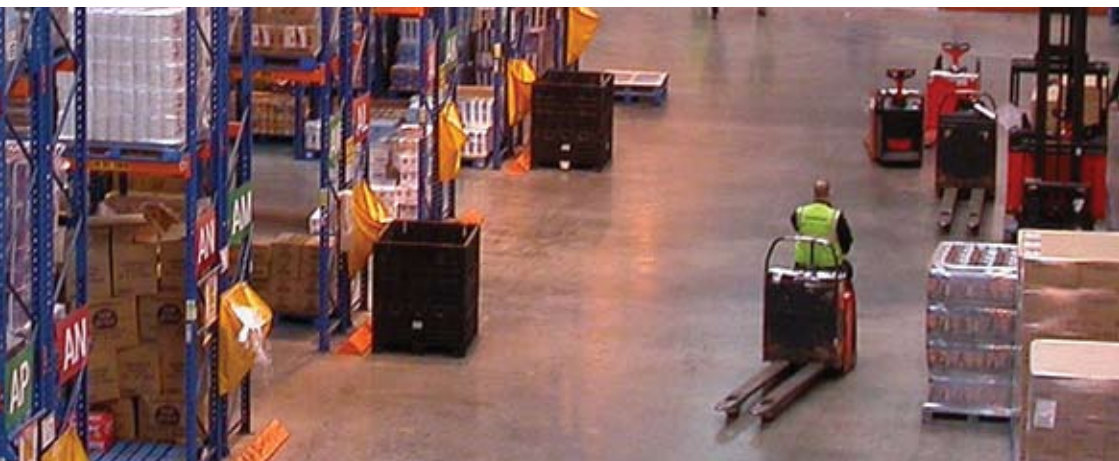


# From A to B

A snapshot of the UK food distribution system



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Printed on chlorine free 100% post-consumer recycled paper.

Published April 2009

ISBN 978-0-9549218-5-9



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Cover image: Distribution Centre by Nick Saltmarsh

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# Summary

## From A to B: a snapshot of the UK food distribution system

Our food takes quite a journey before it reaches us, but we rarely notice the logistical feat.

Food travels from overseas via a handful of ports and from over 300,000 farms across the UK into distribution networks dominated by the major food retailers. Increasingly, the transport and warehousing from manufacturer to store is controlled by the supermarkets or their third-party logistics agents.

Nonetheless wholesalers – both those offering a delivery service and cash-and-carries – continue to service over 50,000 convenience stores, and many manufacturers deliver directly to smaller stores or to the distribution centres of the biggest retailers.

The foodservice sector – pubs, cafés, restaurants and canteens – is worth almost the same as food retail, but is considerably less concentrated. While there are big operators providing extensive delivery services, distribution systems are more patchwork than in retail.

Finally, the forgotten journeys in the ‘food miles’ debate are those taken by consumers themselves. Responsible for nearly half of all vehicle kilometres involved in transporting food, our weekly shopping trips are highly car-dependent, although innovations in town centre convenience retailing may see a rise in the number and frequency of walking and cycling trips to shop for food.

# 1. Introduction

Food is a big deal. In the UK we buy around 20 million tonnes of it each year – only to throw away roughly a third of it.<sup>1</sup> We spend around £129 billion pounds a year on food and drink, and even more if we include alcohol.<sup>2</sup> Food is also responsible for around 19% of the UK’s greenhouse gas emissions.<sup>3</sup>

People care about where food comes from – we see this in everything from the Slow Food movement to ‘buy British’ campaigns.<sup>4</sup> Money worries mean people are also rethinking what they buy, where they buy it from and how they get there. But despite this interest in the provenance and purchase of our food, most of us have little idea how it actually travels to us. Perhaps this shouldn’t surprise us: it is only when the distribution systems come under pressure – during fuel shortages, for example<sup>5</sup> – that most of us have immediate cause to question their robustness.

This report provides a ‘snapshot’ of the UK’s food distribution system. Although we use the term ‘system’, what we describe is not a single entity, but a web of individual supply chains, some linked, others not. Many food items arrive on our plates after complex journeys through multiple processing systems, via several countries and many modes of transport; others have travelled a matter of metres from plot to plate, pausing only for a quick rinse in the kitchen.

In this report we try to capture this diversity to give an overview of how the food that we eat in the UK gets from A to B. We start by looking at the overall shape of the UK food distribution system, then follow the journey of food from overseas and UK producers via processors and manufacturers, wholesalers, retailers, foodservice companies and finally consumers' own trips.

## 2. Scale and structure of UK food distribution

The UK's food sector is huge. If we include drink but don't count farming and support industries (supplying processing machinery, for example), Figure 1 shows that the sector is responsible for 3.7 million jobs and is worth £79.4 billion to the UK economy.<sup>6</sup>

Figure 1 also provides a very general sense of how food reaches our plates. It shows that some food travels directly to us from primary producers (either in the UK or overseas), but in the main it takes a chain of journeys via food manufacturers, wholesalers, retailers and foodservice companies, plus our own trips between the store and the home. It also shows how the same amounts of food (by value if not volume) come through the retail and foodservice (catering) supply chains.<sup>7</sup>

Sometimes these journeys are relatively simple and sometimes they are exceptionally complex. At one end of the scale is the back garden-grown potato. At the other is the sophisticated restaurant dish or highly-processed ready meal featuring ingredients from all over the world. Figure 2 illustrates the steps that three different food products might take along a supply chain via a multiple retailer.

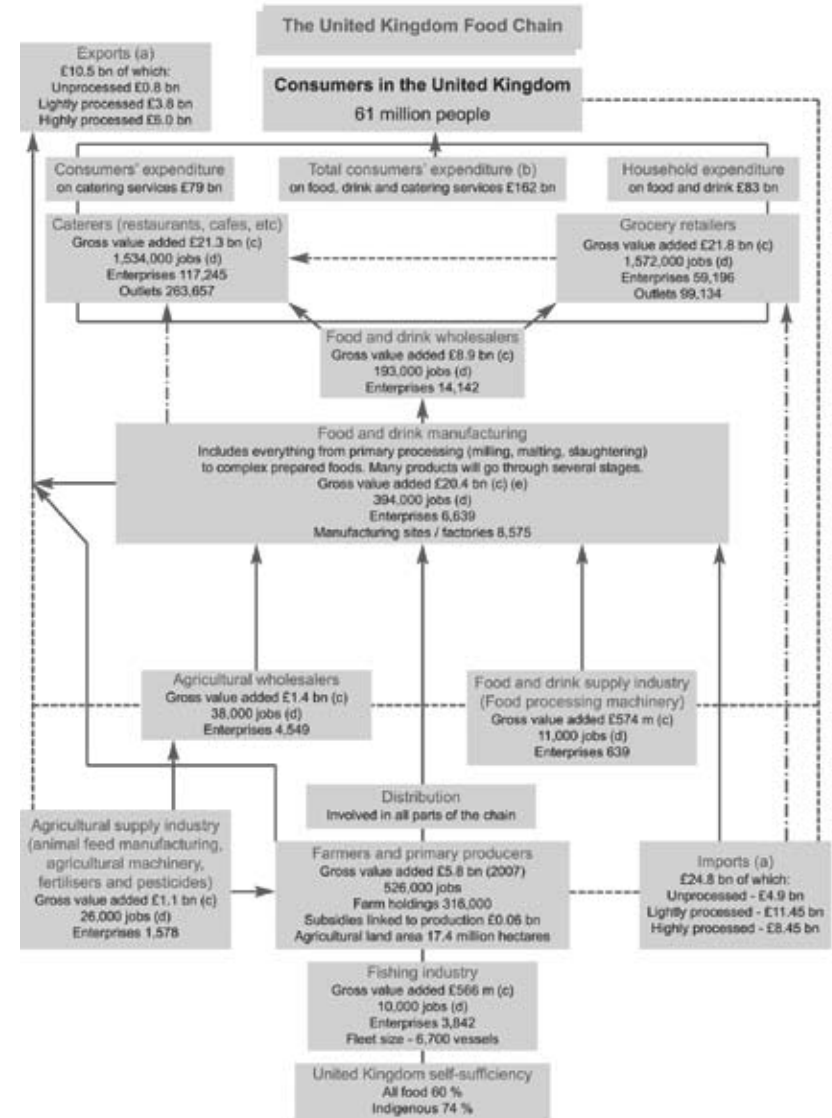
What neither Figure 1 nor Figure 2 show is the nature of the journeys that the food takes along the supply chain – by truck, van, rail, air, sea, car, public transport, bicycle, or on foot. AEA Technology's influential 2005 report 'The

validity of food miles as an indicator of sustainable development' provides a clearer picture, suggesting that in 2002 the split was roughly as shown in Figure 3.

It is striking how our car-based shopping trips make up nearly half of total vehicle-kilometres travelled, and how road transport in total (cars, vans, trucks) dominates the picture. The most recent statistics suggest that we drive over 19 billion kilometres for our food shopping, while food also travels around 9 billion kilometres by HGV, with 40% of these HGV kilometres taking place overseas. Air freight, by comparison, is responsible for only 31 million kilometres.<sup>8</sup>

It is worth remembering however, that the distance food travels does not map neatly onto its environmental or social consequences: air freight is considerably more carbon-intensive than trucking, which in turn is more carbon-intensive than shipping. 'Food miles' are a useful shorthand for a wide-ranging debate about problems relating to the food system, but they are not a direct proxy for carbon emissions. This is discussed further in our report on 'Food distribution: an ethical agenda'.

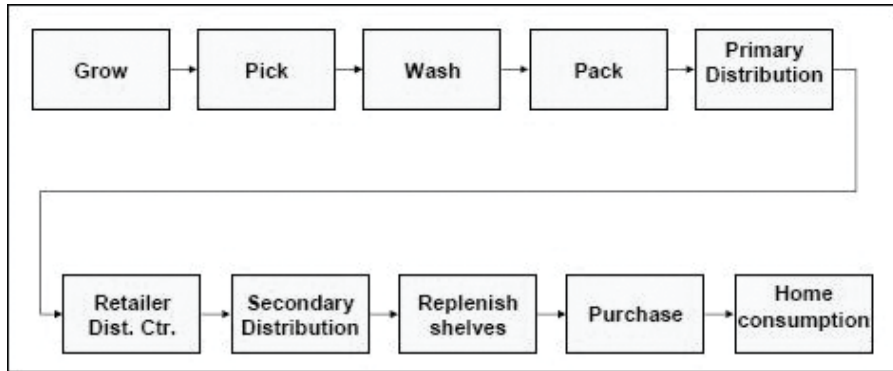
**Figure 1:** Economic summary of the UK food chain<sup>9</sup>



(a) Overseas Trade data are provisional for the full year 2007 from HM Revenue and Customs.  
 (b) Consumers' expenditure, properly known as household final consumption expenditure, is a provisional estimate by Delta for 2007 calculated at current prices.  
 (c) Gross value added figures are provisional data from the Office for National Statistics for 2006 calculated at basic prices (market prices less taxes plus subsidies).  
 (d) Employee data are for Q3 2007 from the Office for National Statistics.  
 (e) GVA for food manufacturing does not include farm animal feed, which is included in agricultural supply industry.

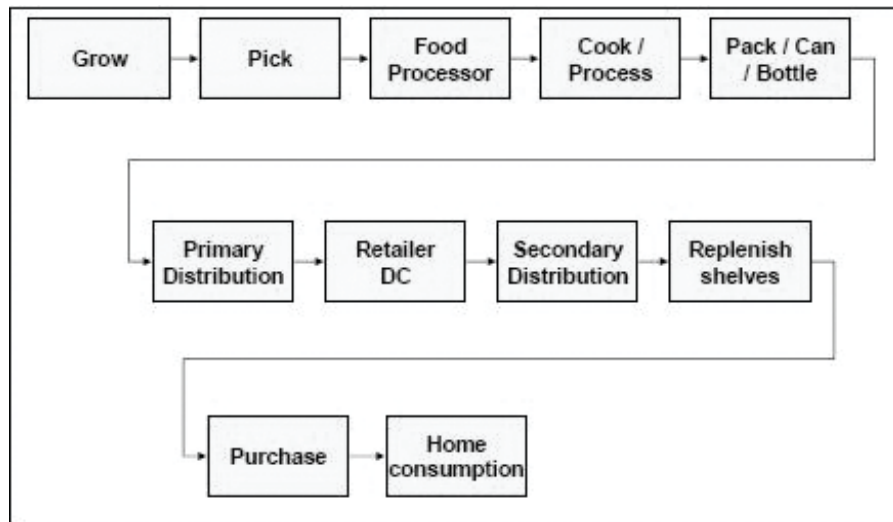
**Figure 2:** Supply chain complexity<sup>10</sup>

1: Route to market for a simple low-process food product (e.g. new potato)

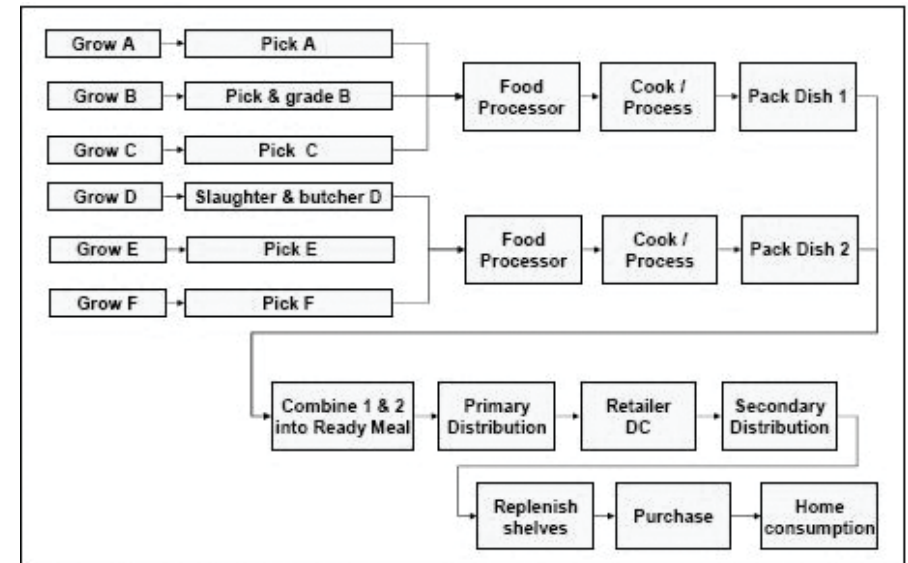


2: Route to market for a simple medium-processed food product (e.g. bread)

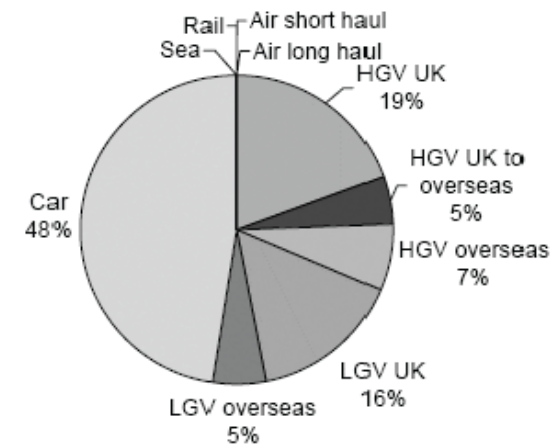
NB: DC = Distribution Centre



3: Route to market for a complex, highly-processed food product (e.g. ready meal)



**Figure 3:** UK food vehicle-kilometres by transport mode (2002)<sup>11</sup>



### 3. From overseas: imports

The UK is self-sufficient in 61% of all food, or 74% if you leave out foods like tropical fruits that we don't generally grow here. This ratio has dropped 11 percentage points since 1995.<sup>12</sup> We import significantly more than we export, producing a trade deficit in food, feed and drink of £15.2 billion in 2007.<sup>13</sup> In some cases we import and export significant quantities of the same product.<sup>14</sup>

In some food groups we are particularly dependent on overseas supply. The UK imports more than 90% of its fruit and 38% of its vegetables, whereas it is largely self-sufficient in milk.<sup>15</sup>

While we source food from all over the world, around 70% (by unprocessed value) comes from the UK and just five other countries: UK (49%), Netherlands (6.7%), Spain (5.8%), France (3.9%), Ireland (2.6%) and Germany (2.5%).<sup>16</sup>

With around half of our food originating in the UK and a further fifth arriving from near neighbours, it is unsurprising that air freight – and even shipping – make up a very small proportion of total 'food miles'. Nonetheless, of our imports, "the vast majority of food entering... the UK will travel by ship, following a road journey in its country of origin"; 91% of imported food (by weight) arrives by ship, with only small amounts travelling by air or through the Channel Tunnel.<sup>17</sup> Air freight, while remaining a small proportion (less than 1%) of total food transport, has been the fastest

growing sector in recent years. The expansion of food air freight may be held back by the economic downturn, which saw a 23% drop in total global air cargo in December 2008.<sup>18</sup>

A very significant proportion of UK imports that are not air freighted arrive through a small number of ports. There are three main types of import method:

- bulk shipping (for unprocessed commodities);
- container-based shipping;
- roll-on/roll-off (RORO) traffic (lorries on ferries or through the Channel Tunnel).

Bulk shipping represents a quarter of all food and feed imports by weight; 64% of this travels through only three UK ports: Liverpool, London and Belfast. The remaining three-quarters of food imports travel in discrete 'units', be they basic containers or complex, refrigerated trailers. Assuming that food follows a similar pattern to all imports, container traffic is also highly concentrated, with three ports in the South East of England (Felixstowe, London, Southampton) responsible for 63% of container imports. RORO imports travel to a wider range of ports, but between them Dover and the Channel Tunnel account for 41% of this truck-based traffic.<sup>19</sup> Greater detail is given in Table 1.

The concentration of food imports through a small number of regions and ports affects the nature of the distribution system within the UK and vice versa: "Good inland transport links and proximity to major conurbations and distribution centres" are cited as key reasons for the success of South East ports.<sup>20</sup>

Food processed outside the UK is an increasing proportion of total imports, making it likely that more of the supply chain – and hence more of the total miles travelled – will be located overseas. It also means that 'unitised' imports are on the increase relative to bulk. At least in the short term this is likely to reinforce the dominant role of ports in the South East (and supply chains geared around the region), although recent investment decisions elsewhere may lead to a shift in emphasis over time.<sup>21</sup>

**Table 1:** Proportion of total traffic arriving at major UK ports, by traffic type, 2004<sup>22</sup>

Ports	Bulk (25% of total agricultural products)	Container <sup>a</sup> (approx 30% of total agricultural products <sup>b</sup> )	RORO <sup>a</sup> (approx 45% of total agricultural products <sup>b</sup> )
Dover	-	-	25%
Liverpool	27%	8%	6%
Felixstowe	-	34%	3%
London	20%	12%	4%
Belfast	17%	3%	4%
Southampton	3%	18%	-
Grimsby & Immingham	5%	2%	5%
Hull	2%	4%	2%
Medway	-	8%	-
Harwich	-	-	5%
Larne	-	-	5%
Portsmouth	-	-	4%
Bristol	7%	-	-
Other sea ports	19%	12%	21%
Channel Tunnel			16%
Total	100%	100%	100%

Notes: <sup>a</sup>The percentages for containers and roro are for total traffic, as food-specific data is not available

<sup>b</sup> The proportions for container (30%) and RORO (45%) traffic are crudely assumed to be the same for agricultural as for all products.

Source: DfT, Maritime Statistics 2005 and Focus on Ports (2006)

Given the importance and concentration of ports, the UK may be seeing a move away from distribution networks around hubs close to the Midlands motorway network (discussed in Section 6 below), towards ‘port-centric’ logistics.<sup>23</sup>

## 4. From the farm and the sea: UK primary production

With around half of the food consumed by the UK’s high-density population being supplied from domestic sources, agriculture is a significant land user, taking 77% of the country’s total area.<sup>24</sup> Particular types of production are concentrated in different areas of the UK; fruit and sugar, for example, are particularly concentrated in the East of England, while the greatest numbers of sheep are to be found in the uplands of Wales, northern England and Scotland.<sup>25</sup> Fish landings are similarly concentrated, with three ports – Peterhead, Lerwick and Fraserburgh – responsible for 52% of total landings into the UK.<sup>26</sup> Primary processors are therefore similarly concentrated, close to the main areas of production.

UK farming has not consolidated as far or as fast as the industries in the supply chain. With around 316,000 farm holdings across the country<sup>27</sup> it is a logistical feat to get produce to market.

While direct sales (through farm shops, farmers’ markets, pick-your-own and box schemes) have grown rapidly over recent years, they still represent a tiny fraction of the market – £2 billion out of total spending on food and drink of £162 billion.<sup>28</sup> In consequence, while this sector relies on a mixture of farmers’ own vehicles, couriers and, in the case of the bigger box schemes, larger van-based operations (all of which may be considerably less financially and carbon efficient than the networks of the multiple retailers),

in terms of sheer volume they are relatively insignificant in the context of the large scale supply chains which feed most of the country.

As the Competition Commission notes: “Farmers generally sell their produce to marketing agents or processors prior to it being supplied to supermarket chains or grocery wholesalers. It is less common for primary producers to sell directly to grocery retailers”.<sup>29</sup> The overwhelming majority of all this produce travels by road.

## 5. Processors and manufacturers

Food manufacturing is the largest manufacturing sector in the UK, directly employing half a million people and purchasing two-thirds of British agricultural output.<sup>30</sup>

In times gone by, manufacturers were considerably more influential in how food gets around. As we will see in Section 6, control of the distribution system has shifted away from manufacturers and towards the major supermarkets over the last 40 years. Increasingly, supermarkets (or their contractors) pick up goods from manufacturers, rather than manufacturers delivering them to supermarket depots.

Nonetheless many manufacturers and processors do still deliver direct into retailers’ distribution centres and into the remaining wholesale chains.

## 6. Retailers

In many respects, the UK's retailers are the engine of the food distribution system. The majority of food consumed in the UK (excluding food from foodservice outlets) is purchased from grocery stores: the amount of food gained by households from gardens, allotments and free sources is negligible, accounting for an average of 18 pence per person per week in 2000, from an average weekly food expenditure of £15.20 per person.<sup>31</sup> Anecdotal evidence suggests the proportion of food people grow for themselves might have risen marginally in recent years, but it remains small.<sup>32</sup>

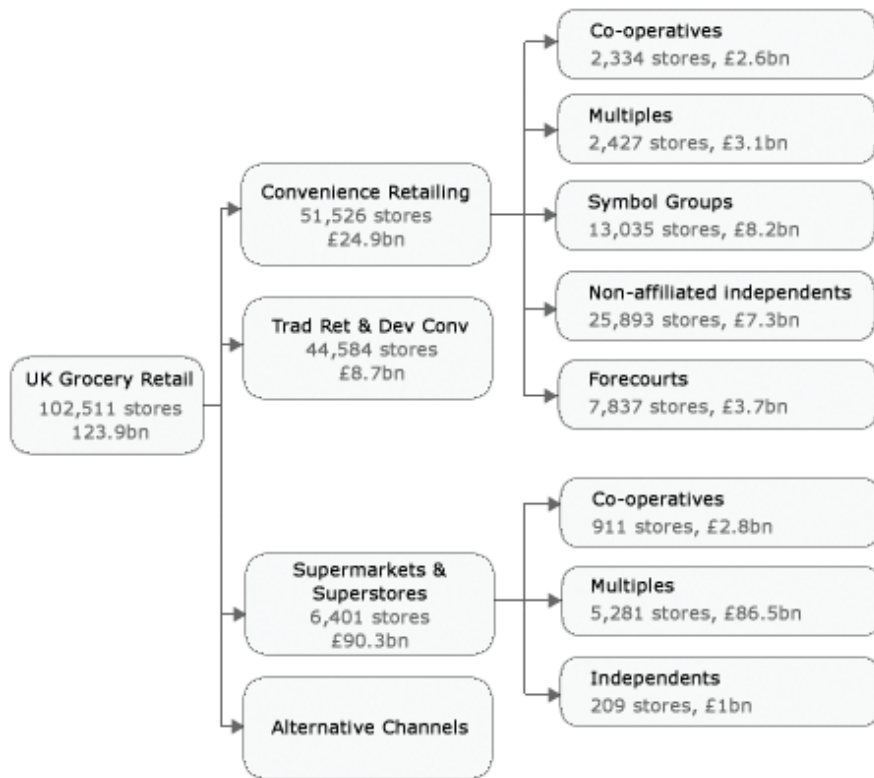
UK food retail is highly concentrated: Tesco, Asda, Sainsbury's, and Morrisons account for 76% of the market.<sup>33</sup> In 2006, 102,511 grocery stores<sup>34</sup> were operational in the UK. The IGD categorises these into four types, as shown in Table 2.<sup>35</sup>

**Table 2:** The IGD's classification of grocery retailers

Supermarkets and Superstores	Convenience Retailing	Traditional Retail and Developing Convenience Stores	Alternative Channels
<p>Supermarkets: sales area of 3,000-25,000 square feet. Sell a broad range of grocery items.</p> <p>Superstores: sales area over 25,000 square feet. Sell broad range of grocery items, as well as non-food items.</p>	<p>Sales area under 3,000 square feet. Sell products from at least eight different grocery categories. Open for long hours.</p>	<p>Sales area under 3,000 square feet. Examples are newsagents, off-licences and some forecourts. Traditional retailers include grocers, fishmongers and butchers.</p>	<p>Includes kiosks, markets, post offices, doorstep delivery, vending, home-shopping.</p>

In practice, UK stores break down as shown in Figure 4.<sup>38</sup> The dominance of the multiple retailer-owned supermarket format is evident.

**Figure 4:** Categorisation of grocery retailing<sup>39</sup>



### 6.1 Supermarkets and superstores

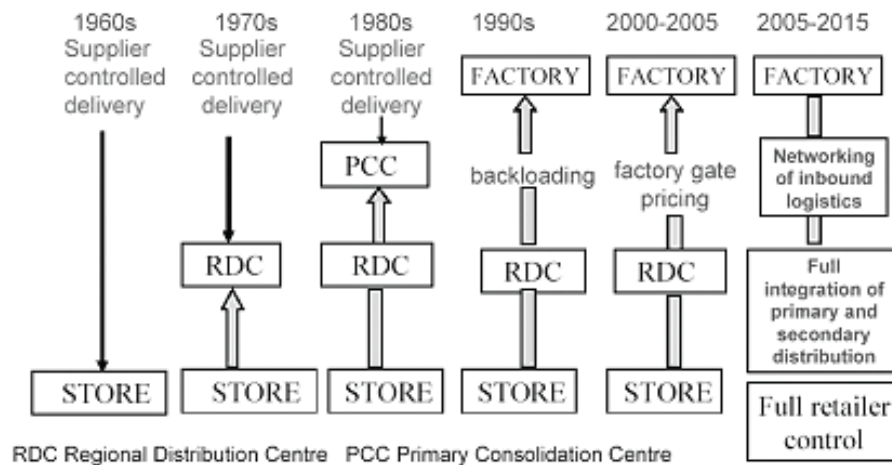
The concentration of grocery retail is reflected in concentrated distribution networks. The big multiple retailers have significant control over the distribution networks that make up their supply chains. In many cases multiple retailers will effectively organise the trucking and warehousing from field to store, even if it is third party logistics companies (3PLs) who are contracted to carry out the practicalities. The supermarkets tend to purchase directly from manufacturers or fresh produce category managers, bypassing the traditional wholesale structures.

The supermarkets' increasing control over their supply chains has mirrored their rising power since the 1960s. Traditionally, food manufacturers were responsible for the delivery of goods to retailers. Items were transported by the manufacturer or a third party logistics operator (3PL), and were delivered directly to the supermarket store. During the 1970s and 1980s, however, in a drive for increased efficiency, retailers developed the infrastructure in place today whereby goods are channelled through National and/or Regional Distribution Centres (DCs) before arriving at the retail site. By 1990, Regional Distribution Centres (RDCs) had been installed by most major grocery retailers, including Asda, Co-op, Safeway (now Morrisons), Sainsbury's, Somerfield and Tesco.<sup>40</sup> Over 85% of these retailers' products now pass through centralised depots.<sup>41</sup> The main exceptions are 'morning goods', such as milk, eggs and bread, which are still delivered directly to stores.<sup>42</sup>

With the introduction of RDCs, a concurrent shift in control of transport occurred. Retailers began to operate the 'secondary distribution' of products between distribution centres and retail sites, thus controlling the lower part of the food supply chain. Manufacturers had a diminished distribution role, being responsible only for the primary distribution of goods to retailers' distribution centres. This shift in control over the supply chain is illustrated in Figure 5.

The extent of this shift has varied between retailers. Tesco, for example, takes full responsibility for the primary distribution of goods from manufacturers to its distribution centres, as well as the secondary distribution of products from here to their stores. It was one of the first major multiples to do this, beginning in 2001, and adopted the strategy to support its low price position.<sup>43</sup> Sainsbury's, on the other hand, operates mainly by suppliers delivering to its Primary Consolidation Centres (see below), and considers the goods to belong to the supplier until a Sainsbury's vehicle (or vehicle belonging to a 3PL contracted by Sainsbury's), collects these for onward delivery to stores.<sup>44</sup> The Sainsbury's Hams Hall depot near Birmingham, for example, receives under one tenth of incoming goods in vehicles belonging to Sainsbury's.<sup>45</sup> These are likely to be goods collected during 'backhaul', where what would otherwise be an empty-running vehicle is used to collect goods.

**Figure 5:** Changes in control over the distribution system<sup>46</sup>



The substitution of goods being delivered to store from retailers’ RDCs – as opposed to directly from a manufacturers’ depot – generally increased the distance of this journey leg. This generated more tonne-kilometres, but the improved efficiency of vehicle loading between RDCs and stores led to a reduction in vehicle-kilometres, as fewer trips were needed.<sup>47</sup>

The distribution structure has now developed further, with some depots specialising in the handling of particular food categories, such as ambient, chilled or frozen.<sup>48</sup> The operations in these different types of distribution centre vary. Depots handling chilled fresh produce, for example, do not store goods, as they must leave the depot within 24 hours of arrival.<sup>49</sup> ‘Composite’ distribution centres handle goods from all temperature bands.

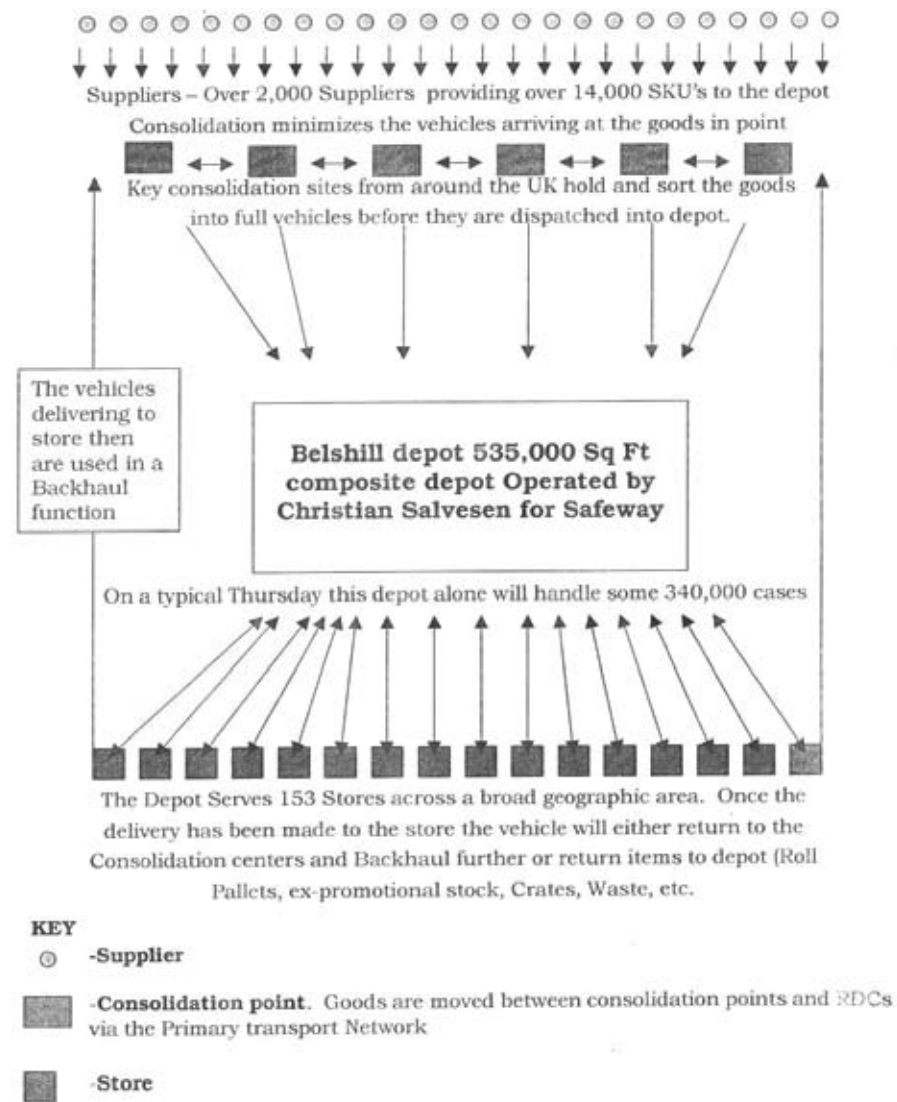
During the 1980s, Primary Consolidation Centres (PCCs) were introduced to further increase efficiency in the supply chain. They reduced the distance between the supplier and the point at which goods entered the retailer’s system, enabling more frequent, daily deliveries to be made and reducing the volume of stock held in storage by the retailer.<sup>50</sup> Daily journeys to a retailer’s RDC had been uneconomical and therefore unviable for small-

scale suppliers, and even large food manufacturers on the whole had not distributed enough goods from particular plants to particular retailers for such frequent, daily deliveries to be economically possible.<sup>51</sup> By channelling goods through PCCs, suppliers could combine daily orders to specific DCs with other suppliers, thus achieving higher vehicle load factors.

Consolidation Centres are used particularly for fresh produce, because suppliers tend to be situated in dispersed locations. Several retailers sometimes use one PCC in such cases, so that local suppliers can deliver to a single site in a region.<sup>52</sup> A large proportion of frozen food is also channelled through PCCs, as it needs to move through the supply chain particularly rapidly.<sup>53</sup>

Goods arriving at a PCC from a number of suppliers are often re-packed, and assembled into store-specific orders. A full vehicle load can then be transported to a retailer’s RDC. This system not only lessens transport costs, but also results in fewer vehicles delivering directly to an RDC, thus greatly reducing congestion.<sup>54</sup> The concept is shown in Figure 6.

**Figure 6:** Operation of Primary Consolidation Centres<sup>55</sup>



The relatively new phenomenon of 'Factory Gate Pricing' (FGP) has reduced the distribution role of manufacturers further still.<sup>56</sup> Under this system, the manufacturer quotes the price of goods to the retailer with and without delivery costs, and the retailer decides whether it would be cheaper to collect the goods from the supplier, rather than the supplier delivering them. Collection may be by a haulier employed by the retailer, or an in-house vehicle.

A consensus has not yet been reached about the effects of FGP upon vehicle mileage, but they must vary from case to case. FGP builds on the increasing trend of backhauling goods. Backhauling is the movement of goods from a supplier to a retailer by a vehicle that is on its return journey, having previously made a delivery in the local area. The aim is to minimise empty vehicle journeys, and has been adopted in response to labour costs, environmental pressures and European legislation regarding waste and emissions.<sup>57</sup>

When backhauling was first introduced, vehicles were mainly used to transport waste or packaging back through the supply chain. Increasing volumes of goods are now being transported in this way, however, and Information and Communications Technology (ICT) has enabled backhauling systems to become more sophisticated in the complexity of the routes they take.<sup>58</sup> Third party logistics companies may operate backhauling across a variety of sectors, for example collecting food from a local supplier having delivered an entirely different product at a nearby location.<sup>59</sup>

A large proportion of retailers' operations are outsourced to Third Party Logistics (3PL) providers. This applies to the running of PCCs as well as transport, and different companies seem to be employed to operate different depots. Sainsbury's, for example, uses Christian Salvesen to operate its depot at Elstree, and Exel to do so at Emerson's Green, Hackbridge and Rotherham.<sup>60</sup> Tesco uses over a dozen 3PLs to operate its numerous consolidation centres.<sup>61</sup> The IGD suggests that approximately half of the volume of goods destined to major retailers passes through a third party warehouse, and that 54% of this volume is transported by a third party haulier.<sup>62</sup>

The development of the supermarkets' NDC, RDC and PCC networks has hinged on – and cemented – the dominance of road travel. RDCs have

primarily been located close to the UK's trunk road system, with easy access to the motorway network in the Midlands being a key consideration.

A key characteristic in the operations of multiple retailers' supply chains over the past twenty to thirty years has been 'Just-In-Time' or 'Quick Response' delivery. The flow of goods through the supply chain is driven by what is needed in store, so smaller but more frequent deliveries are demanded at each node in the supply chain (to PCCs, distribution centres and to stores), as and when needed. The system aims to decrease stockholding and hence storage costs, and to increase the rate of turnover of goods. Waste is also minimised, in theory, because transport of unwanted goods is avoided.

The philosophy of Quick Response Delivery has significant implications for both transport modes and frequency of deliveries. Within the UK, the majority of goods are transported by road rather than rail, inland waterways or around the coast, because supermarkets lay down narrow time slots within which goods must be delivered to their RDCs.

Demands for frequent stock replenishment have also contributed to the current situation in which produce is air freighted daily into the UK; baby sweet corn destined for Tesco, for example, arrives daily from Zambia. Within the UK, DCs receive multiple orders throughout the day, as stores call off what they need to keep their shelves stocked, and vehicle fleets are often used around the clock.<sup>64</sup>

Within the past few years, a number of the biggest retailers have shown increasing interest in 'local' or 'regional' sourcing. Both Tesco and Waitrose have taken on small producers that make only enough to supply one store, and their small producers on average supply between 10 and 20 stores.

Asda is growing its network of local 'hubs' for consolidating produce from regional suppliers. Asda claim that their first ten hubs reduced road miles by 5.2m, as producers have shared transport of goods to these hubs.<sup>65</sup>

While road dominates, supermarkets have recently been promoting their experiments in other modes, including barges and rail.<sup>66</sup>

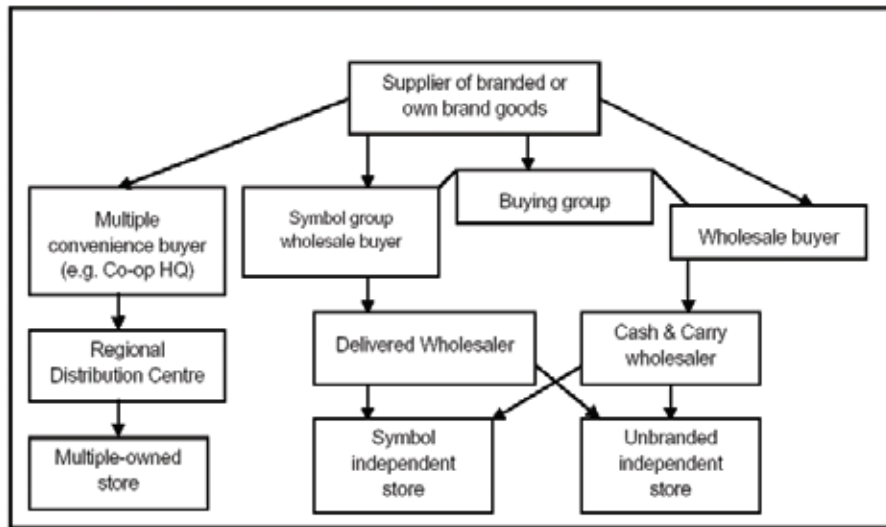
## 6.2 Convenience stores

Convenience stores represent a far smaller proportion of the total groceries market than supermarkets, yet they are far greater in number. Convenience stores are smaller than supermarkets, with a sales area of under 3,000 square feet (280 square metres). By definition they have long opening hours, seven days a week, and sell a more restricted range of goods than supermarkets.<sup>67</sup> Largely catering for local and passing trade buying 'top-up' items and snacks, significant product lines include milk and dairy, bread and bakery products, savoury snacks, food-to-go, confectionary, newspapers and magazines, and tobacco products.

In 2006, there were 51,526 convenience stores in the UK, altogether receiving 20p in every pound spent by consumers on food and grocery.<sup>68</sup> Convenience stores are operated either by co-operatives (e.g. The Co-operative Group), forecourts (e.g. BP or Shell), multiple retailers (e.g. Tesco or Sainsbury's), symbol groups (e.g. SPAR) or non-affiliated independent owners. Figure 4, above, shows the store numbers within each segment and the corresponding market share in 2006.

Convenience multiples and co-operatives are the largest players within the convenience sector, and in 2006 had an annual average revenue of £1 million per store. The Big Four supermarket chains saw an average of over £3 million per store. By contrast, the non-affiliated independents and the symbol group stores had average revenues of £280,000 and just over £630,000 respectively.<sup>69</sup> These very different types of convenience stores have correspondingly different distribution systems behind them (Figure 7).

**Figure 7:** Supply chain in the convenience store sector<sup>70</sup>



### 6.2.1 Convenience stores owned by multiples

The proportion of convenience stores owned by multiple retailers has grown extremely rapidly over the past decade. The four largest grocery retailers owned a total of only 54 convenience stores in 2000, and by 2005 this had increased to 1,306.<sup>71</sup> Tesco now owns 47% of all convenience multiples. The recent acquisition of many formerly independent stores by supermarket multiples,<sup>72</sup> in response to increased popularity of shopping in convenience stores, has raised questions in some quarters about the continuing viability of the supply chains of the remaining independents.

Convenience stores owned by multiple supermarket retailers are supplied through these retailers' existing distribution networks (see Section 6.1 above). They use sophisticated technology to coordinate the movement of goods through the supply chain in response to what is being sold in-store, and have frequent stock replenishments. The scale of their operations enables multiples to offer a wider range of goods at lower prices compared with independently owned stores.<sup>73</sup>

### 6.2.2 Symbol groups and independent non-affiliated convenience stores

Around three quarters of convenience stores are operated independently, either as stand-alone concerns or forming part of a larger organisation – such as SPAR or Nisa-Today's – known as a symbol group operator, providing added branding and buyer power.<sup>74</sup>

The small scale of these types of convenience stores, in terms of both the small number of stores run by a particular operator and the small size of stores, mean that, in the main, they lack the scale to deal directly with suppliers. They are supplied instead through wholesalers, allowing them to obtain relatively small quantities of a wide variety of products.

Most wholesalers belong to a buying group, an affiliation of several wholesalers. They are able to purchase goods from suppliers on more favourable terms than a wholesaler could achieve individually. They do not necessarily handle the goods, but arrange for them to be delivered to the wholesaler directly from manufacturers and processors, who deliver using an in-house vehicle fleet or a contract distributor.<sup>75</sup> In contrast to the multiple retailer supply chains, neither wholesalers nor convenience stores control the distribution of goods from suppliers.

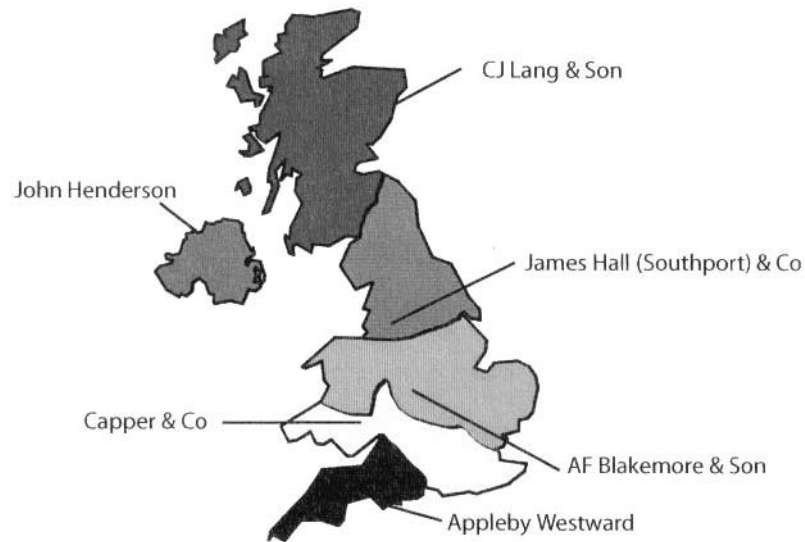
General grocery wholesalers fall into two types: cash and carry outlets, where the store owner will use his or her own transport to collect the goods, and wholesalers who offer a delivery service ('delivered wholesalers').

#### Symbol groups

Convenience stores belonging to symbol groups are supplied by delivered wholesalers. These operate through a depot-based system (similar to that of multiple retailers) to receive, consolidate and pick orders, which are then delivered to stores.

A case in point is SPAR, the largest symbol group with over 2,700 member stores in Great Britain and Northern Ireland. These are served by six wholesalers, who each cover a specific regional area and own some SPAR stores (Figure 8).<sup>76</sup>

**Figure 8:** Wholesalers operating the SPAR distribution network<sup>77</sup>

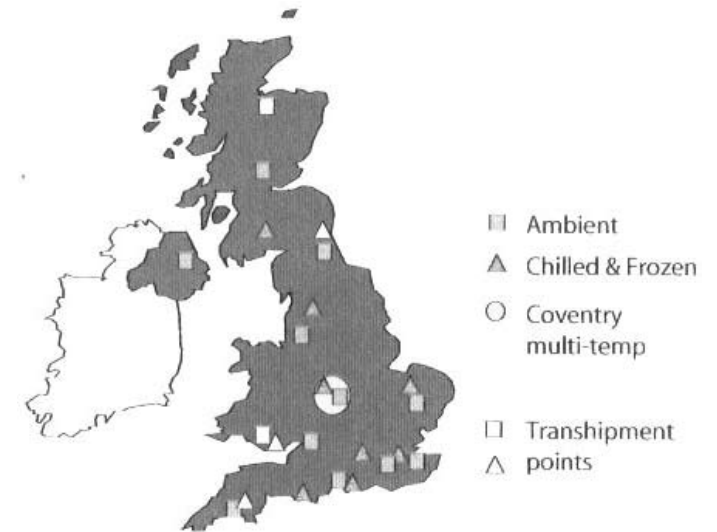


Each wholesaler has several distribution centres from which their in-house vehicle fleet delivers goods. The majority of the wholesalers solely serve SPAR stores, although some provide a delivered wholesale service to other customers too. In some cases a store may order a product through the wholesaler, but the manufacturer actually delivers directly to the store, without the product passing through the wholesaler's depot.

The majority of delivered wholesalers operate on a regional basis, such as the SPAR network described above. However, the UK's largest delivered wholesale business, Palmer and Harvey McLane, operates on a national basis through nineteen distribution depots (Figure 9).

The majority of Palmer and Harvey McLane's sales are ambient products, of which 4,500 lines are available. These are distributed from thirteen of the distribution sites.

**Figure 9:** Palmer and Harvey McLane's national distribution network



Wider catchment areas are served by delivered wholesalers compared to cash and carry, as the former are limited only by their distribution network and not by the distance that the customer is prepared to travel. It is noteworthy that wholesalers dictate delivery times to stores, whereas with multiple retailers, the retailers dictate narrow delivery windows to which the manufacturer or supplier must adhere.

Independent non-affiliated stores

Those independent stores not collecting under a symbol group umbrella largely source their goods by driving their own private vehicle to a cash and carry depot – a stark contrast to the Just-in-Time, satellite-monitored centralised supply chains of multiple retailers. In addition to cash and carry, supplies are sourced from supermarkets,<sup>78</sup> internet based 'virtual wholesalers', and a fraction directly from suppliers.<sup>79</sup>

The cash and carry business, whereby convenience store operators collect goods from a centralised depot, developed in the early 1960s in response to increased private vehicle ownership. The number of depots peaked during the 1980s, but has since decreased as a result of consolidation, increased competition from multiple retailers, and a growing demand for delivery rather than cash and carry. The latter factor has led to a blurring of the traditional distinction between cash & carry and delivered wholesalers, with many cash & carry wholesalers now offering a delivery service. Some of the biggest wholesalers, such as Makro and Costco, have chosen to remain depot based to keep down costs.

Non-affiliated independents are free to use a variety of wholesalers, and a survey in 2003<sup>80</sup> found that cash and carry customers purchased only half of their requirements from the depot in which they were surveyed, even though 72% of them regarded it as their 'main' cash and carry, which they visited three times per week. Add up these multiple trips in far-from optimally loaded vehicles, and it is easy to see how the financial and carbon efficiency of these supply chains struggles to compete with the multiples.

Some manufacturers have a dedicated delivery service for convenience stores. This is most common in the provision of chilled and short shelf-life products, such as bread, cakes and dairy products – especially milk – which are not well suited to being channelled through the traditional wholesale route, but also applies to products such as crisps and snacks for which convenience stores form an important proportion of the customer base. Direct deliverers range from major players such as Kerry Foods with a customer base of 17,500 stores, served from 33 depots by a fleet of 450 vans, to local specialist producers.<sup>81</sup>

### 6.2.3 Forecourts

Convenience stores on garage forecourts take a variety of formats:

- 'Company Owned Company Operated' (COCO) – The forecourt is owned by an oil company and operated by its employees according to instructions from Head Office;
- 'Company-Owned, Dealer-Operated' (CODO) – The forecourt is owned

by an oil company, but the site and store are operated by an independent business such as a multiple retailer or symbol group member;

- 'Dealer-owned, Dealer Operated' (DODO) – The forecourt is owned by an independent business, which acts as a distributor for an oil company.

The oil company supplies the petrol in all cases, but the means by which food is supplied varies. Forecourts operated by supermarket multiples are supplied through their own distribution networks. Transport operations are often contracted out to 3PLs with fleets of appropriately-sized trucks, however, as the large vehicle sizes of in-house fleets would render delivery inefficient. Forecourt stores operating as part of a symbol group are supplied through dedicated delivered wholesalers. Company-operated forecourt stores are supplied through delivered wholesalers.

## 6.3 'Traditional' stores

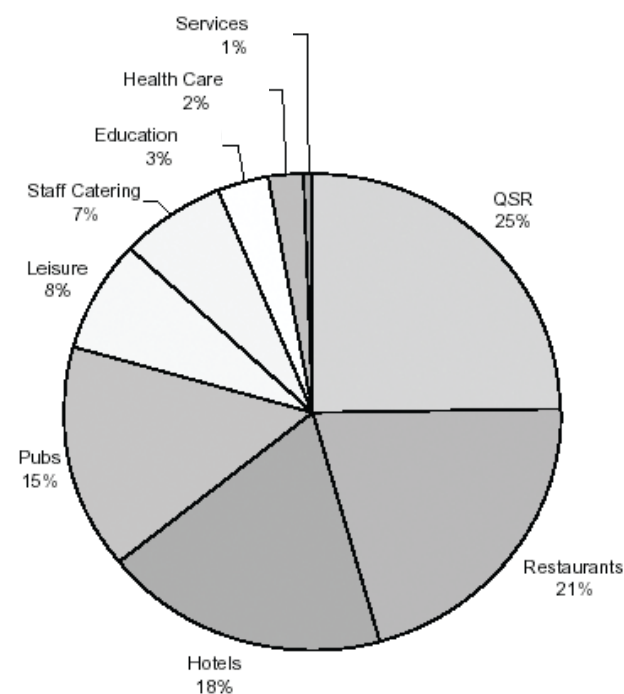
Traditional retail stores such as greengrocers, fishmongers and butchers, traditionally sourced supplies from specialist wholesale markets where producers and importers would sell goods directly to them. These markets have been in decline, though a number still exist in London, for example Covent Garden fresh produce market, Billingsgate fish market and Smithfield meat market. Options for consolidating these markets onto fewer sites – in part to improve transport problems – are being explored.<sup>82</sup>

## 7. Foodservice

'Foodservice' is another word for catering - a catch-all term for the sector of the food industry that provides meals for consumption outside the home, with an element of service at the point of sale. Total UK consumer spending on catering was around £82 billion in 2007, and is growing rapidly.<sup>83</sup> For the sake of comparison, other household expenditure on food and drink – for groceries and so on – was £90 billion.<sup>84</sup>

Foodservice is commonly divided into two categories: the cost sector and the profit sector.<sup>85</sup> Typical operations in the cost sector are public sector facilities such as schools, hospital, prisons and specialist care homes, as well as subsidised staff canteens. Profit foodservice outlets encompass restaurants, fast food outlets, pubs, hotels, and leisure venues. The profit sector accounts for 70% of the market and is the main driver of growth within foodservice (Figure 10).<sup>86</sup>

**Figure 10:** Food and drink sales in UK foodservice outlets (2004, percent by value)<sup>87</sup>

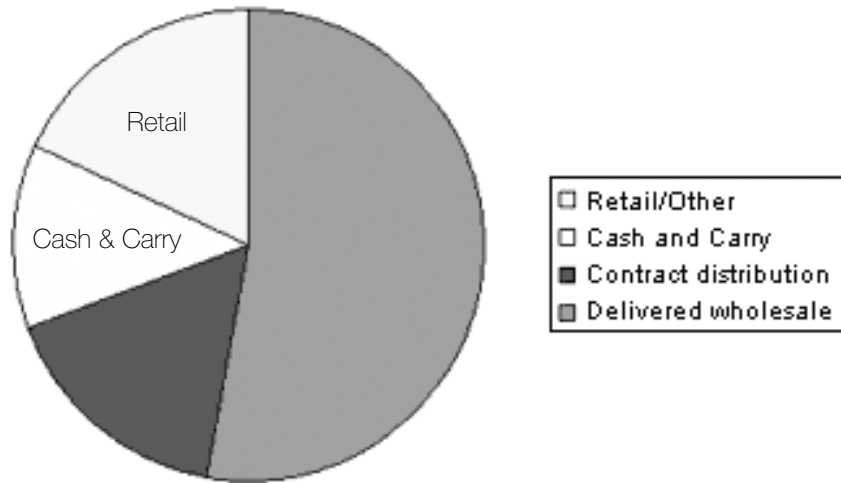


(QSR = Quick Service Restaurant<sup>88</sup>)

The diversity of operations within 'foodservice' is enormous, ranging from roadside stores to multiple pub and restaurant chains. Ownership is far less concentrated compared with retail, in which 75% of grocery sales are through supermarket multiples.<sup>89</sup>

Foodservice outlets obtain produce through three main channels: delivered wholesale, contract distributors and cash and carry wholesalers. Other suppliers, such as local butchers, bakers and fish retailers are used for fresh foods, and multiples are used for short-life and ambient groceries. Supplies such as coffee, cheese and snacks may be obtained through specialist distributors.<sup>90</sup> Figure 11 shows the proportion of food that flows through the various routes to market.

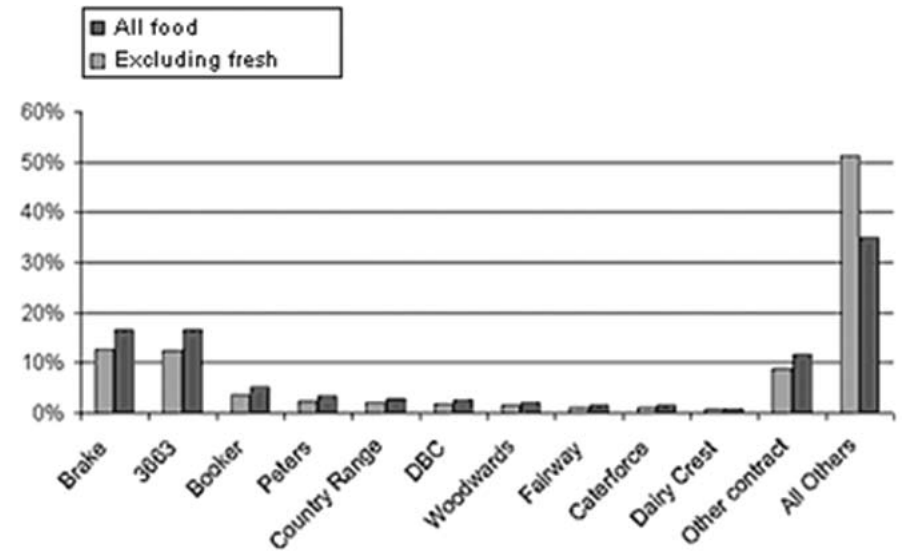
**Figure 11:** How foodservice operators obtain their food<sup>91</sup>



Delivered wholesale is the predominant source of food, but contract distribution (a logistics-only service, where the delivery company does not take ownership of the goods) is significant particularly for large chain operators. Cash and carry mainly serves small independent operators. This supply chain, whereby food is channelled from producers or manufacturers through wholesalers and contract distributors, has been in place since the late 1970s. Prior to that, most large food manufacturers had dedicated in-house distribution systems for the foodservice sector.

Reflecting the decentralised nature of the foodservice sector, the foodservice supply chain is extremely diverse. Although Brake and 3663 First for Foodservice are the main players, neither controls more than 20% of supplies (by value), and many small companies exist, as shown in Figure 12 below.

**Figure 12:** Foodservice Distribution Market Shares (2003)<sup>92</sup>



The biggest operators, such as 3663, operate on a scale akin to that of the distribution operations of the major retailers with fleets of over 1,000 vehicles and a network of national depots. As with the supermarkets, the major national foodservice delivered wholesale players have been developing their 'local' ranges, through consolidating small volume supplies from specialist producers at 'local food hubs'.<sup>93</sup>

Catering offers opportunities for smaller specialist producers, not operating on a national scale, to supply non-chain foodservice outlets or their wholesalers because, compared to multiple retailers, smaller volumes are required.<sup>94</sup> National chains of foodservice outlets in contrast tend to have a fixed menu throughout their stores; any food item therefore needs to be available nationally and consistently, which makes supply by smaller, local food producers more difficult.

## 8. Consumers

The final link in the chain is the trip made by the consumer from home to store and back again. Food shopping generates a vast number of trips: shopping (for both food and non-food items) is said to be the most frequent reason for travel in the UK, with each household making approximately two hundred shopping trips per year.<sup>95</sup> As a result, our car-based trips account for nearly half of all vehicle kilometres related to the transport of food (although only 13% of CO2 emissions).<sup>96</sup> Yet the issue is frequently ignored in discussions about food transport.

Food shopping tends to be done by one ‘main’ weekly shopping trip supplemented by ‘secondary’ shopping, which the IGD describes as follows:

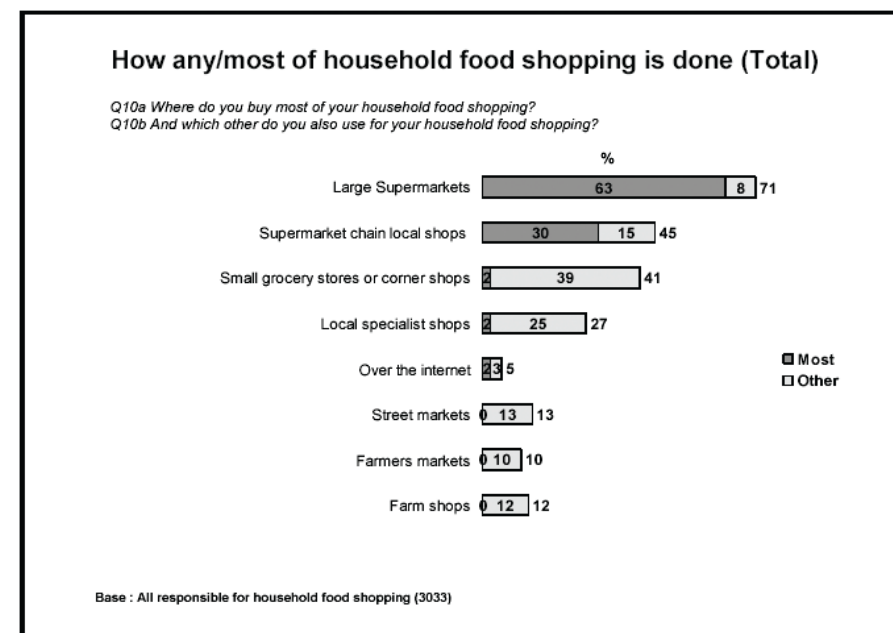
- ‘Top-up’ shopping - buying general groceries between major shops.
- ‘Distress’ shopping - a sudden, unexpected requirement for a specific item.
- ‘Impulse’ shopping - unplanned purchases for ‘treats’.<sup>97</sup>

Supermarkets and convenience stores owned by supermarket chains (multiple retailers) are overwhelmingly the most popular places for a main shop (Figure 13). Sixty-three percent of people do their main food shop in large supermarkets, and a further 30% used local shops owned by

a supermarket chain, such as Tesco Metro or Sainsbury’s Local. Only 4% of survey respondents did their main food shop in convenience stores or traditional retail shops not owned by a supermarket chain.

The sheer bulk of a ‘main’ shop means that these trips are highly car-dependent.

**Figure 13:** Shop types used for main shopping trips and secondary shopping<sup>98</sup>



Secondary shopping tends to be done in convenience stores or traditional retailers,<sup>99</sup> which are located in town or city centres.

Secondary shopping is usually for fresh, perishable items and snacks. Over 40% of expenditure on fresh milk, and 50% on dried, preserved and processed vegetables (which includes savoury snacks), for example, are made in outlets other than supermarkets or supermarket-owned local shops.<sup>100</sup>

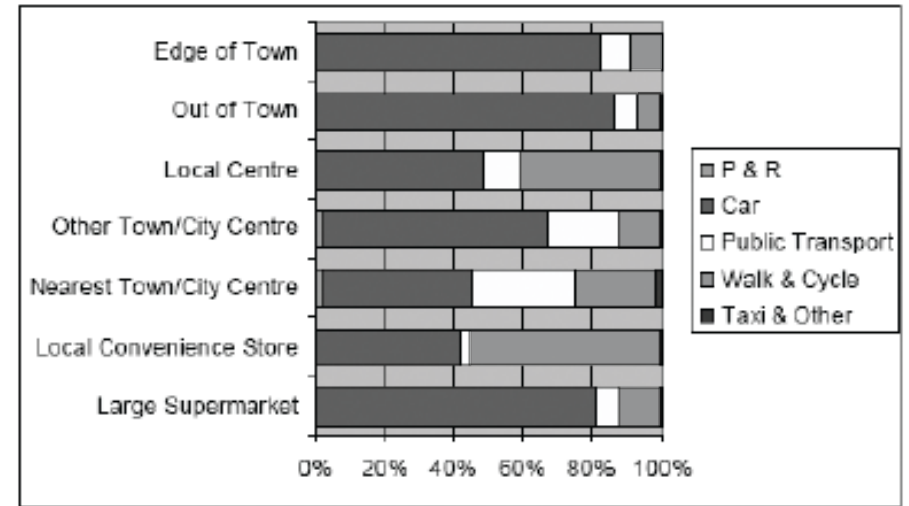
The distance travelled by consumers to convenience stores tends to be significantly shorter than journeys to supermarkets, which are often on the edge of, or outside, urban developments. One survey found that 63% of shoppers travel no more than half a mile to get to a convenience store, whereas supermarkets are often a ten to twenty minute drive away. The proximity of convenience stores obviously impacts upon the transport mode used; the same survey found that 49% of respondents walked to convenience stores.<sup>101</sup>

Over 80% of people in Britain live in a household with a car,<sup>102</sup> and this is the predominant mode of transport used to travel to and from the shops. Even people who do not own a car often ask for a lift or use a taxi.<sup>103</sup> About 64% of shopping trips are as a car driver or passenger and only 25% are carried out on foot.<sup>104</sup> The use of public transport varies more between areas, but is lower still. The mode of transport used is affected by demographic and socio-economic factors, distance to the shops and whether the shop is a 'main' or 'secondary' shop.

Car use for shopping trips has risen steadily over the past few decades,<sup>105</sup> substituting journeys by public transport or foot and causing an increase in urban food vehicle kilometres.<sup>106</sup> Between 1989 and 2004, for example, the number of shopping journeys made by car increased by 13%, while those by bus fell by 2% and walking trips fell by 11%. Furthermore, the average distance of shopping journeys almost doubled between 1976 and 2004.<sup>107</sup>

Increased car ownership seems to have driven the 1980s trend for out-of-town retail parks and supermarkets, and in turn the location of food shops today has a major impact upon the mode of transport used by food shoppers, as shown in Figure 14.

**Figure 14:** Modal choice for access to different shopping destinations<sup>108</sup>



Recent developments suggest that the move to more and more out of town, car-based shopping may have ended and that overall distances travelled to shops will lessen, with fewer car trips to more distant supermarkets. Such re-localisation of shopping from out-of-town supermarkets to town centres has already accompanied the conversion of One Stop convenience stores to the Tesco Express format, for example. The change in shopping destination has influenced transport mode, with more people walking and cycling to the shops.<sup>109</sup>

# An afterword

The UK food distribution system is highly complex and changes rapidly. This report can only give a brief overview. It doesn't seek to provide any analysis of the current system, but to provide a snapshot of the state of play. It merely hints at issues such as food security, carbon emissions, corporate concentration and so on.

The sister reports to this one, however, provide both a critical analysis and a guide to how the system could – and should – change in the future. You can read 'Food distribution: an ethical agenda' and 'Future scenarios for the UK food system: a toolkit for thinking ahead' on our website at [www.foodethicscouncil.org](http://www.foodethicscouncil.org).

# Notes

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# The Food Ethics Council

The Food Ethics Council is the independent advisory body on the ethics of food and farming. We:

- Help guide the way through difficult issues by analysing problems, challenging accepted opinion and creating a space for dialogue; and
- Build tools to put ethics at the heart of decisions about food in business, policy and civil society.

Our Council members include bioethicists and moral philosophers, farmers and food industry executives, scientists and sociologists, academics and authors.

Our work has covered topics including the personalisation of public health, the control of food research, the use of veterinary drugs and the growing challenge of water scarcity.

Find out more about our work, including the members of the Council, our exclusive Business Forum, and our must-read magazine, *Food Ethics*, on our website at [www.foodethicscouncil.org](http://www.foodethicscouncil.org).

Members of the Food Ethics Council:

Ms Helen Browning OBE (Chair): Organic farmer; Food and Farming Director, Soil Association

Prof Ruth Chadwick: Director, ESRC Centre for the Economic and Social Aspects of Genomics

Dr Charlie Clutterbuck: Director, Environmental Practice at Work

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Ms Jeanette Longfield: Coordinator of Sustain – the alliance for better food and farming

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Mr John Verrall: Pharmaceutical chemist

# Acknowledgements

We would like to extend our thanks to the large number of people in food retailers, food service businesses, logistics companies, food manufacturers, research institutes and non-governmental organisations, who have contributed to our project on food distribution. We are especially grateful to the organisations that gave kind permission to reproduce the graphs and tables which we used in this report, and which we have attributed accordingly.

Special thanks are due to the Food Ethics Council's interns – Claire Carter, and Neva Frecheville, who assisted heavily in the research and development of this report, and Damian Semple and Barry Caine who designed it.

Finally, we are very grateful to the funders of our food distribution project, the Esmée Fairbairn Foundation.



# Other relevant publications

This snapshot report is one of a set of reports from the Food Ethics Council's project on food distribution. It forms part of the evidence for the project's final report with recommendations, 'Food distribution: an ethical agenda'. Other reports relevant to our work on food distribution and sustainability are listed below. All reports are available on our website at [www.foodethicscouncil.org](http://www.foodethicscouncil.org).

Meeting reports:

'Flying food: workshop report' (May 2008)

'Food miles' or 'food minutes': is sustainability all in the timing?' (July 2007)

Research reports:

'Future scenarios for the UK food system: a toolkit for thinking ahead' (February 2009)

'Food distribution: an ethical agenda' (October 2008)

'Flying food: responsible retail in the face of uncertainty' (May 2008)

'Road pricing: could it promote sustainable food systems?' (December 2006)

Editions of Food Ethics magazine:

'Big retail: supermarkets want us to green, fair and healthy. Can they?' (June 2007)

People care about where food comes from but think less about how it actually gets to us. Exceptions, like the furore over airfreight or the fuel protests in 2002, underline how little most of us usually think about the journeys our food takes.

This report is a beginners' guide to food distribution. It provides a snapshot of the ways food gets to and around the UK, from ships, planes and lorries, to the trips consumers make to go shopping.



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ISBN 978-0-9549218-5-9