Concentration and Competition Analysis of the UK Grocery Retail Sector

Undergraduate essay

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Part A: Industry analysis

This paper has been conducted in order to provide statistical and empirical analysis for the UK Retail Supermarket Industry over the period from 2004 to 2013. The main source of financial and other numerical data have been gathered from ORBIS database (Orbis, 2014). In addition, various reports have been used from the Competition Commission and Office of Fair Trading into the UK grocery sector. The outline of the paper is as follows; first it provides clear definition about the investigated industry with specified product and geographical boundaries. Then it will describe the market participants, their market share, revenue and number of employees. Further it will calculate the concentration ratios, showing the change over time between the last and latest year available. At last, the factors explaining the degree of concentration in the industry will be composed.

According to the UK Standard Industry Classification of Economic Activities (Sic, 2007) supermarkets and grocery stores are, ‘non-specialised stores with food, beverage and tobacco predominating’. This description can be found under section 47.11. Many stores however specialise in particular types of food, beverage and tobacco such as butchers, dedicated nutrition shops and liquor outlets, thus absorbing market share and products are close substitutes; further two categories are added. These specialised stores can be found under section 47.19 and 47.2.

47.11 Retail sale in non-specialised stores with food, beverages or tobacco predominating
47.19 Other retail sale in non-specialised stores
47.20 Retail sale of food, beverages and tobacco in specialised stores

After the product, market and geographical boundaries have been identified this paragraph will continue to describe the industry and measure its structure and seller concentration. These indicators will look into the number and size distribution of firms relating to their number of staff which will provide a more clear understanding regarding the importance of the largest firms and reflect on the competition.

Figure 1 below, shows the total number of companies in 2013. Out of the total 63 firms 48 are small\(^1\), 11 medium and four are large. At first glance, this market structure is clearly oligopolistic competition with many smaller firms, few medium and one large which has

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\(^1\) Considering that within the industry there are many smaller firms a threshold has been set in this research to distinguish between them, thus enable to count them. The number of firms has been categorized by their market share as follows. Firms with greater than 5% market share belong to Major category, firms with less than 5% but greater than 1% is Mediums and companies with less than 1% considered as Small size stores.
monopoly power\textsuperscript{2}. Moreover, the scatter diagram in figure 2 suggests that there is a correlation between number of employees and revenue, the greater the firms’ revenue the more staff it employs.

Fig. 2. Revenue and employee numbers (Source: own calculations)

The next point which this paper is going to focus is the measure of concentration and competition in the industry. These measures are important for several reasons as stated by (Lipczynski et al, 2009). First, they provide a quantitative and precise way of comparing industries and the level of competition that each firm faces. Second, it is a major indicator

\textsuperscript{2}Monopoly firms in the UK are considered to be the ones with more than 25% control over the total market sales (Jacobson and Andréosso-O’Callaghan, 2005).
used by managers and regulation authorities to help in decision making. The two most common measures are the CR4 and Herfindahl-Hirschman Index (HHI). These measures take both the number of firms and distribution of market shares into account (Waldman and Jensen, 2003). Limitation to the CR4 ratio are that it does not reflects on changes outside the largest firms and it does not give information about allocation of market shares among these firms. In comparison, the HHI index reflects changes in the market structure between the smaller firms as well as the largest 4. It does this by the squaring effect which picks up the distribution of market shares and disparities of these between competitors (Scherer and Ross, 1990).

![Fig.3. UK Grocery Retail Market shares and revenues 2013 (Source: ORBIS, 2014)](image)

Based on the above figures gathered from ORBIS (204), we can see on figure 4 that the CR4 ratio in 2013 was 58.19% which is considered to be medium competition. However, it does not reveal that one firm, Tesco; has almost 30% control over the market sales which is a Monopoly. In comparison, the HHI index is at 0.1248 which signals a moderately concentrated market. The HHI index is closer to the 0.1000 threshold which suggest that the market is more competitive despite the strong market power which the top 4 firm have. The reason for this is that because HHI incorporates the smaller firms. As a general rule, the more firms there are in a market, the lower the HHI index, ceteris paribus

3 The concentration ratio (CR) is the cumulative share of ‘n’ firm, in our case is the top 4. Therefore, the four-firm concentration ratio (CR4) is the sum of top 4 firms revenue divided by the total market revenue. (Liczynsky et al; 2005)
4 High concentration ratio = 80-100% controlled by largest 4 firms; Medium concentration ratio = 50 - 80% controlled by largest 4 firms; Low concentration ratio = 0 – 50% controlled by largest 4 firms
5 HHI<1,000 ->competitive market; HHI between 1,000 and 1,800 -> moderately concentrated
HHI >=1,800 -> highly concentrated market.

<table>
<thead>
<tr>
<th>Company</th>
<th>Share</th>
<th>Revenue</th>
</tr>
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<tbody>
<tr>
<td>Tesco</td>
<td>28.82%</td>
<td>£ 63,835,000</td>
</tr>
<tr>
<td>Sainsbury</td>
<td>10.84%</td>
<td>£ 24,015,000</td>
</tr>
<tr>
<td>Asda</td>
<td>10.52%</td>
<td>£ 23,299,000</td>
</tr>
<tr>
<td>Morrison</td>
<td>8.02%</td>
<td>£ 17,761,000</td>
</tr>
<tr>
<td>Aldi</td>
<td>2.38%</td>
<td>-</td>
</tr>
<tr>
<td>Lidl</td>
<td>0.11%</td>
<td>-</td>
</tr>
<tr>
<td>Medium</td>
<td>29.68%</td>
<td>-</td>
</tr>
<tr>
<td>Small firms</td>
<td>7.08%</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total industry revenue</strong></td>
<td><strong>£ 221,514,770</strong></td>
<td></td>
</tr>
</tbody>
</table>
(Waldman and Jensen, 2007). Moreover, we can see a sharper increase the HHI in year 2010-2011 which indicates a decrease in the number of firms. Then in 2011-2012 the same amount of firms entered the market. Such change can be explained by many factor such an mergers and acquisitions (M&A) of small firms by a larger competitor or even an external shock (war, disaster, financial crisis) which forced small shop closures.

Fig. 4. CR 4 and HHI index 2004-2013 (Source: own calculations)

However, by looking at figure 5, it can be seen that such a change in this short time period was nothing to do with the number of firms. The real reason was a fluctuation in the total industry revenue thus rapid change in the HHI index. This can be better depicted in 2004 where a 23% increase of total revenue (+£35m) pushed down the HH index as more firms had sudden increase in market share. This is a negative correlation.

Fig. 5. UK Grocery Retail Revenue and Growth rate 2004-2013 (Source: own calculations)

By comparing the results from 2004 and 2013 the following can be summarized. The degree of concentration has reduced, the CR4 ratio decreased by 7.44% while the HHI dropped by 201 points. Both measures have a consistent evolution but the HHI shows some
more vivid fluctuation due to its sensitivity. In overall, the concentration and competition in the UK Grocery Retail industry has been increased.

Moving onto the next point, the paper will investigate the implications of an increase in the degree of concentration over time. In the first scenario, we illustrate the takeover of Sainsbury by Tesco. We can see that this merger would increase the CR4 level by only 5% leaving the industry moderately concentrated. However, the HHI is now passed the 0.1800 threshold which moved the industry from almost competitive to highly concentrated. Again, the HHI gives a better view of the overall competition.

<table>
<thead>
<tr>
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<th>Pre-merger</th>
<th>Post-merger</th>
<th>∆</th>
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</thead>
<tbody>
<tr>
<td>CR4</td>
<td>58.19%</td>
<td>63.23%</td>
<td>5.04%</td>
</tr>
<tr>
<td>HHI</td>
<td>0.12483</td>
<td>0.18732</td>
<td>0.06248</td>
</tr>
</tbody>
</table>

Table1. Scenario of Large-Large firm takeover (Source: own calculation)

In the second scenario, depicted in table 2; a small firm takes over another small firm. The CR4 left unchanged as it only considers the top 4 firm. In contrast, the HHI index picked up the change of 2 small firms merger but this was a minor change in concentration as of 0.00001.

<table>
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<tr>
<td>CR4</td>
<td>58.19%</td>
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<td>0.00%</td>
</tr>
<tr>
<td>HHI</td>
<td>0.12483</td>
<td>0.12484</td>
<td>0.00001</td>
</tr>
</tbody>
</table>

Table2. Scenario of SME-SME firm takeover (Source: own calculation)

At last, this part will introduce the factors which may explain the level of concentration in the UK supermarket sector. The reason for the continuously moderate concentration industry is two-fold. On the one hand, due to consumer, supplier and competitor complains the Office of Fair trading (OFT) and Competition Commission agreed to mitigate collusions, mergers and power of large firms by restriction on mergers and growth (Seely, 2012). The aim of this limiting is to enable entry of new firms, promote innovation, wider selection of products, shops for consumers and protect suppliers. Another constrain is
that local councils raised concern for ‘super marketization’ of the high streets and proposed extra tax called ‘Tesco-Tax’ to stop expansion of large firms (Simpson, 2014).

On the other hand, large companies such as Tesco abusing market power thus limiting entry to the industry (Sloman et al, 2013). First, due to the huge market share they are able exploit buying power on their suppliers and force price down. Although, this means saving for the consumer, it drives small convenience stores out of business and hits supplier, producers very hard. Second, due to the interdependent nature of oligopolistic markets, firms closely monitor the major competitor’s prices and setting their own pricing strategy accordingly. This combined with the price elasticity in food and beverage retailing, makes demand curve kinked, forcing everyone to follow the price (Figure, 6). Since the hard-discounters entered the UK market with very low prices, large competitors started a price war where some products offered below costs in order attract consumers (loss-leader pricing) and even cheaper to drive out competition (predatory pricing) (Kantar, 2013). Figure 6 shows, that this makes difficult for small firms and new entrants with low economies of scale to compete on price as they have higher average costs.

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6 Supermarkets apply ‘shadow-pricing’ where observing competitors’ prices and offering equivalent or very close price. This form of ‘unwritten agreement’ could be considered as a tacit collusion.
Conclusion

In conclusion, the UK Grocery Retail industry has been identified as a moderately concentrated market. The paper found that, in this oligopolistic structure there are a few larger dominant firms with many small-medium sized convenience stores. Further, in two hypothetical scenarios of a merger and acquisition, it has been concluded that merger of larger firms would significantly increase concentration. In case of smaller firms the result was irrelevant. Moreover, the CR4 and Herfindahl-Hirschman Indexes revealed that the industry became less concentrated since 2004 which can be explained by government regulations aimed to motivate competition and increase in medium size stores revenues. At last, this paper has some limitations. Although, Orbis database gives a fair amount of sample size of 70 firms in the UK per year, in reality there are thousands of small convenience stores which are not listed. Further, the data on physical location of the stores were missing in many cases. Therefore, a larger sample size with actual locations could have highlight regional differences in revenues and thus maybe pricing strategies. A greater depth of information may have been obtained by having access to national databases with record of these smaller stores. However, this research gives as starting point in market concentration on a national level. Further empirical research is needed to understand concentration in rural areas as in larger cities.

Part B: Public debate

Based on the thematic diary entries, the following summary and critical discussion is concluded. The most common headlines in the news in the past few weeks were mainly about the changing market structure, price war and hard-discounters, Aldi and Lidl. Although, price differentiation seems to be a global trend, in the UK it is said to be the result of hard-discounters. In the past two decades, the top UK supermarkets instead of engaging in price war, tried to increase the non-price competition and keep prices of goods at a profitable level. They did by using shadow pricing where competitor’s pricing strategies were closely monitored and the same price has been offered. In economic textbooks this could be described as tacit collusion where the dominant market players fix the price to maintain profits but using non-price competition to gain market share. Other differentiation strategies are loyalty cards, in store pharmacy and cafeteria for example.
However, the presence of hard-discounters and their extremely low prices forced the big players to reduce prices and cut costs. This is because the oligopolistic food retail has a kinked demand curve where going to the opposite way against the price trend would only result in greater losses. Although, this is only beneficial for the customer in a way, it hurts food manufacturers and suppliers. Big supermarkets exercise their market power and forcing suppliers to reduce price. The results are shocking as 28% increase in insolvency among food manufactures compare to last year. Further, this creates a barrier to enter for new companies as they cannot earn super-normal profit but not even normal profit. The existing small grocery stores which have little economies of scale, cannot keep up with the falling prices thus also forced to close down their shops. This is made worst by supermarkets opening so called ‘top-up’ shops (Tesco express, Sainsbury Local) instead of out-of-town megastores. They realised that consumers have less time and money to spend therefore as an alternative of one big weekly shopping they use top-up shops more often.

At this point the government had to step in and intervene by appointing a supervisor for the industry to stop big firms exploiting suppliers. Moreover, local councils imposed ‘Tesco-Tax’ to stop big retailers taking over the high streets in the UK and promote local entrepreneurship. Although, big firms found loopholes to continue price cutting, if this continues the government might have to establish price-floors to protect producers and suppliers. Arguably, then the increased cost would be then passed onto the consumers.

Some commentators and specialist in the industry debate that when prices cannot go any lower or price-floors introduced, hard-discounters will have to find alternative ways to stay in the competition. The reason for this is that they offer nothing other than cheap and good quality of products therefore many customers will more likely switch back to the other firms. The past years have brought many new services such as home delivery, smart phone applications and loyalty schemes. The providers of phone-applications and loyalty cards have the advantage of continuously gathering important data about shopping habits. These sophisticated tools enable big companies for further market segmentation and targeted offerings. By the information they can analyse if the customer is on budget and how much is the spending limit, see the consumption trends such as diet in certain areas and predict when students receive their student loans.
References


