAILING**

by

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## ABSTRACT

This submission for PhD by publication consists of a portfolio of nine peer reviewed and published papers. The research presented in the portfolio contributes to theory, knowledge and discussion in the area of retail marketing. The common theme of the papers is competition in grocery retailing, and specifically the way that retail marketing strategy and supply chain relations affects retail competition and outcomes for consumers.

While the nine papers share a common approach in how grocery retailers compete through pricing and product choices along with their trading terms with suppliers, each individual paper addresses a distinctive central question:

- How does pricing competition change in the wake of a major merger in the retail grocery sector?
- How do grocery retailers respond in their pricing, promotion and advertising to the onset of a macro-economic crisis?
- Do grocery retailers encourage excessive consumption of alcohol by under-shifting excise duty increases on cheap alcohol?
- Why do retailers use value size pricing and offer bargain prices on jumbo-sized sugary drinks that encourages harmful excessive consumption?
- Is retail buyer power over suppliers detrimental to competition?
- In what circumstances might the development and promotion of brands and private labels be deleterious to consumers' interests?
- How should competition authorities and practitioners assess the extent of competition between brands and private labels?
- How can the development of copycat private labels directly mimicking leading brands result in higher overall prices for consumers?
- Do retailers manipulate grocery prices to favour private labels over brands?

Beyond their academic research contribution, the findings and insights provided in the papers both individually and collectively have relevance to retailers, suppliers, consumers, regulators and policymakers in desiring to see an efficient, well-functioning and dynamic grocery retail sector.

*Key words:* Grocery retailing; marketing; pricing; supply chain; brand; private label

## **ACKNOWLEDGEMENTS**

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The PhD journey began in 2005 with support from Ian Davidson, then Director of Loughborough University Business School, to undertake research and register for a staff-based PhD. I am very grateful to Ian and other Business School colleagues for their assistance, encouragement and support.

My constant guide over the subsequent thirteen years has been my supervisor, co-author and friend, Jon Seaton, who has given me unstinting support to complete the PhD despite my other work priorities that provided endless obstacles, distractions and excuses. Working with Jon has been fun and enlightening, and I could not have wished for a more supportive, encouraging and endearing colleague.

I would also like to thank Cathy Hart as a co-supervisor and mentor for her guidance and expertise on the PhD by publication procedure in retail marketing.

The common theme and coherent whole of the research focuses on the dynamics of competition in UK grocery retailing, and this stems primarily from my participation in research related to three collaborative projects (two ESRC funded and one MRC funded), working with Mike Waterson, Paul Dobson and Jon Seaton. I have learnt much from the research expertise, wisdom and insights of Mike, Paul and Jon in participating on these projects and through working on our co-authored publications. I hope that we will continue to collaborate on research for many years to come.

Above all else, I wish to give special thanks to my family for their belief in my work: To my mother, who set me on my education journey; my husband, Paul, for his endless support and encouragement; my son, Piers, for his inspiration and motivation. I dedicate this PhD portfolio to them.

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## LIST OF SUBMITTED PUBLICATIONS

1. **Chakraborty, R.**, Dobson, P., Seaton, J., and Waterson, M. (2014). "Market Consolidation and Pricing Developments in Grocery Retailing: A Case Study," in *Analysis of Competition Policy and Sectoral Regulation*, Martin Peitz and Yossi Spiegel (eds.), Now Publishers, pp. 3-29, ISBN 978-981-4616-35-5
2. **Chakraborty, R.**, Dobson, P., Seaton, J., and Waterson, M. (2015). "Pricing in inflationary times: The penny drops." *Journal of Monetary Economics*, Vol. 76, pp. 71-86.
3. Ally, A., Meng, Y., **Chakraborty, R.**, Dobson, P., Seaton, J., Holmes, J., Angus, C., Guo, Y., Hill-McManus, D., Brennan, A., and Meier, P. (2014). "Alcohol tax pass-through across the product and price range: Do retailers treat cheap alcohol differently?" *Addiction*, Vol. 109, pp. 1994-2002.
4. Dobson, P., **Chakraborty, R.**, and Seaton, J. (2017). "Containing big soda: Countering inducements to buy large-size sugary drinks." *Journal of Business Research*, Vol. 75, pp. 185–191.
5. Dobson, P., and **Chakraborty, R.** (2008). "Buyer Power and Competition in the UK Groceries Market." *Antitrust Bulletin*, Vol. 53, pp. 333-368.
6. Dobson, P., and **Chakraborty, R.** (2009). "Private Labels and Branded Goods: Consumers' 'Horrors' and 'Heroes', in *Private Labels, Branded Goods and Competition Policy: The Changing Landscape of Retail Competition*, A. Ezzachi and U. Bernitz (eds.), Oxford University Press, pp. 99-124, ISBN ISBN-10: 0199559376.
7. Dobson, P., and **Chakraborty, R.** (2015). "Assessing Brand and Private Label Competition." *European Competition Law Review*, Vol. 36 (Issue 2), pp. 76-81.
8. Dobson, P., and **Chakraborty, R.** (2014). "How Do National Brands and Store Brands Compete?" Centre for Competition Policy Working Paper 14-7, University of East Anglia Repository.
9. **Chakraborty, R.** (2018). "Do Retailers Manipulate Prices to Favour Private Label over Brands?" Centre for Competition Policy Working Paper 18-2, University of East Anglia Repository.

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# Introductory Chapter: Overview, Research Context and Contribution of the Research Papers

## 1. Introduction

This submission for PhD by publication consists of a portfolio of nine peer reviewed and published papers. The research presented in the portfolio contributes to theory, knowledge and discussion in the area of retail marketing. The common theme of the papers is competition in grocery retailing, and specifically the way that retail marketing strategy and supply chain relations affects retail competition and outcomes for consumers. Through a combination of empirical, analytical and competitive assessment studies, the set of papers and with my retail marketing contribution provide novel insights that offer a deeper understanding of how retailers compete through pricing and product choices in the context of grocery retailing and food purchases made by consumers.

Table 1 (below) lists the nine research papers making up the portfolio, grouped under two headings. The first set of four papers relate to marketing strategy, and specifically the pricing behaviour of grocery retailers and food vendors. The first pair of papers (**Paper 1** and **Paper 2**) cover pricing of the full range of grocery products, in turn examining how market consolidation and the economic crisis that began in 2007/8 affected pricing behaviour in UK grocery retailing. The second pair of papers (**Paper 3** and **Paper 4**) examine pricing of specific grocery product categories: examining how taxation affects the pricing of products where there are public health concerns about excessive consumption, respectively of cheap alcohol and large-size sugary drinks. The second set of five



papers relate to supply chain relations and product choices for consumers. The first paper (**Paper 5**) examines the means by which grocery retailers can use their buyer power to dictate trading terms with suppliers. The remaining four papers (**Paper 6, Paper 7, Paper 8, and Paper 9**) examine analytically and empirically the consequences of the double-agent role that grocery retailers hold when serving as both customer and competitor to brand suppliers (selling nationally branded goods) in promoting their own store-branded private label goods as alternative product choices for consumers.<sup>1</sup>

The nine publications with my retail marketing contribution demonstrate, in different ways, how strategic decisions over pricing and product choices influence retail competition and affect outcomes for consumers. The research outputs that make up the portfolio collectively contribute to the understanding of the nature of competition and dynamics operating in the grocery industry and the interplay between retail competitors and their relations with suppliers. They build on the existing literature to make individual contributions that help extend understanding and knowledge as to the way that retail grocery markets operate and their impact on participants. Specifically, the papers help with understanding how competitive interaction can influence marketing decisions, principally over prices and product choices offered to consumers. The findings and insights provided in the papers have relevance to retailers, suppliers, consumers, regulators and society in desiring to see an efficient, well-functioning and dynamic grocery retail sector.

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<sup>1</sup> As a definition, “private label” products encompass all merchandise sold under a retailer's brand. That brand can be the retailer's own name or a name created exclusively by that retailer.

**Table 1: Portfolio of papers by literature themes**

	<b><i>Marketing Strategy and Pricing Behaviour in Grocery Retailing</i></b>
<b>Paper 1</b>	<b>Chakraborty, R.</b> , Dobson, P., Seaton, J., and Waterson, M. (2014). "Market Consolidation and Pricing Developments in Grocery Retailing: A Case Study," in Analysis of Competition Policy and Sectoral Regulation, Martin Peitz and Yossi Spiegel (eds.), Now Publishers, pp. 3-29, ISBN 978-981-4616-35-5 (peer reviewed book chapter) (25% contribution)
<b>Paper 2</b>	<b>Chakraborty, R.</b> , Dobson, P., Seaton, J., and Waterson, M. (2015). "Pricing in inflationary times: The penny drops." Journal of Monetary Economics, Vol. 76, pp. 71-86 (peer reviewed journal article) (25% contribution)
<b>Paper 3</b>	Ally, A., Meng, Y., <b>Chakraborty, R.</b> , Dobson, P., Seaton, J., Holmes, J., Angus, C., Guo, Y., Hill-McManus, D., Brennan, A., and Meier, P. (2014). "Alcohol tax pass-through across the product and price range: Do retailers treat cheap alcohol differently?" Addiction, Vol. 109, pp. 1994-2002 (peer reviewed journal article) (20% contribution)
<b>Paper 4</b>	Dobson, P., <b>Chakraborty, R.</b> , and Seaton, J. (2017). "Containing big soda: Countering inducements to buy large-size sugary drinks." Journal of Business Research, Vol. 75, pp. 185–191 (peer reviewed journal article) (30% contribution)
	<b><i>Supply Chain Relations and Product Choice in Grocery Retailing</i></b>
<b>Paper 5</b>	Dobson, P., and <b>Chakraborty, R.</b> (2008). "Buyer Power and Competition in the UK Groceries Market." Antitrust Bulletin, Vol. 53, pp. 333-368 (peer reviewed journal article) (50% contribution)
<b>Paper 6</b>	Dobson, P., and <b>Chakraborty, R.</b> (2009). "Private Labels and Branded Goods: Consumers' 'Horrors' and 'Heroes', in Private Labels, Branded Goods and Competition Policy: The Changing Landscape of Retail Competition, A. Ezrachi and U. Bernitz (eds.), Oxford University Press, pp. 99-124, ISBN ISBN-10: 0199559376 (peer reviewed book chapter) (50% contribution)
<b>Paper 7</b>	Dobson, P., and <b>Chakraborty, R.</b> (2015). "Assessing Brand and Private Label Competition." European Competition Law Review, Vol. 36 (Issue 2), pp. 76-81 (peer reviewed journal article) (50% contribution)
<b>Paper 8</b>	Dobson, P., and <b>Chakraborty, R.</b> (2014). "How Do National Brands and Store Brands Compete?" Centre for Competition Policy Working Paper 14-7, UEA Repository (Working paper) (Published) (50% contribution)
<b>Paper 9</b>	<b>Chakraborty, R.</b> (2018). "Do Retailers Manipulate Prices to Favour Private Label over Brands?" Centre for Competition Policy Working Paper 18-2, UEA Repository (Working paper) (Published) (100% contribution)

This introductory chapter provides a commentary on the set of papers to explain their background, common theme and linkages, context in the literature, methodological approaches, research contribution, limitations, impact, and fit with an ongoing research agenda.

The organisation of the chapter is as follows. The next section covers the background to the research areas. Section 3 outlines the relevant literature and theoretical context for the portfolio. Section 4 discusses the research approaches and findings of the portfolio. Section 5 concludes the chapter by examining the contributions and limitations of the papers in the context of an ongoing research agenda that provides scope and opportunity for further research contributions.

## **2. Background to the research areas**

The nine papers represent contributions to the literature on retail marketing applied to grocery retailing. The focus of the papers is on the prices and product choices that grocery retailers present to consumers. The subject matter is highly pertinent in view of grocery shopping being an activity that the vast majority of households undertake and upon which a sizeable portion of their income is spent. Accordingly, having the assurance that prices and product choices meet consumers' needs and provide them with good value is economically and socially important – not least since food is essential to life and healthy eating is essential to good public health. Moreover, the subject matter is highly topical in view of continuing concerns about retailers' market power and influence that can lead to distorted competition in both grocery retailing and grocery supply markets. Indeed, the UK competition authorities have undertaken a string of inquiries examining different competition concerns about the UK grocery retailing over the last two decades – e.g. CC (2000; 2003; 2008) and CMA (2015). Thus, both in respect of the economic and social significance of the sector and concerns about its performance, the research analysis and findings in the nine papers are both pertinent and topical to understanding what competition delivers in grocery retailing for the greater good of society.

This section explains the connections between the research and the developments that have been taking place in grocery retailing over the last two decades. These developments have inspired and informed the research, and equally the research findings offer insights on these developments – so it is a two-way road. The focus here is on three specific developments: (i) competition and consolidation in grocery retailing; (ii) marketing strategy and pricing behaviour in

grocery retailing; and (iii) supply chain relations and product choice in grocery retailing. The remainder of this section examines each of these developments in turn.

## ***2.1 Competition and consolidation in grocery retailing***

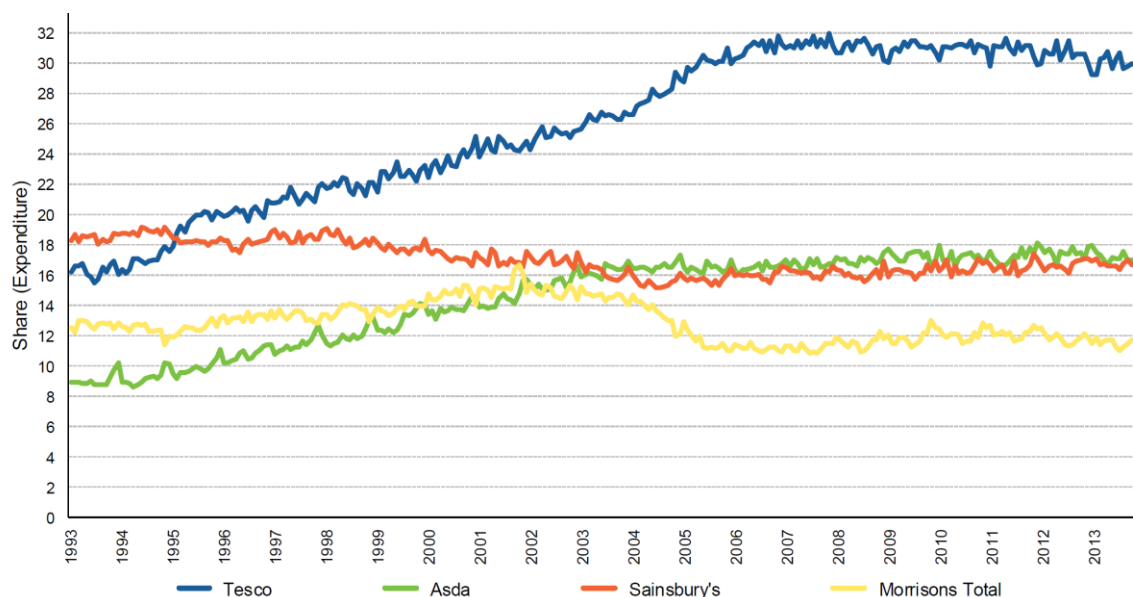
The advent of supermarkets in the post-war period heralded a move towards increasing concentration in grocery retailing around the world, as retail chains grew at the expense of smaller independent retailers. In the UK, this concentration led to a handful of very large retail chains controlling most of the sales through supermarkets. By 2000, the Competition Commission (CC 2000) reported that the leading 13 retailers controlled over 90% of sales through supermarkets (defined as having retail floor space exceeding 600 sq m). Subsequently, there was further consolidation in the sector. In 2004, the merger between Morrisons and Safeway established a dominant “Big 4” group of grocery retailers: Tesco, Asda (owned by Walmart), Sainsbury’s and Morrisons. Ongoing concerns about this oligopoly group controlling two-thirds of all UK grocery sales and three-quarters of sales through supermarkets led to a further sector investigation by the Competition Commission (CC 2008). Since then there have been various smaller retailer mergers, but most activity has been in the convenience-store sector, where Tesco and Sainsbury’s acquired and developed large numbers of small stores to complement their existing network of supermarkets. Nevertheless, in the last few years, new competition has emerged as German hard discounters Aldi and Lidl have greatly expanded their store networks to compete aggressively on price with the mainstream supermarket

retailers. The future may see yet further new competition as online grocery develops and new entrants like Amazon Fresh make inroads in terms of competing with the existing online retailers, which along with the large supermarket operators (notably Tesco, Asda, Sainsbury's, Morrisons and Waitrose) includes online grocery retail specialists like Ocado.

In terms of the analysis in the nine papers, most of the focus is on the Big 4 mainstream grocery retailers, and particularly their domination of the market for one-stop grocery shoppers (i.e. consumers seeking to do a large main shopping trip whereby they purchase most of their weekly grocery needs in one go). As large basket shoppers, these consumers represent the largest and most lucrative segment of the sector and their needs are predominantly met by shopping at superstores (with retail store space greater than 1500 square metres) selling in excess of 20,000 product lines. The Big 4 control most of these stores and the only other major superstore retailers present operate differently with an upmarket positioning (like Waitrose and Marks & Spencer) or limited product lines (like Iceland, Aldi and Lidl). Accordingly, the nature of competition amongst the Big 4 takes on critical importance given their overall dominance of the sector and near complete dominance of the market for one-stop grocery shopping.

Four of the nine papers (**Paper 1**, **Paper 2**, **Paper 3** and **Paper 9**) undertake detailed analysis of the pricing used by the Big 4 retailers or at least the largest three retailers (Tesco, Asda and Sainsbury's). The timeframe for these empirical studies spans 2003 to 2012. Figure 1 shows (below) the market shares of the Big 4 retailers over the longer period, from 1993 through to 2014. Both Tesco and Asda nearly doubled their market shares over the twenty-year period shown, while Sainsbury's declined slightly and Morrisons/Safeway evened out over the period.

**Figure 1: Long-term market shares of leading British grocery retailers (1993-2014)**



Source: Kantar Worldpanel (shares based on consumer panel till roll data)

Note: Morrisons Total refers to the combination of Morrisons and Safeway stores (which merged in March 2004)

**Paper 1** considers the impact of concentration changes on competition by examining how the 2004 Morrisons/Safeway merger affected price competition amongst the Big 4 in the subsequent three years. However, this period predated the biggest sector-impacting event in that decade, which was the combination of the Financial Crisis and rampant global food price inflation that hit the sector in 2007/8. While food price inflation subsided relatively quickly, the Financial Crisis led to a prolonged period of economic austerity and recession in the UK, which undermined consumer spending and thus posed a major challenge to retailers keen to maintain sales and profits. **Paper 2** examines how the three biggest retailers responded to the economic crisis, showing how their pricing behaviour changed to mask the extent of basket price rises and so helped them ride out the

economic storm relatively well. **Paper 8** highlights how the onset of the economic crisis affected differently the prices of branded and private label goods.

## ***2.2 Marketing strategy and pricing behaviour in grocery retailing***

The Big 4 retailers have much in common beyond their shared dominance of the retail grocery sector (CC 2008). Firstly, they are all national operators, so their store networks exist right across Britain and they compete with each directly in most local markets. Secondly, the bulk of their sales come from operating superstores selling broadly similar and comparative product lines. Thirdly, they continuously monitor and compare each other on prices (as witnessed through their comparative advertising). Fourthly, and importantly for researching the pricing studies and data gathering, they all operate with national pricing (i.e. the same product price applies across their entire superstore network for the whole country).

The combination of these four features mean that the retailers compete with each other directly and so we should expect their prices to be close and to observe them adopting similar pricing behaviour. **Paper 1** highlights how the Morrisons/Safeway merger resulted in closer price alignment amongst the Big 4 retailers. However, **Paper 2** and **Paper 8** show the effect of food inflation and the economic crisis was to reduce price alignment, resulting in greater price dispersion. In particular, these latter two papers highlight how the retailers used a snowstorm of penny price cuts combined with numerous temporary price discounts to mask rising prices, but which in turn had the effect of reducing price matching in the market. The highly detailed and disaggregated nature of the



pricing studies reveals new insights on grocery pricing that previous studies (which are predominantly US based) had not identified, notably on the extent of pricing flexibility and the extent of item-by-item price matching across retailers.

However, beyond these market-wide effects, there is also interest in the pricing of particular products and the way that retailers behave in setting prices. For example, **Paper 3** examines the pricing of alcoholic beverages and specifically the way that retailers pass on excise duty and VAT increases. The empirical study reveals that taxes are under-shifted on cheap alcohol. This finding poses a public health concern if it encourages excessive consumption of cheap alcohol and suggests that policymakers might be better to set minimum prices on alcohol to restrict consumption rather than rely on duty increases. Indeed, this is a policy move that the Scottish government is introducing in May 2018.<sup>2</sup>

In contrast, **Paper 4** provides a theoretical contribution, examining why retailers might use “value size pricing” to provide large size sugary drinks with low unit prices while selling small size sugary drinks with high unit prices. This is also an important policy topic in view of the imminent introduction in April 2018 of a Soft Drinks Industry Levy that will tax sugary drinks according to their sugar content. The expectation is that this tax will raise £520m in its first year operation for the Exchequer.<sup>3</sup> This paper provides important theoretical reasoning for why the levy as an excise tax is likely to be more effective than an equivalent sales tax (which some other countries have used instead).

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<sup>2</sup> For details, see <http://www.gov.scot/Topics/Health/Services/Alcohol/minimum-pricing> (accessed 4/1/2018).

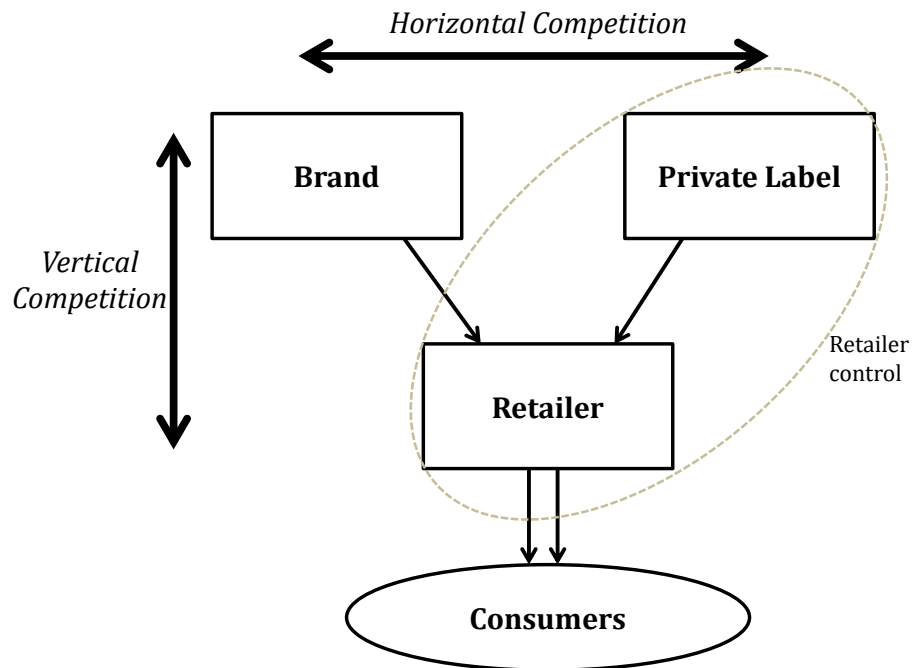
<sup>3</sup> For details, see <https://www.gov.uk/government/publications/soft-drinks-industry-levy/soft-drinks-industry-levy> (accessed 4/1/2018).

### ***2.3 Supply chain relations and product choice in grocery retailing***

Oligopolistic retailers controlling the bulk of retail sales might not just have market power in selling products (to raise retail prices and harm consumer welfare) but also in buying them (to lower supply prices and harm supplier welfare). The issue of retailer buyer power came to the fore in the Competition Commission enquiry in 2000 (CC 2000). Buyer power can manifest itself either in terms of suppressing prices paid to suppliers or imposing contractual terms on suppliers (called vertical restraints) that favour retailers directly (e.g. through suppliers paying shelf space fees) or indirectly (e.g. by denying a rival access to the supplier). **Paper 5** reviews the evidence on buyer power from the Competition Commission's inquiries in 2000 and its then ongoing enquiry in 2008 (CC 2008).

A particularly contentious issue regarding buyer power is how grocery retailers treat suppliers of branded goods when the retailers are promoting their own copycat private label goods as alternatives for consumers. In particular, for a brand producer this means that the retailer represents both its customer and its competitor. The resulting "double-agent" role that the retailer holds means that the brand producer faces both vertical competition and horizontal competition in terms of its relationship with the retailer. Figure 2 depicts this relationship. Here, private label provides a means of bargaining leverage for the retailer over the brand producer (by providing a credible disagreement option) as well as the opportunity to earn high margins on the private label by free-riding on the brand's marketing efforts. The result is that the brand producer has to offer more to gain shelf space (e.g. paying "pay to stay" fees or funding price promotions) but equally will feel that the copycat private labels undermine its intellectual property rights by freeriding on its brand investments.

**Figure 2: Supply Chain Competition and the Double-Agent Relationship**



Source: **Paper 6** and **Paper 7**

The double-agent relationship raises both competition policy and intellectual property rights policy concerns. Four of the papers consider these policy concerns in detail. **Paper 6** shows the positive and negative sides of competition between branded goods and lookalike private labels. **Paper 7** discusses the nature of their competitive relationship, suggesting how to conduct a competitive assessment as a guide for competition authorities and practitioners. **Paper 8** provides detailed analytical modelling of the vertical and horizontal competition aspects, showing the market conditions under which private label can act to reduce consumer welfare by raising average prices. Finally, **Paper 9** provides empirical evidence on the pricing relationship between matched pairs of branded and private-label equivalent goods, showing the extent to which the Big 4 retailers treat these two types of goods differently in their pricing behaviour.

### **3. Literature and theoretical context for the portfolio**

The purpose of this section is to provide an overview of the relevant themes from the literature, which underpin this PhD portfolio and, in so doing, highlight the important gaps within this body of literature. The portfolio of papers resides in the broad area of retail marketing and supply chain relations. Each of the papers contains its own literature review for theoretical context, but the purpose of this section is to draw together the three main research themes spanning the nine papers. Specifically, the first literature theme examines how powerful retailers dictate choices to consumers in terms of prices and product offers when competition is imperfect and consumers have limited options to shop around to secure the best value. The second research theme examines how powerful retailers dictate trading terms to suppliers and control access to their stores and then on to consumers in their gatekeeper role. The third research theme examines how powerful retailers develop private label goods to mimic branded goods which provide retailers with bargaining leverage over brand producers whilst also taking sales away from brand producers by favouring sales of high-margin private label goods that free ride on the marketing investments made by brand producers.

#### ***3.1 Retailers as choice controllers: dictating product offers to consumers***

Concern about the market power of retailers controlling retail markets and dictating prices and product choices to consumers has a long history. The issue of retailer power first came to the fore in the United States in the 1920s and 1930s with the rise of the Atlantic & Pacific (“A&P”) chain, which grew from 650 outlets in

1919 to 15,700 outlets by 1930 (Tedlow 1990). At the same time, other retail chains, like Kroeger, American Stores, Safeway and First National, grew rapidly such that by 1930 the top five chains controlled over a quarter of national grocery sales (Ellickson 2016). Policymakers concern about the growing power of these chains led to the Robinson-Patman Act of 1936 and other anti-trust measures to curtail the power of retail chains and prevent them using their size to negotiate more favourable terms over smaller retailers (Adelman 1959). Retail power did not re-emerge as a major concern in the US until the rise of Walmart in 1990s and the growth of other large retail chains, where the national share of the top four US retailers rapidly increased from 17% in 1995 to 29% by 2000 and on to 36% by 2005 (Ellickson 2016).

In the UK and elsewhere in Europe, national-level market concentration in grocery retailing had steadily increased over the 1980s and 1990s (Clarke et al. 2002; Burt and Sparks 2003; Dobson et al. 2003). This gave rise to a growing concern that retailers might be able to exploit their selling power to raise prices to consumers and control terms with suppliers (Dobson and Waterson 1999). In particular, the concern was that as retail markets became more concentrated then consumers would face reduced choice of where to shop which would in turn allow retailers to exploit their market power by raising prices. A number of competition authority investigations had examined this matter, identifying a particular concern about high concentration in local markets allowing retailers to raise prices (e.g. CC 2000; 2003; 2008). Smith (2004; 2006) provides detailed econometric evidence of how higher prices result from the restriction of consumer choice at the local level. Studies examining the effects on local pricing following retail mergers in other countries provide similar findings showing a positive association between

raised local concentration and higher prices (Hosken et al. 2012; Alain et al. 2017). However, beyond showing a link between higher concentration and high prices, these sector inquiries and econometric analyses do not resolve the means by which retailers take advantage of reduced competition to raise prices, and specifically the way their pricing strategies adapt to exploit their increasing market power. These matters are core contributions of **Paper 1**, **Paper 2** and **Paper 9**.

The marketing literature on pricing strategy focuses on differences between two main pricing strategies in grocery retailing: stable “everyday low prices” (“EDLP”) and variable “high-low” (“HiLo”) promotional pricing. Ellickson and Misra (2008) chart how these two strategies, along with a hybrid strategy combining EDLP and HiLo pricing, have come to characterise and distinguish US supermarket retailers. Bolton and Shankar (2003) and other researchers view pricing strategies less as fixed points and dichotomous choices and more as being positions on a broad spectrum (Fassnacht and El Hussein 2013). Even so, an important characteristic that distinguishes EDLP and HiLo retailing is basket size and composition: where EDLP appeals more to large basket shoppers and HiLo appeals more to small basket shoppers (Bell and Latin 1998).

In the UK, though, the differences on pricing strategy amongst the top retailers are less stark. The Big 4 retailers adopt similar pricing strategies, which tend to be hybrid in nature, but leaning more towards EDLP in the case of Asda (owned by Walmart) and more towards HiLo in the case of Sainsbury’s, with Tesco and Morrisons somewhere in between (CC 2000; 2008). Moreover, former extreme HiLo promotional retailers like Safeway and Somerfield have exited the market, respectively taken over by Morrisons and the Co-op (which now focuses exclusively on convenience store retailing having sold off its large stores). A key

contribution of **Paper 1**, **Paper 2** and **Paper 9** is to show just how similarly the Big 4 retailers price, especially after Morrisons acquired Safeway in 2004. In particular, the papers show that with the UK retailers using national pricing (as opposed to local pricing which is prevalent in other countries like the US and France), their close monitoring of each other's prices results in generally close pricing alignment.

US studies point to most price variation in grocery retailing arising from temporary price discounts (Hosken and Reiffen 2004; 2007; Chen et al. 2008) and prices tend otherwise to be sticky (and so not always adjusting to cost changes) (Nakamura and Steinsson 2008; 2013). A key contribution of **Paper 1**, **Paper 2** and **Paper 9** is to show how flexible are prices in the UK, particularly amongst branded goods, where in addition to frequent large temporary price reductions there are also regular tiny price adjustments, notably price cuts of a single penny.

US studies also point to price dispersion in retail grocery markets (i.e. significant variation in prices across different retailers) (Kaplan and Menzio 2015). In contrast, a key contribution of **Paper 1**, **Paper 2** and **Paper 9** is to show how closely the major UK retailers price grocery items, particularly for branded goods.

The picture of retail competition that emerges through these three papers is that the major UK grocery retailers adopt very similar pricing behaviour, but a persistent concern is that their close monitoring of each other's prices may mean that they avoid unduly intense price competition. Thus media talk of the UK retailers fighting price wars may be more about promotional price discounting (Hickman 2009; Wallop 2014), rather than genuine price wars witnessed in other countries (e.g. van Heerde et al. 2008).

Beyond general price levels, academic research has examined particular pricing tactics used by retailers to extract more value (i.e. consumer surplus) from sales. In some cases, this is about segmenting consumers and setting prices that are closer to consumers' willingness to pay for products. *Direct* price discrimination (charging different prices to different customers for the same good) offers one means. For example, this could apply with charging different prices in different stores because competition is less in some geographical markets than in others (Dobson and Waterson 2005). However, the move to national pricing in the UK has ruled out this concern about the anti-competitive nature of "local price flexing" (CC 2000; 2008).

Nevertheless, even if direct discrimination is not possible, retailers might still be able to use *indirect* methods of price discrimination by increasing product choice and then offering different prices to appeal to different consumer segments. For instance, offering both brands and private label equivalents could serve this purpose (Soberman and Parker 2006; Gabrielsen and Sørgaard 2007, Perloff et al. 2012). **Paper 8** develops the theory on this subject while **Paper 9** provides empirical evidence. Alternatively, retailers might offer different product sizes to segment consumers with nonlinear pricing (Dolan 1987; Cohen 2008; Dobson and Gerstner 2010). **Paper 4** develops a particular application of this theory on the pricing of sugary drinks to show why retailers use "value size pricing". This pricing tactic entails charging a low unit price on a large size and a high unit price on a small size, such that the overall price of the former is only slightly higher than the latter – thereby providing an incentive for value-conscious consumers to supersize their sugary drinks.



Additionally, retailers may have flexibility in how they price their retail assortments, choosing to set high margins on some products and lower margins on other products in terms of multiproduct pricing (Bliss 1988; Giuliotti and Waterson 1997; Rhodes 2014; Thomassen et al. 2017). In particular, price rivalry might be more intense on some products because consumers seeking to buy those products are more price conscious and willing to shop around for the best prices, even to the point where they might represent “loss leaders” (Johnson 2017). This can mean that retailers might not pass through cost changes on to retail prices evenly across products (Weyl and Fabinger 2013; Hong and Li 2017). **Paper 3** provides empirical evidence on this matter in respect of alcohol pricing, showing that grocery retailers undershift tax increases on cheap alcohol, which has a public health concern because it could encourage excessive alcohol consumption.

### ***3.2 Retailers as gatekeepers: dictating terms and access for suppliers***

As well as concerns about how retailers with market power might raise and distort prices to consumers for the purposes of earning higher profits, concerns also apply to retailers’ power as buyers over suppliers. In principle, supply chain management should be a collaborative partnership with suppliers and retailers working well together to deliver consumers good quality products at low prices through efficient operations (Dani 2015). In practice, while necessarily collaborative, a tension exists between suppliers and retailers over the division of profits and suppliers’ and retailers’ interests might not be exactly aligned. Specifically, retailers might wish to exploit their positions as “gatekeepers” in

providing suppliers with access to their supermarket shelves but only if offered favourable terms (Grimes 2005). Here, buying power may arise in the form of suppliers offering supply price discounts or paying fees (e.g. access fees, slotting allowances, or pay-to-stay fees) to gain access to retail stores (Dobson and Waterson 1999; Bloom et al. 2000). Retail buyer power becomes a policy concern when it can restrict, distort or prevent competition at the retail or supply level (Clarke et al. 2002; Dobson 2005; Carstensen 2017).

The UK Competition Commission's 2000 inquiry revealed a positive relationship between retailer size and the level of discounts obtained from suppliers (CC 2000). The inquiry also showed the extent of retailer imposed vertical restraints on suppliers, many of which could distort competition (e.g. by reducing supplier efficiency and putting smaller retailers at a competitive disadvantage) and have an adverse effect on consumer welfare (when resulting in reduced product choice, quality or innovation or higher retail prices). The Competition Commission's inquiry led to the Supermarkets Code of Practice (SCOP) in 2001, intended to curb anticompetitive retailer buyer power. However, concerns about retailer buyer power continued, and the Competition Commission undertook a further sector inquiry during 2006-8. **Paper 5** reviews the evidence and arguments on the effects of buyer power in UK grocery retailing, pre-empting the findings of the Commission's final report released in April 2008 (CC 2008).

### ***3.3 Retailers as double agents: leveraging private label for advantage***

While retailers may possess both selling and buying power, brand producers may still have market power of their own when consumers strongly demand their

goods. When a brand achieves the iconic status of a “must stock product” (i.e. brand loyalty is so strong that consumers will not buy an alternative product) then retailers can ill afford not to trade with the brand producer.<sup>4</sup> This gives the brand producer bargaining power over a retailer. However, if the retailer can encourage shoppers to switch to buying private label instead then it weakens the brand producer’s bargaining power while at the same time presents an opportunity to market its own good, earning the retailer a high margin. In this context, the retailer is a *double agent* for the brand producer in serving as both its customer and competitor (Bell et al. 1997; Dobson 1998, 2005).

The literature on private labels and their competition with brands has developed rapidly over the last two decades, as numerous literature surveys show, e.g. Bergès-Sennou et al. (2004), Sayman and Raju (2007), Pauwels and Srinivasan (2009), Sethuraman (2009), Hyman et al. (2010), Sethuraman and Raju (2012) and Sethuraman and Gielens (2014). Four of the nine papers in the PhD portfolio contribute to this literature in distinctive and complementary ways.

First, **Paper 6** contrasts examples where brands and private can be a positive competitive force in benefitting consumers against situations where they represent an anticompetitive force that harms consumers. To emphasise the stark differences, the paper portrays the examples in terms of ‘horrors’ and ‘heroes’, with deliberately chosen names and characterisations that are larger

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<sup>4</sup> As an illustration, in assessing the merger between Procter & Gamble (P&G) and Gillette in 2005, the European Commission (Case No. COMP/M.3732) identified the two respective companies as having a total of 21 “must stock brands”. For P&G the brands were Ariel, Pringles, Dreft, Olay, Tampax, Always, Pampers, Swifter, Fairy, Head & Shoulders, Pantene, Wella, Iams and Eukanuba, and for Gillette they were Oral B, Gillette razors and blades, Duracell, and Braun. See [http://ec.europa.eu/competition/mergers/cases/decisions/m3732\\_20050715\\_20212\\_en.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m3732_20050715_20212_en.pdf) (accessed 6/1/2018).

than life. The ‘horrors’ are monsters from B-movie horror films. The ‘heroes’ come straight out of Hollywood action and adventure movies. Table 2 summarises them.

**Table 2: Brand and private label ‘horrors’ and ‘heroes’**

	Manufacturer brands		Retailer private labels	
	<i>Character</i>	<i>Features</i>	<i>Character</i>	<i>Features</i>
<b>‘Horrors’</b> <i>Consumers’ nightmares</i>	‘The blob’	Smothers competition, restricts innovation and deters entry	‘The blood sucker’	Bleeds dry innovative effort by free riding on brand investments
	‘The giant octopus’	Tentacles everywhere to leverage portfolio power	‘The flesh eater’	Slowly devours brands by undermining them in-store
	‘The virus’	Proliferates brand variants to spread its category control	‘The body snatcher’	Copies then replaces brands with look-alike products
<b>‘Heroes’</b> <i>Consumers’ sweet dreams</i>	‘The protector’	Offers quality, value, consistency and trustworthiness	‘The underdog’	Takes on the strongest brands to challenge their dominance
	‘The pioneer’	Innovates to provide new or improved products for consumers	‘The adventurer’	Opens up new product categories with new ranges of products
	‘The equalizer’	Enters from adjacent markets to neutralize existing market power	‘The revolutionary’	Challenges brands by offering real value and choice for the masses

Source: **Paper 6**

Second, referring to the vertical/horizontal competition relationship shown in Figure 2 (above), **Paper 7** discusses and explains how price and non-price competition interact through the mixed vertical-horizontal relationships arising from the presence of private label. The paper offers guidance to researchers and

practitioners undertaking competitive assessments in considering the implications of these relationships for assessing competition and particularly the care required with market definition analysis.

Third, **Paper 8** uses analytical modelling to address a fundamental question about how brands and private labels compete. Even though consumers might view them as *substitutes*, the two types of goods represent *complements* to the retailer selling them, because each of them may appeal distinctively to different consumer segments so they each have a place in the retailers' product assortment. However, this in turn may mean that the way the retailer prices them is more about segmenting consumers rather than pitting the products directly against each other in terms of their prices. The upshot is that consumers might not see the benefits of lower prices through head-to-head competition between brands and private labels. However, relaxing public policy against resale price maintenance (RPM) and strengthening intellectual property rights laws against parasitic copycatting might strengthen a brand producer's bargaining position, but the modelling also shows that these moves might also benefit consumers by stimulating greater head-to-head pricing competition.

Fourth, **Paper 9** provides empirical evidence on whether retailers manipulate retail prices on brands to favour private label. The evidence shows that while retailers treat the pricing of branded goods differently to those of equivalent me-too private labels, the pricing appears aimed more at segmenting consumers, and using the two product types as a combination, rather than deliberately undermining brands. The paper shows how the economic crisis in 2008 exacerbated pricing differences, principally as retailers struggled in difficult market circumstances to maintain sales levels and resorted to using promotional pricing.

## 4. Research approaches and contributions of the portfolio

The nine papers in the portfolio represent a blend of empirical and analytical contributions along with competitive assessment analysis for examining public policy interventions. This section outlines the research approaches in the papers and linkages in terms of theoretical context and the empirical methods used. The section first covers the empirical analysis used (which applies to six of the nine papers), then the formal analytical modelling analysis used (which applies to two papers), and finally the competitive assessment and policy analysis used (which applies centrally to one paper but used in conjunction with other analyses in the other eight papers).

To provide an overview, and help serve as a reading guide to this section, Table 3 summarises the research approaches and study methods for each paper.

**Table 3: Research approaches and study methods**

<i>Paper #</i>	<i>Topic</i>	<i>Marketing variable</i>	<i>Approach</i>	<i>Method</i>	<i>Data type</i>	<i>Data sources</i>
Paper 1	Market consolidation	Retail prices	Empirical	Statistics	Balanced panel data	Tesco Price Check
Paper 2	Price changes	Retail prices	Empirical	Statistics and econometrics	Balanced panel data	Tesco Price Check & mySupermarket
Paper 3	Alcohol tax pass-through	Retail prices	Empirical	Econometrics	Unbalanced panel data	mySupermarket
Paper 4	Quantity discounts	Retail prices	Analytical	Mathematical optimisation	N/A	N/A
Paper 5	Retail buyer power	Supply trading terms	Empirical	Summary statistics	Secondary sourced data	Competition Commission
Paper 6	Brands and PL choice	Products and retail prices	Empirical	Summary statistics	Secondary sourced data	Marketing reports
Paper 7	Competition assessment	Retail prices	Analytical	Competition assessment	N/A	N/A
Paper 8	Consumer segmentation	Retail prices	Analytical	Game theory	N/A	N/A
Paper 9	Retail price manipulation	Retail prices	Empirical	Statistics	Balanced panel data	Tesco Price Check

#### ***4.1 Empirical analysis of pricing and product choices***

The empirical contributions concern the study of competitive interaction amongst the UK's leading grocery retailers. In particular, through building and applying largescale panel datasets of weekly prices on grocery products over several years, the papers cover different questions about the nature of pricing competition. Some of these questions apply broadly to grocery products, such as how structural changes (like the Morrisons/Safeway merger in 2004) or macro-economic conditions (like the onset of the financial crisis in 2008) affected grocery prices. Other questions are more specific to particular types of grocery products, such as how UK retailers pass through excise duty increases on alcoholic drinks prices or whether UK retailers price branded goods and their private-label equivalents in the same manner. In addition to the construction and analysis of panel datasets, the papers also draw on secondary-sourced data from marketing agencies and governmental bodies to provide specific contextual information.

The papers providing empirical analysis relate specifically to the UK retail grocery sector. The empirical analysis covers a period of significant change in UK grocery retailing in the last 15 years. **Paper 1** examines the impact of market consolidation, using the Safeway/Morrisons merger in 2004 as a case study. **Paper 2** and **Paper 9** consider how pricing behaviour changes as macro-economic conditions change, examining the impact of the UK economy moving from a period of economic stability to economic crisis over 2007/8 . **Paper 5** and **Paper 6** chart how both these market impacts respectively influenced supply chain relations and the development of private label in grocery retailing. **Paper 3** provides more focused coverage, examining how retailers apply different tax pass-through rates with excise duty changes on alcohol prices.

Four of these papers - **Paper 1**, **Paper 2**, **Paper 3** and **Paper 9** – utilise largescale panel datasets of weekly prices on grocery products over several years from the leading UK grocery retailers. The papers use these panel data to examine different aspects about the nature of pricing competition in UK grocery retailing. The panel data come from two key sources. Firstly, we collected weekly updated price data from November 2003 to November 2008 via Tesco’s online price comparison service “Price Check” ([tesco.com/pricecheck](http://tesco.com/pricecheck)). Initially, the Tesco site covered just over 4000 product lines but later expanded to over 10000 items, with weekly updated price comparisons made against Sainsbury’s, Asda and Safeway (and later against Morrisons after it acquired Safeway in 2004). The second panel data is from the independent price comparison website of [mySupermarket.co.uk](http://mySupermarket.co.uk), with data collected from February 2008 through to 2014 covering prices from Tesco, Asda, Sainsbury’s and Ocado. Missing observations restrict the number of products for which data were available over long series of weeks running into five or seven years, but the sample sizes are still impressive when taking into account that they generally cover hundreds of items over hundreds of weeks across three or four retailers.

**Paper 1** uses panel data from Tesco Price Check to examine how structural changes resulting from the Morrisons/Safeway merger affected price competition for grocery products amongst the Big 4 retailers, based on a sample of 539 packaged grocery products over a three-year period (2003-2006) with a total of 278,124 price observations. The analysis contrasts pre-merger and post-merger pricing, examining price levels, the direction of price changes (rises vs. falls), and the magnitudes of price adjustments (in pence). Further analysis covers the extent of price alignment across the four retailers (measured by the extent of price



dispersion across the retailers over time), and the volatility of prices across product categories (measured by weekly price churn rates). The paper concludes by examining the extent of leader-follower behaviour amongst the retailers (measured by the extent of symmetry of competitor price changes around the time of a firm's price change) and contrasts behaviour before and after the merger.

**Paper 2** uses panel data combined from Tesco Price Check and mySupermarket to examine how changes in macro-economic conditions and particularly the onset of food inflation and the economic crisis in 2007/8 affected pricing behaviour adopted by the top three retailers. The analysis used a sample of 370 packaged grocery products over a seven-year period (2003-2010), covering 366 consecutive weeks, totalling 406,260 price observations. The study examines the asymmetry between price cuts (tending to be small and frequent with a mode of 1p) and price rises (tending to be large and infrequent with a mode of 10p). The paper applies different tests (including regression analysis) to determine if the retailers use manifold penny price cuts in conjunction with temporary price reductions (TPRs) as an obfuscation strategy to hide sharp price increases resulting in higher basket overall prices.

**Paper 3** restricts attention to alcohol products and uses panel price data on 254 alcohol products with weekly data from March 2008 to August 2011 (178 weeks) from mySupermarket to assess the extent to which four grocery retailers passed on excise duty and VAT rate changes through adjustments to retail prices. The paper uses quantile regression analysis to examine tax pass-through rates on different price-categories (i.e. price bands) in steps from the cheapest to the most expensive alcohol products. This regression technique is especially useful in the context of this study as the interest is to see whether tax increases raise prices

proportionately across all price bands, and in particular whether the retailers under-shift tax (i.e. not fully pass-through duty increases) on cheap alcohol, which might encourage excessive consumption.<sup>5</sup>

**Paper 9** uses panel data from Tesco Price Check for 60 branded goods matched against private label equivalents from each of the Big 4 retailers (so 300 different items in total) to examine how the retailers set and adjust the prices of the branded goods compared to the private label goods. The period covers 264 weeks (2003-2008) and the panel consists of 126,720 price observations. Using the panel, the empirical analysis considers: (i) price correlations between the matched pairs and across the retailers; (ii) price gaps between brands and private labels; (iii) differences in price matching across the retailers for brands and private labels over time; and (iv) price volatility of brands and private labels over time. The paper examines factors affecting these measures regarding product category characteristics, private label shares, and retailers' relative category positions.

In addition to the construction and analysis of panel datasets, the above four papers also draw on secondary-sourced data from marketing agencies (Nielsen and Kantar) to provide specific contextual information relating to product characteristics and retailers' relative positions for regression analysis.

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<sup>5</sup> The advantage in using quantile regression is providing flexibility for modelling the entire distribution of product prices. Rather than focusing only on the mean, as in classical mean regression, quantile regression focuses on quantiles that refer to defined points in the distribution. For example, the 0.5 quantile is the median and 0.1 is the 10<sup>th</sup> percentile of the distribution. Hence, this methodology provides a framework for investigating differential pass-through for price points (i.e. quantiles) in the price distribution, e.g. to see if the pass-through rates are different for cheap alcohol compared to expensive alcohol. Furthermore, as quantile regression does not impose assumptions of normality of error terms and constant variance it is superior to the mean regression in this context, as it can capture features such as skewness and heterogeneity which are inherently embedded within price data.

**Paper 5** and **Paper 6** take a different empirical approach and instead of examining product prices, they focus more on general market impacts and trends in terms of developments within the sector, respectively examining supply chain relations and the development of private label in grocery retailing. These papers draw on secondary-sourced data from marketing agencies (Nielsen and Kantar) and government bodies (principally the Competition Commission) and provide summary information and descriptive statistics to support the narrative and arguments developed in the papers.

#### ***4.2 Analytical models of pricing and product choices***

The analytical papers, **Paper 4** and **Paper 8**, complement the empirical papers by investigating specific aspects of pricing and product choices that can work against societal interests: either because particular prices are too low or too high. **Paper 4** addresses the former, in demonstrating why “value size pricing” might be profitable for food retailers to offer “bargain” low prices on jumbo-sized sugary drinks targeted at value-conscious consumers while setting “rip-off” high prices on small-sized sugary drinks targeted at health-conscious consumers. **Paper 8** addresses the latter, in demonstrating why retailers might deliberately inflate brand prices when introducing private-label equivalents to profit by segmenting quality-conscious “brand loyal” consumers from value-conscious “switcher” consumers.

Despite looking at very different issues, both papers have a common theme in examining how food retailers can use consumer self-selection segmentation (i.e. second-degree price discrimination) to increase profits. This involves the retailer deliberately increasing product choice – in terms of offering either different product sizes or different product qualities – and then pricing the varieties such

that the combination of each variety and its price appeals to one segment but puts off another segment. For example, a grocery retailer might introduce a “large” size product variant offered at a lower unit price compared to a “small” size offered at a higher unit price, where the large size appeals to value-conscious large households and the small size appeals to size-conscious small households (e.g. seeking to reduce excessive consumption or food waste). As another example, a grocery retailer might introduce a “low” quality product variant offered with a low unit price compared to a “high” quality variant with a high unit price, where the former appeals to value-conscious consumers and the latter to quality-conscious consumers. This segmentation approach will be profitable to the retailer when it can extract proportionately more value (i.e. consumer surplus) from those shoppers prepared to buy the product variant with the high unit price and/or when it allows for increased total sales.

In examining the application of self-selection segmentation strategies, both papers use formal analytical modelling using marketing and economic theory to model market behaviour and the effects of retailers’ decisions on consumer welfare. The focus in **Paper 4** is on understanding the motivation for food vendors to use “value size pricing” in offering supersized sugary drinks at bargain prices (targeted at value-conscious consumers) while over-charging for smaller sized sugary drinks (targeted at health-conscious consumers) and how governments might best intervene to curb excessive consumption. The focus in **Paper 8** is to show why more product choice can sometimes leave consumers worse off – such as how retailers can offer both brands and private label equivalents to segment consumers (between “brand loyal” and “switcher” consumers) and result in higher average prices.

Thus despite appearing to be very different subjects, **Paper 4** and **Paper 8** examine fundamentally the same question in respect of would societal welfare be increased if product choice were reduced. In **Paper 4**, the issue is about prohibiting or taking away the incentive to buy large size sugary drinks that result in excessive and harmful consumption (because these fuel obesity and lead to ill-health in the long term so a public health concern). In **Paper 8**, the issue is about consumer welfare and the circumstances under which this would be higher in the absence of copycat private label products that mimic brands but serve only to allow retailers to segment consumers, so pushes up average prices and allows the retailer to gain but at consumers' expense. In both papers, the overall effect rests on the impact on aggregate welfare, i.e. economic surplus for all market participants (taken to be profit for firms plus consumer surplus measured as the difference between the price paid and the willingness-to-pay level). However, the analyses highlight distributional issues as well; showing the tension arising from different consumer segments having different preferences, so that one segment may gain while the other loses out from more or less product choice.

#### ***4.3 Competitive assessment and policy analysis***

A common element to all nine papers is a public policy dimension because competition and coordination in grocery markets might not always yield economically and socially optimal outcomes, giving rise to a role for government intervention in some contexts to improve outcomes. Such a role could exist because the profit motive drives retailers to present consumers with purchasing choices that are privately profitable but socially deleterious. **Paper 3** and **Paper 4** respectively considers this aspect in the context of heavily taxing alcoholic and sugary drinks to curb harmful excessive consumption that is harmful to health.

More generally, broad-based competitive assessments are required in judging the extent to which competition is effective in delivering efficient and welfare-enhancing outcomes. **Paper 5** considers the evidence regarding how the leading grocery retailers exercise their buying power over suppliers and whether this is anti-competitive and leads to outcomes that serve against consumers' interests. **Paper 7** provides guidance to researchers and practitioners on assessing competition between branded goods and their private label equivalents.

Thus at the heart of the nine papers is a welfare perspective on the impact of marketing decisions and supply chain relations in how this affects the firms participating in the industry (i.e. retailers and suppliers) and the impact on their customers (i.e. shoppers) and society at large. Eight of the papers undertake competitive assessment analysis as part of the formal empirical analysis (i.e. in **Paper 1**, **Paper 2**, **Paper 3**, and **Paper 9**), descriptive empirical analysis (i.e. in **Paper 5** and **Paper 6**) or theoretical analysis (i.e. in **Paper 4** and **Paper 8**). However, the remaining paper, **Paper 7**, entirely focuses on arguments and logic rather than formal empirical assessment or analytical modelling for its insights and contribution. Specifically, the paper is about how to conduct competitive assessments, so offers a methodological contribution intended to benefit competition authorities and practitioners undertaking such assessments. This is in the context of analysing competition between branded and private label goods, which might be relevant to merger inquiries or anti-competitive practice cases. The paper draws on insights from the existing literature but also from my own papers, notably **Paper 8** (which it cites) as well as **Paper 2**, **Paper 6** and **Paper 9**.

## 5. Contributions, limitations and future research agenda

The combined contribution of the nine publications is to help provide further understanding of the nature and consequences of the marketing and operations of grocery retailers affecting retailers, suppliers and consumers. More specifically, the nine papers provide complementary insights on the nature of competition and dynamics operating in the grocery industry and the interplay between retail competitors and their relations with suppliers. Additionally, the papers focus on understanding how competitive interaction can influence marketing decisions, principally over prices and product choices offered to consumers. In turn, this can have consequences for policymakers and regulators seeking to ensure that retail grocery markets are competitive in delivering efficient outcomes (e.g. in terms of “PQRS” - prices, quality, range and service).

This concluding section summarises the research contribution of the papers individually and collectively, my own individual contribution to the co-authored publications, the limitations of the papers and what these offer as opportunities for future research, the current impact of the papers and future research agenda, and closing remarks.

### ***5.1 Summary of research contributions***

The portfolio of nine papers relate to the wider set out of outputs from three funded research projects financed by UK research councils. **Paper 1**, **Paper 2** and **Paper 9** contribute directly with empirical papers to the £200,000 Economic and Social Research Council (ESRC) funded project “Price Dynamics in Food Retailing in Great Britain” (with Michael Waterson, Jonathan Seaton and Paul

Dobson) (ESRC Grant RES-062-23-1962). In addition, **Paper 5**, **Paper 6**, **Paper 7** and **Paper 8** provide supporting analytical modelling and competitive assessment analysis to understand better the competitive dynamics of pricing competition and interaction between suppliers and retailers. **Paper 3** contributes directly to the £1.1m Medical Research Council (MRC) funded project “Alcohol Policy Modelling and Evaluation” (led by Petra Maier and involving Paul Dobson and Jon Seaton as fellow co-investigators) (MRC Grant G1000043). **Paper 4** contributes directly to the £100,000 ESRC funded project “The Impact of Retail Pricing on Overeating and Food Waste” (with Paul Dobson, Eitan Gerstner and Jon Seaton) (ESRC Grant RES-000-22-3524).

The substantial funding received for the three research projects, totalling £1.4m, indicates the importance of the subject matter that the UK government-backed research councils placed on the research undertaken. The projects have developed high impact research outputs that have contributed to the academic literature and for the benefit of non-academic users. This subsection focuses on the academic research contribution of the papers, while subsection 5.3 (below) addresses the broader impact on other stakeholders (including industry, government bodies, and the media).

In their own right, the set of nine papers provide an important academic research contribution to existing literatures on retail marketing. The papers offer a blend of methodological, analytical and policy contributions through novel empirical, theoretical and competitive assessment analyses. The set of papers provides new insights on hitherto under-researched areas, notably through highly disaggregated price studies of how UK retailers set and adjust their prices, and the nature, character and effects of competition between brands and private



labels in the context of tensions in supply chain relations between grocery producers and retailers. The rest of this sub-section sets out the individual research contributions of each of the nine papers.

**Paper 1** contributes to the literature on the competition effects of retail mergers. Other academic studies tend to focus on effects measured in terms of price levels (e.g. Hosken et al. 2012; Alain et al. 2017), whereas in contrast this paper shows how pricing behaviour in more general ways changed, going beyond price levels to look at price variability, price dispersion, and price leadership. The analysis does not simply look at “before and after” effects, e.g. through difference-in-difference analysis (Hosken and Tenn 2015), but instead looks at how price competition evolves in the wake of a major merger, recognising that different retailers may respond differently to the merger. Our findings show that the merger had the effect of stimulating rather than restricting price competition, in contrast with much of the extant literature, which often find major retail mergers to be anticompetitive. The findings also support the conclusions and reasoning of the Competition Commission inquiry to allow Morrisons to acquire Sainsbury as a pro-competitive merger despite consolidating the UK retail sector (CC 2003). The paper is relevant to researchers undertaking analysis of retail mergers (e.g. as cited by Argentesi et al. 2016) and analysis of food pricing (e.g. as cited by Lan and Dobson 2017).

**Paper 2** is novel in terms of the length of the period covered (with seven years of weekly price data) and the matching of products against retailers to provide a balanced panel of product prices for the three leading retailers in the UK retail grocery sector. The standout contribution of this paper is to show how flexible are prices, which contrasts sharply with the existing literature which is

predominantly made up of US pricing studies. The findings challenge the widely held view that menu costs (i.e. costs of changing prices) are so significant that they make retailers reluctant to change prices frequently (Levy et al. 1997; Anderson et al. 2015). Prices are much more flexible than previously thought. In addition, the paper provides evidence that the price churning that occurred in the economic crisis period (2008-10), with retailers adopting a frenzy of penny price cuts and temporary price discounts, served as an obfuscation strategy to mask rapid price inflation considerably raising overall basket prices. This is important evidence that is directly relevant to research in the behavioural economics field looking at misleading or confusing pricing (e.g. as cited by Ater and Gerlitz 2017). This is also important in developing insights on price leadership in grocery retailing (e.g. as cited by Seaton and Waterson 2013).

**Paper 3** provides the first highly disaggregated pricing study of tax increases on alcohol at item level across different retailers. As such it makes a contribution to public health research, especially in the context of whether setting a minimum price on alcohol would be more effective at curbing excessive consumption than excise duty increases or banning below cost selling (e.g. as cited by Brennan et al. 2014). The paper is also methodologically important in terms of its quantile regression analysis and economic methods to assess tax pass-through (e.g. as cited by Shrestha and Markowitz 2016).

**Paper 4** provides the first theoretical analysis to explain the practice of value size pricing and policy measures that could counter harmful public health and economic effects of the practice when applied to sugary drinks. Thus far, analysis of soda taxes and other measures to curb excessive consumption of sugary drinks have been predominantly empirical and have not tended to focus on the

issue of the size of drinks, which this paper addresses. The paper is contained in a special issue of *Journal of Business Research* on food portions and marketing, and the editorial explains the paper's contribution in the context of other research in this field (Askegaard et al. 2017).

**Paper 5** provides an important overarching review of the application of retail buyer power in the context of UK grocery retailing. The findings in the paper have relevance for research in other jurisdictions, including analysis of buyer power in the US (e.g. as cited by Kirkwood 2012). The paper is also relevant to economic geography studies examining the exercise and application of retail buyer power in the context of market regulation (e.g. as cited by Wood and Alexander 2016).

**Paper 6** is novel in providing a balanced perspective of the pro-competitive and anti-competitive effects of brand and private label development, taking account of both immediate and dynamic competition. This balanced perspective is important in what is often a highly polarised academic debate. The paper makes a distinctive contribution in the retail marketing literature on brand and private label competition for its illustrations and characterisations (e.g. as cited by ter Braak et al. 2014; Olbrich and Grewe 2013; Schnittka 2015).

**Paper 7** provides novel insights on conducting competition assessments in examining the rivalry between brands and private labels. This has been a relevant matter in a number of merger cases involving consumer packaged goods producers, but also relevant to examining retail buyer power in the context of assessing retail mergers or anticompetitive practices. The key insight involves how prices of brands and private labels might appear unrelated and uncorrelated

because of the way that retailers might use the products as a consumer segmentation device.

**Paper 8** develops very detailed and extensive modelling to provide novel insights on different bargaining structures between retailers and brand producers and how this can affect the competition between brands and private labels. The paper provides a significant contribution through looking at both competition policy and intellectual property rights policy issues in considering how retailers may have a strong incentive to design private labels that mimic brands as closely as possible by developing near-identical lookalike equivalents.

**Paper 9** provides novel empirical analysis through examining a balanced panel of matched brands and private label equivalents to examine their pricing behaviour over a long period (spanning five years) across competing retailers. This is a novel study in terms of examining both inter-product competition and inter-retailer competition. The context is very important in view of ongoing concerns of brand producers that retailers deliberately favour private label over brands in a number of ways, including brand delisting trials, comparative advertising, and through selective shelf allocation. This is the first detailed empirical study on a wide range of grocery products to investigate whether retailers use strategic pricing to favour private label.

## ***5.2 Individual contribution to co-authored publications***

In respect of my own individual contribution to each of the nine publications, Table 3 (below) summarises the work that I undertook regarding each publication. These papers were genuine collaborations amongst the co-authors, so in most

cases there is considerable overlap in the roles played by the co-authors. Nonetheless, Table 4 focuses on my main contributions to each of the nine publications, mostly drawing on my distinctive marketing expertise (in view of the other co-authors being economists). My specialist retail marketing background allowed me to make specific contributions to the papers in respect of observing and interpreting retailer marketing and pricing practices in the UK context as well as familiarity with the relevant marketing literatures and main research techniques in the marketing field, as opposed to other co-authors specialising in economic analysis. As such, each co-author brought complementary skills and insights to bear in developing the papers.

**Table 4: Individual contribution to the nine publications**

<i><b>Individual contribution</b></i>	<i><b>Specific contribution to each paper</b></i>
<b>Paper 1</b>	Literature review, insights on grocery retailing practices, interpretation of pricing behaviour, editing
<b>Paper 2</b>	Literature review, insights on grocery retailing practices, interpretation of pricing behaviour, analysis of retailer advertising, editing
<b>Paper 3</b>	Review of grocery retailing practices, interpretation on pricing behaviour, interpretation of results, editing
<b>Paper 4</b>	Literature review, insights on grocery retailing practices, policy implications, co-writing and editing
<b>Paper 5</b>	Literature review, review of Competition Commission studies and data interpretation, co-writing and editing
<b>Paper 6</b>	Literature review, data organisation, tables, diagrams, argumentation, examples, illustrations, co-writing and editing
<b>Paper 7</b>	Literature review, case review, argumentation, policy interpretation, co-writing and editing
<b>Paper 8</b>	Literature review, policy interpretation, case reviews, argumentation, co-writing and editing
<b>Paper 9</b>	Literature review, data analysis, argumentation, grocery retailing practices, discussion, interpretation of results, writing

As a collection of papers, the portfolio demonstrates my contribution to advancing understanding of retail marketing through careful and rigorous empirical *and* theoretical analysis. This is an unusual combination, not least, as marketing academics typically specialise either in empirical analysis or in theory analysis, but rarely both. Equally, what I have sought to bring to the work is a deeper understanding of the developments taking place in the grocery sector using the lens of economics but in conjunction with the literatures on marketing strategy and the psychology of consumer behaviour, to understand more about how retailers respond in competitive situations in developing their proposition to consumers. I would contend that there has been too little such work in the UK, where it is largely North American based marketing academics that have led this field (with the notable exception of the very high quality marketing research coming from the Netherlands on grocery retailing over recent years).

Through the process of developing these papers over the past decade, I have been able to draw on my growing expertise and detailed knowledge about retailer practices. This has been a continuous investment of my time because it involves studying not just the academic literature but also the professional literature and media coverage on grocery retailing. This has been important in respect of my ability to contribute examples of practices and outcomes from the grocery sector that enrich the papers and demonstrate their real-world relevance to retail managers and marketers. This helps to ensure that the papers have genuine impact for the industry as well as for informing consumers, especially in view of the media coverage these papers and my related work have received. Additionally, it has also helped with my teaching Retail Management over the past decade, but likewise this teaching has fed back into and informed the research.

## **5.2 Research limitations and future research opportunities**

As with any research publications, there are inevitably limitations as to what can be covered and achieved in a single publication. Additionally, advances in research may provide new and better techniques for undertaking empirical and/or theoretical analysis. Furthermore, there may be limitations in the data, the methods employed, and how far the analysis can provide conclusive and compelling findings in view of extraneous effects, events and non-modelled aspects. Certainly, all these aspects are relevant to some degree for the set of nine papers in the portfolio. This sub-section examines the research limitations of each of the papers and the future research opportunities offered.

For **Paper 1** the sample size is impressive in the balanced panel price data set but the absence of sales (i.e. quantity) data means that it was not possible to conduct any formal structural merger simulation analysis. The paper acknowledges this limitation and refers to the analysis undertaken by Skrainka (2012) examining the Safeway/Morrisons merger. Despite this limitation, the paper uses the price data in ways not previously employed in empirical studies on merger analysis, noticeably examining issues concerned with price dispersion, price volatility and price leadership. Future studies might wish to examine these issues on price effects along with examining the impact on sales and ideally margins if there are data available on sales volumes and retail costs.

For **Paper 2**, the obvious limitation is in how far empirical evidence can go in demonstrating that retailers were employing an obfuscation strategy as a deliberate policy beyond just pricing competitively. The market circumstances were exceptional, given the severity of the economic crisis, and the identified

patterns of pricing behaviour could be unique to the timeframe covered. There is certainly a research opportunity in extending the study period to examine how pricing behaviour has evolved during the course of this current decade (given that the data in the paper only goes up to November 2010).

**Paper 3** has a similar limitation to **Paper 1** in that the absence of quantity data means that it is difficult to discern the full economic effects of tax pass-through, since ultimately the tax issue is about the effect on consumption levels, not just price levels. Even so, this limitation is common to many studies on tax pass-through. If quantity data were available, then an interesting line of enquiry would be to examine the impact of excise duty changes on different consumer groups, to examine distributional issues as well as the overall impact.

**Paper 4** provides a monopoly model of pricing, treating the food vendor as effectively having a captive market in making pricing offers on different product sizes. This might not be an implausible assumption if consumers buy impulsively when in store or at a restaurant (i.e. they choose where to shop before they choose what to buy). However, an interesting and very novel development would be to look at value size pricing in an oligopoly context where there are competing food vendors selling sugary drinks. The interest would be to see if competition exacerbates or reduces the tendency of retailers to use value size pricing.

The limitation for **Paper 5** and academic research in general in the area of supply chain relations is that researchers do not generally have access to the data and information on how retailers and producers conduct their negotiations and agree on trading terms. The paper draws mainly on information obtained during the course of competition authority investigations undertaken by the UK



Competition Commission in 2000, 2003 and 2008. Since there has been no formal market investigation since 2008, it is not possible to determine whether retail buyer power has increased or decreased over the last decade in UK grocery retailing. Moreover, even with the appointment of a Groceries Code Adjudicator in 2013, there is no ongoing analysis on retail buyer power, other than reporting on breaches in respect of the Groceries Supply Code of Practice (GSCOP).<sup>6</sup> Accordingly, there are presently few options for taking empirical work on retailer buyer power forward at sector level. Thus, researchers might have to focus on theory analysis or wait for an opportunity to have access to otherwise private information on negotiated trading terms in supply chains before conducting empirical analysis.

In respect of **Paper 6**, the main limitation is its piecemeal coverage by illustration rather than general empirical analysis and its focus mainly on the UK, to exclusion of examples and insights from other jurisdictions (including elsewhere in Europe and the US). This presents a research opportunity to undertake a multi-country analysis to examine whether the pro- and anti-competitive effects arising from brand and private label competition are weaker or stronger in other countries. Thus far, international studies have mostly focused on the pace of development of private label, without examining how this has affected relations between brand producers and retailers and their competitive responses (e.g. how this affected product pricing, product choice, and product innovation).

For **Paper 7**, the analysis is limited to presenting the arguments on how to conduct a competition assessment for examining competition between brands and

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<sup>6</sup> For details, see <https://www.gov.uk/government/organisations/groceries-code-adjudicator> (accessed on 7/1/2018).

private labels. The chief purpose of the paper is to provide guidance to researchers and practitioners. However, in doing so, the paper does not provide any empirical analysis of its own, and so presents an opportunity for future research. In particular, there is a research opportunity for undertaking a long duration study to examine how changing market developments over time are affecting not just prices but product innovation as well, in view of claims from brand producers that private labels free ride on their brand investments and thereby undermines their incentive to invest in product innovation. This is an intriguing aspect since freeriding might undermine the profit motive for brand innovation but could provide a strong competitive motive for innovation (for the brand to stay a step ahead in quality terms over copycat private label goods). An empirical study might be able to discern if primary “must-stock” brand producers innovate differently to secondary brand producers, given the latter are at greater risk of delisting and displacement compared to the former.

For **Paper 8**, as with **Paper 4**, the main limitation is that the focus on a single (monopoly) retailer, but here in the presence of both vertical and horizontal competition with a brand producer (with Figure 2 representing the relationships modelled). There is scope to extend this analysis to examine competition between retailers, to see how this affects incentives to develop private label and how to set prices of both brands and private label. A further limitation of the analysis is that it is the model is static in nature. An intriguing aspect might be to extend the analysis to examine dynamic pricing. There is an established marketing literature on dynamic pricing (e.g. Raman and Chatterjee 1995), but this has not yet been applied in the context of brand and private label rivalry. Another limitation is the focus on pricing to the exclusion of other marketing choices, like promotions and

advertising. Again, there is established literature on the interaction effects across the marketing mix (e.g. Naik et al. 2005), and applying insights from this literature might offer new modelling opportunities.

**Paper 9** has the same limitation as **Paper 1** and **Paper 2** in not having access to sales (quantity) data and having to rely only on price data. In addition, the question posed by the paper, in respect of whether grocery retailers manipulate brand prices to favour private label, is a challenge to demonstrate formally. The best the paper can do is to identify particular patterns of pricing behaviour where there are striking differences in the treatment of brand prices and private label and offer insights on what these differences demonstrate. If sales volume data were available at item level (to match the price data) then it would be possible to see if the price manipulation had a material effect on the sales levels of the brands and private labels. Instead, the paper has to draw inferences on category-level market shares of private label about the effects on sales. Nonetheless, the research question is intriguing and worthy of further study with a dataset that has both price and quantity data.

### ***5.3 Impact and research agenda***

Beyond the impact of the research on the academic community, the findings of the papers have received extensive media coverage and featured widely in policy reports, presentations and discussions. This subsection outlines this broader coverage and the wider impact of the research on non-academic users. First, sub-subsection 5.3.1 details the media coverage received relating both

directly and indirectly to the papers. Second, sub-subsection 5.3.2 outlines the policy impact and contribution of the research papers.

### *5.3.1 Media coverage*

In respect of media coverage, the finding of penny price cutting detailed by **Paper 2**, but also featuring in **Paper 1** and **Paper 8**, received national press coverage for the working paper version of the paper (Chakraborty et al. 2011). **Paper 3** on alcohol tax pass-through received specialist media coverage in both the health media and beverage industry media. Furthermore, **Paper 4**, on pricing of sugary drinks and the role of a soda tax or soft drinks industry levy to curb consumption also received extensive national media coverage. In addition, there was media coverage and interviews undertaken in respect of the comparability of brands and equivalent private labels. Table 5 (below) summarises the media coverage (up to 1/3/2018) in relation to these papers and the associated research.

Following the media coverage on these research papers and in recognition of my research expertise on retail marketing, different media organisations and publications contacted me with requests for commentary, interviews and quotes on a range of related grocery pricing issues. The subjects covered notably include “shrinkflation” (where products shrink in size but the price remains the same), as well as discount pricing, price variability, pricing to avoid food waste, and price inflation. Table 6 (below) summarises the additional media coverage (up to 1/3/2018) that indirectly relates to the research in the portfolio and explicitly quote my views and observations on a series of retail marketing matters.

**Table 5: Media coverage directly relating to papers in the portfolio**

Issue	Media coverage
Penny price cutting and price manipulation by grocery retailers <b>(Paper 2)</b>	<p><i>Eastern Daily Press</i> (22/4/2015), Calls for supermarket inquiry over pricing, p. 11</p> <p><i>Daily Mirror</i> (5/3/2012), Supermarket cuts 'rip-off', p. 18.</p> <p><i>Sunday Times</i> (4/3/2012), Shoppers pay more in sham price-cutting, p. 18.</p> <p><i>The Times</i> (19/5/2011), Can you feed a family on fifty quid a week? T2 p. 6-7.</p> <p><i>Daily Mail</i> (5/3/2010), Why those supermarket 'bargains' end up costing you more.</p> <p><i>Guardian</i> (22/2/2010), Every little helps? Supermarkets accused of 'cynical manipulation' over 1p cuts, p. 13.</p>
Alcohol tax pass-through effects by grocery retailers <b>(Paper 3)</b>	<p><i>Off License News</i> (21/11/2014) - Study points finger over duty hikes, p.2</p> <p><i>Alcohol Policy UK</i> (14/7/2014) - <a href="http://www.alcoholpolicy.net/2014/07/supermarkets-hindering-efforts-to-reduce-harmful-driking-says-sheffield-researchdispatches-on-the-c.html">http://www.alcoholpolicy.net/2014/07/supermarkets-hindering-efforts-to-reduce-harmful-driking-says-sheffield-researchdispatches-on-the-c.html</a></p> <p>Heart FM radio (27/6/2014) - <a href="http://www.heart.co.uk/eastanglia/news/local/uea-findssupermarkets-shifting-alcohol-taxes/">http://www.heart.co.uk/eastanglia/news/local/uea-findssupermarkets-shifting-alcohol-taxes/</a></p> <p><i>The Spirits Business</i> (27/6/2014) - <a href="http://www.thespiritsbusiness.com/2014/06/uksupermarketsshifting-alcohol-taxes/">http://www.thespiritsbusiness.com/2014/06/uksupermarketsshifting-alcohol-taxes/</a></p> <p><i>Medical News Today</i> (25/6/2014) - <a href="http://www.medicalnewstoday.com/releases/278683.php">http://www.medicalnewstoday.com/releases/278683.php</a></p> <p><i>MyScience</i> (24/6/2014) - <a href="http://www.myscience.org.uk/wire/uk_supermarkets_minimise_price_rises_for_the_cheapest_alcohol_when_taxes_are_increased2014-Sheffield&amp;rss=1">http://www.myscience.org.uk/wire/uk_supermarkets_minimise_price_rises_for_the_cheapest_alcohol_when_taxes_are_increased2014-Sheffield&amp;rss=1</a></p> <p><i>ScienceNewsLine</i> (24/6/2014) - <a href="http://www.sciencenewsline.com/articles/2014062414140042.html">http://www.sciencenewsline.com/articles/2014062414140042.html</a></p> <p><i>HealthCanal</i> (24/6/2014) - <a href="http://www.healthcanal.com/substance-abuse/52372-uksupermarkets-minimise-price-rises-for-the-cheapest-alcohol-when-taxes-areincreased.html">http://www.healthcanal.com/substance-abuse/52372-uksupermarkets-minimise-price-rises-for-the-cheapest-alcohol-when-taxes-areincreased.html</a></p> <p><i>MedicalXpress</i> (23/6/2014) - <a href="http://medicalxpress.com/news/2014-06-uksupermarkets-minimise-price-cheapest.html">http://medicalxpress.com/news/2014-06-uksupermarkets-minimise-price-cheapest.html</a></p> <p><i>Science 2.0</i> (23/6/2014) - <a href="http://www.science20.com/news_articles/higher_alcohol_taxes_just_lead_to_fewer_price_increases_for_cheapest_alcohol-139176">http://www.science20.com/news_articles/higher_alcohol_taxes_just_lead_to_fewer_price_increases_for_cheapest_alcohol-139176</a></p>
Sugar in diets and need to reduce consumption of sugary drinks <b>(Paper 4)</b>	<p><i>The Times</i> (8/2/2017), Britons are sugar addicts, says minister.</p> <p><i>The Sun</i> (8/2/2017), Pop at sugar deals.</p> <p><i>Daily Mail</i> (8/2/2017), Obesity czar: we need a revolution to break children's sugar addiction.</p> <p><i>Daily Mirror</i> (7/2/2017), Our children eat more sugar than kids in any other country in Europe.</p> <p><i>BeverageDaily.com</i> (16/1/2017) - Can a soda tax discourage go large?</p> <p><i>European Union News</i> (15/1/2017) – A sugary drinks tax has wider economic as well as health benefits</p> <p><i>Scotsman</i> (30/1/2013), Health tax on fizzy drinks to cost jobs, MSP warns.</p>
Brands and private labels <b>(Paper 8 &amp; Paper 9)</b>	<p>Channel 4 TV – <i>Supershoppers</i>, series 4 episode 1 – 27/11/2017 (discussing whether some supermarket value ranges are identical to their pricier standard own label ranges)</p> <p><i>Daily Mirror</i> (31/1/2018), Bloopermarket: Shoppers fork out for own-brand foods 'identical to value products', p. 6</p> <p><i>Daily Mail</i> (25/11/2017), Stores' value and own-brand food ranges are identical</p>

**Table 6: Media coverage indirectly relating to papers in the portfolio**

Price variability	<i>Daily Mail</i> (30/9/2017), How online giants like Amazon can rip you off
Discount retailing	Channel 4 TV – <i>Supershoppers</i> , series 3 episode 1 – 6/6/2017 (discussing why discount retailers selling unique pack sizes might not provide the best value) <i>BBC News</i> (6/5/2015), Election 2015: Can the 'Lidl class' be swayed by political promises?
Shrinkflation	ITV – <i>Save Money: Good Food</i> , series 2 episode 6 – 9/1/2018 (discussing shrinkflation where food pack size shrinks but the price remains the same) <i>Daily Mail</i> (27/9/2017), Crumbs! Now there are two fewer Jaffa Cakes per pack. <i>Daily Star</i> (25/7/2017), Chocolate bars ARE getting smaller...and HERE is the proof <i>Daily Mail</i> (25/7/2017), 2,500 products have shrunk in last 5 years - <i>Good Housekeeping</i> (24/7/2017), Over 2,500 products have shrunk in size, but cost the same <i>The Times</i> (13/4/2017), The incredible shrinking curry sauces, p. 15 <i>The Sun</i> (10/4/2017), Raw dhal: Sharwood relabels cooking sauces to serve four people instead of three – but the size and price stays the same - <i>Mail on Sunday</i> (5/3/2017) - Cheesed off! Families roundly cheated <i>Daily Mirror</i> (5/3/2017), Why those trendy new oval pizzas you see in major supermarkets may not be worth it <i>El Confidencial</i> (Spain) (28/2/2017), 'Shrinkflation': los británicos ya pagan más por sus productos debido al Brexit ('Shrinkflation': Britons already pay more for their products due to Brexit) <i>The Times</i> (20/2/2017) - Shoppers count cost of shrinkflation, p.12 <i>Good Housekeeping</i> (20/2/2017), Why Brexit is shrinking our shopping <i>The Sun</i> (19/2/2017), Bang out of order: How food is shrinking in supermarkets but price remains the same <i>Mail on Sunday</i> (18/2/2017), The great Brexit banger con <i>The Independent</i> (Ireland) (26/11/2016), Black Friday goes on - but beware 'dirty discount', 'price creep' and 'shrinkflation' <i>BBC News</i> (9/11/2016), Toblerone's trim: Is this the thin end of the wedge? - <i>The Independent</i> (Ireland) (9/11/2016), Shrinking Toblerone 'is not because of Brexit' - maker <i>Belfast Telegraph</i> (9/11/2016), Mind the gap: Toblerone bars get smaller as costs rise <i>CNN Money</i> (8/11/2016), Toblerone changes its iconic shape and chocoholics go crazy <i>Irish Times</i> (8/11/2016), Toblerone orm: chocolate bars feel wrath of 'shrinkflation'
Pricing to avoid food waste	<i>Eastern Daily Press</i> (4/12/2017), Supermarket chain sells food past best before dates to cut waste
Price inflation	BBC Radio Norfolk - 8/11/2016 (discussing inflation with Matthew Gudgin)

### 5.3.2 Policy impact and engagement

In addition to the extensive media coverage, a number of policy reports and policy discussions have referenced and featured the research in the Portfolio. This policy contribution falls into three areas: firstly, alcohol policy in relation to **Paper 3**; secondly, childhood obesity policy and specifically the Soft Drinks Industry Levy in relation to **Paper 4**; thirdly, competition policy on supply chain competition and competition between brands and private labels in relation to **Paper 1, Paper 2, Paper 5 and Paper 6**. The rest of the subsection addresses these three policy areas in turn.

Firstly, policy reports and submissions relating to alcohol policy for the Department of Health for England & Wales, the Scottish Government, the House of Lords on EU Alcohol Strategy, and the Irish Ministry for Finance cite **Paper 3**. The results of the paper and its implications have been informing the policy debate for the Department of Health in England & Wales as well as in Scotland as it assesses minimum pricing on alcohol. In addition to citations in academic medical journals (including *British Medical Journal*, *The Lancet*, *PLoS Medicine* and *Addiction*), this paper has also been cited in the House of Lords, European Union Committee, Home Affairs, Health and Education Sub-Committee report on EU Alcohol Strategy.<sup>7</sup> Public Health England cite the paper in their report on “The public health burden of alcohol: evidence review” (December 2016).<sup>8</sup> The paper is also relevant to policy debate over national budgets. For example, the Irish

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<sup>7</sup> Written Evidence Volume, p. 103, 2014, <http://www.parliament.uk/documents/lords-committees/eu-sub-com-f/eu-alcohol-strategy/alcohol-strategy-evidence.pdf> (last accessed 7/1/2018).

<sup>8</sup> See <https://www.gov.uk/government/publications/the-public-health-burden-of-alcohol-evidence-review> (last accessed 7/1/2018)

National Off-Licence Association (NOffLA) cites the paper in its submission to the Irish Minister for Finance for the 2016 Budget.<sup>9</sup>

Secondly, the research in **Paper 4** features in the deliberations of the House of Commons Health Committee, in reviewing the UK government's Childhood Obesity Plan. My co-author, Paul Dobson, presented oral evidence to the Select Committee on 7th February 2017.<sup>10</sup> The Committee's subsequent review report published on 27<sup>th</sup> March 2017 features the evidence.<sup>11</sup> In particular, section 4 of the Health Committee's report at paragraph 50 reiterates the call for policy measures that explicitly "should be designed to reduce the overall number of promotions of unhealthy foods and drinks." Paragraph 52 quotes my co-author in explaining the basis of our research and why sugary carbonated drinks are particularly prone to value size pricing and the public health need to curb discounting on large size that induces excessive consumption. In line with our research findings and policy conclusions, at paragraph 56 the Health Committee urge the Government to regulate to further reduce the impact of deep discounting and price promotions on sales of unhealthy food.<sup>12</sup> Following the oral evidence to the Health Committee, both Public Health England and PepsiCo (the second largest sugary drinks producer in the UK) requested meetings to find out more on our research. A meeting duly took place with PepsiCo at their London offices. A meeting with Public Health England is pending. Subsequently, the Centre for

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<sup>9</sup> <https://www.oireachtas.ie/parliament/media/committees/finance/1318.-Pre-Budget-Submission---National-Off-Licence-Association.pdf> (last accessed 7/1/2018)

<sup>10</sup> See <http://www.parliament.uk/business/committees/committees-a-z/commons-select/health-committee/news-parliament-20151/childhood-obesity-follow-up-evidence-16-17/> (last accessed 7/1/2018).

<sup>11</sup> See <https://www.publications.parliament.uk/pa/cm201617/cmselect/cmhealth/928/92802.htm> (last accessed 7/1/2018).

<sup>12</sup> See <https://www.publications.parliament.uk/pa/cm201617/cmselect/cmhealth/928/928.pdf> (last accessed 7/1/2018).



Social Justice report “Office the Scales: Tackling England’s childhood obesity crisis” (December 2017) expressly cites the paper in the context of a policy recommendation intended to curb the practice of value size pricing.<sup>13</sup>

Thirdly, several of the papers and their research findings feature in presentations and reports in respect of competition authorities and the development and application of competition policy. In respect of presentations, the findings in **Paper 1** (under the title “Pricing Developments in UK Supermarket Retailing”) were presented at a US Federal Trade Commission symposium on supermarkets (held in Washington DC, 24/5/2007). The findings in **Paper 5** were presented to an American Antitrust Institute symposium on buyer power (held in Washington DC, 20/6/2007). The findings in **Paper 2** (under the title “Pricing behaviour in British supermarkets: obfuscation and leadership”) were presented in a seminar to the UK Office of Fair Trading (held in London, 11/7/2012). The findings in respect of **Paper 1**, **Paper 2** and **Paper 3** (under the title “Supermarket Pricing in the UK: Recent Research Findings on Consumer Price Dynamics & Retailer Behaviour”) were presented at a DEFRA/AES conference on “Consumers and Food Baskets: Beyond the Farm-Gate” (held in London, 15/12/2014).

In respect of reports relating to competition policy, the findings in relation to **Paper 1** feature in a submission from the Association of Convenience Stores to the 2008 UK Competition Commission inquiry on grocery retailing (CC 2008).<sup>14</sup>

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<sup>13</sup> See <https://www.centreforsocialjustice.org.uk/core/wp-content/uploads/2017/12/CSJ-Off-The-Scales-Obesity-Report.pdf> (last accessed 7/1/2018). The report cites **Paper 4** in making the following policy recommendation: “requiring food vendors to use proportional pricing on HFSS products, so that unit prices are the same across the product size range, would eliminate the pecuniary incentive for consumers to ‘go large’ in choosing ‘bargain’ large portion sizes over ‘expensive’ smaller alternatives” (p. 89).

<sup>14</sup> See the report “Micro-Marketing and Discriminatory Practices in UK Grocery Retailing”, p. 50 discussing an early version of **Paper 1**, finding falling retail prices with rising retail market

The findings in respect of **Paper 5** on buyer power feature in a 2014 report by the German Cartel Office (Bundeskartellamt) for its sector inquiry on food retailing examining the structure and procurement behaviour in German food retail markets.<sup>15</sup> Similarly, the Swedish Competition Authority (Konkurrensverket) cites **Paper 5** in a 2009 report on “Competition in the Grocery Market”.<sup>16</sup> Also, an OECD report from 2009 by the Directorate for Financial and Enterprise Affairs on “Monopsony and Buyer Power” (DAF/COMP(2008)38, 17/12/2009, p. 62) cites **Paper 5**.<sup>17</sup> The Norwegian Competition Authority (Konkurransetilsynet) in a report on food chain competition cites an earlier version of **Paper 5** (Dobson and Chakraborty 2007).<sup>18</sup> A report for the European Commission DG Enterprise in 2011 on “The impact of private labels on the competitiveness of the European food supply chain” cites **Paper 6**, regarding brand and private label competition.<sup>19</sup>

Future research that I will be developing will continue with the intention to make an academic contribution along with informing the public through media coverage and having an impact on public health policy and competition policy.

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concentration; [http://webarchive.nationalarchives.gov.uk/20070705170044/http://www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/main\\_party\\_submissions\\_acs\\_micro\\_marketing.pdf](http://webarchive.nationalarchives.gov.uk/20070705170044/http://www.competition-commission.org.uk/inquiries/ref2006/grocery/pdf/main_party_submissions_acs_micro_marketing.pdf) (accessed 8/1/2018).

<sup>15</sup> See the report “Sektorundersuchung Lebensmitteleinzelhandel: Darstellung und Analyse der Strukturen und des Beschaffungsverhaltens auf den Märkten des Lebensmitteleinzelhandels in Deutschland” Bericht gemäß § 32 e GWB, September 2014 (citing **Paper 5** on p. 66) [http://www.bundeskartellamt.de/Sektorundersuchung\\_LEH.pdf%3F\\_\\_blob%3DpublicationFile%26v%3D7](http://www.bundeskartellamt.de/Sektorundersuchung_LEH.pdf%3F__blob%3DpublicationFile%26v%3D7) (accessed 8/1/2018).

<sup>16</sup> See

<http://www.konkurrensverket.se/globalassets/publikationer/uppdragforsknig/konkurrensen-pa-dagligvarumarknaden.pdf> (accessed 8/1/2018)

<sup>17</sup> See

[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP\(2008\)38&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP(2008)38&docLanguage=En) (accessed 8/1/2018).

<sup>18</sup> See <http://www.konkurransetilsynet.no/globalassets/vedtak-og-uttalelser/uttalelser/2011/konkurransetilsynets-horingssvar-til-nou-2011-4.pdf>

<sup>19</sup> See <http://www.socr.cz/file/197/retailer-own-brands-and-competitiveness-euopen-commission-study.pdf> (accessed 8/1/2018).

## **5.4 Concluding remarks**

This introductory chapter provides commentary on the portfolio of published papers to explain the common theme of the nine papers and their linkage as a coherent whole. The chapter places the articles in a theoretic context provided by the wider literature, explains the methodology in the papers, suggests what further work needs to be done, and indicates my contribution to co-authored publications, alongside their individual and collective academic research contribution and wider contribution to non-academic users through media coverage and policy impact.

Collectively, the published papers deliver a significant research contribution. The papers with my own contribution provide evidence of training in and the application of research methods appropriate to the field of study in retail marketing. The portfolio contributes to theory, knowledge and discussion in this field of study. The common theme of the papers is competition in grocery retailing, and specifically the way that retail marketing strategy and supply chain relations affects retail competition and outcomes for consumers. The portfolio, as a combination of empirical, analytical and competitive assessment studies, offers fresh understanding of how retailers compete through pricing and product choices in the context of grocery retailing and food purchases made by consumers. The collection of papers advances research in the field as well as provides findings with broad interest, including for the general public, policymakers and regulators (as evident from the media coverage and policy impact).

Grocery retailing continues to evolve. In the UK, the competitive environment is changing, as more consumers shop for groceries online and shop at a greater repertoire of grocery stores, mixed across mainstream supermarkets,

discount retailers, and convenience stores. This has blurred market boundaries, as one-stop shopping has given way to multi-stop shopping, and as different formats of retailers compete with each other for a share of the consumer's wallet or purse. New research has the opportunity to study this increasing inter-format competition, and the fickle nature of consumers' store choices and shopping habits. The availability of increasingly detailed datasets of consumers' purchasing behaviour, using consumer panel or loyalty card data, offers fresh research opportunities to examine how the evolving competitive environment is influencing consumer spending, but equally how consumer spending is shaping that competitive environment. This is an exciting time to be conducting research in the field of retail marketing and one in which I hope to continue making important contributions through building on the research papers that make up this portfolio of papers and demonstrating my expertise and knowledge about the grocery retailing sector and ongoing developments in retail marketing.

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