

# Dynamic Investment and Innovation in the UK Grocery Supply Sector

Prepared on behalf of

Tesco UK

By



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## Executive Summary

### Introduction and Background

Presented in this report are economic analyses relating to dynamic investment and innovation in the UK grocery sector that have been undertaken by London Economics (LE) on behalf of Tesco UK in the context of the Competition Commission's (CC's) current Inquiry.

The national and international evidence examined suggests that UK food and drink manufacturing, which underpins to a large extent the UK grocery supply chain, is more productive and innovative compared with manufacturing as a whole in the UK. The evidence indicates that key metrics capturing productivity and innovation have been growing strongly in UK food and drink manufacturing since the 1990s. Also illustrated is the fact that the UK grocery sector is innovative by international standards.

### Results of Economic Analyses

According to the empirical analysis carried out in respect of recent trends in relevant economic variables (Section 2 of the main body of the report):

- q Food and drink manufacturing is a growing and relatively productive industry within the UK manufacturing sector because since the mid-1990s;
  - o Total turnover in food and drink manufacturing has grown by 14% compared with 9% for manufacturing as a whole
  - o Gross value added (GVA) in food and drink manufacturing has increased by 32% compared with 6% for overall manufacturing
  - o Net capital expenditure minus disposals, which measures investment activity, has risen by 137% in food and drink manufacturing compared with 89% for manufacturing overall; and since 1998
  - o Total own-R&D expenditure has grown by 63% in food and drink manufacturing compared with 33% for manufacturing as a whole
- q Food and drink manufacturing is more productive relative to UK manufacturing as a whole because GVA per person employed was €66,100 in the former compared with €63,300 in the latter in 2004;
- q Total factor productivity (TFP) growth, which is an important indicator of sustainable growth and competitiveness, has been higher in food manufacturing compared with elsewhere on average in the UK economy during 1998-2003 - TFP in food manufacturing increased by 0.68% per annum from 1998 to 2003 compared to 0.57% for the economy as a whole.

The empirical analysis of new product development (NPD) in Section 3 of the main body of the report appears to suggest a positive correlation between NPD and the extent to which the multiples are involved at the distribution level of the grocery supply chain (defined as the proportion of retail grocery product sales through the multiples).

The NPD and innovation in the grocery supply chain may reflect the need for the industry to be able to respond rapidly and effectively to changing patterns of consumer behaviour, which include higher demand for health-oriented and convenience food items.

Technology has also helped target NPD. Retailers have more information available on consumer buying patterns and, often in partnership with suppliers, have better control of inventory and supply chain management and therefore are better equipped to effectively target product innovation. Hence, technology has aided in helping to make grocery retailers act as a catalyst for supplier innovation in the UK grocery sector.

Our analysis of NPD echoes other studies of product innovation in the UK grocery sector (cited in the main body of the report), including:

- q The OFT's (2006) finding that the average number of grocery product lines stocked by the four largest grocery retailers in the UK rose by 40% between 2000/01 and 2004/05;
- q The study of food retailing in the UK by Hollingsworth (2004), which concludes that "[t]his highly competitive market has fostered an accelerated level of development, resulting in a situation in which UK grocery retailers have had to be innovative to maintain and build market share"; and
- q The report by Defra (2006), which finds that "[t]here are concerns that the large supermarkets, driven by fierce competition, take a short term, cost-minimizing view which threatens the long-term health of the domestic supply chain. However, there is little evidence for this. Retailers look for competitive, consistent, good quality produce in response to consumer demands, whether that is from domestic or overseas suppliers. Domestic suppliers enjoy the competitive advantage of being located close to retailers and consumers. The power of supermarkets has encouraged farmers and other suppliers to become more, not less, competitive and 'market orientated' ".

Our analysis of various financial performance indicators (reported in Section 4 of the main body of the report) illustrates that in general the UK food and drink industry is sustainable and financial robust although there is likely to be variance at individual firm level. The following facts are relevant:

- q For all firms involved in the manufacture and wholesale of food, drink, household and sanitary products, detergents, perfumes and toiletries, the profit ratio (i.e. P/L as a proportion of revenue) averaged higher than 5% in each year

during the period;

- q Among small food manufacturers (i.e. those with an annual turnover less than €10m under the European Commission's definition of a small enterprise), the profit margin increased from 3.97% in 2000 to 4.33% in 2004, indicating an improvement in financial performance;
- q The average profit margin attained by small food manufacturers exceeded that of the average of the five largest food retailers, which fell from 4.03% in 2000 to 3.34% in 2004 based upon information in the Amadeus database (this fact is also apparent when the gross profit margin was used), which illustrates the relative financial strength of small food manufacturers;
- q When the gross profit margin is used (gross profit as a percentage of turnover), the financial performance of small food manufacturers emerged as substantially stronger on average compared with food manufacturers as a whole – the gross profit margin of small food manufacturers increased from 38% in 2000 to 54% in 2004, whilst that of all food manufacturers exhibited a small increase from 25% in 2000 to 27% in 2004;
- q In contrast, the gross margin of the five largest retailers ranged between 8% and 10% during the period based upon information in the Amadeus database, approximately one-third of that of the average food manufacturer and about one-fifth of that of the typical small food manufacturer in 2004;
- q On average, the EBIT margin posted by the largest five grocery retailers during 2000-2004 was 1.85 percentage points lower than the average EBIT margin posted by all food manufacturers (irrespective of turnover) and 0.55 percentage points lower than the average EBIT of enterprises with a turnover of less than €10m based upon information in the Amadeus database. The same patterns are evident with respect to the EBITDA margins among these three groups of firms;

As regards the comparative economic performance of UK grocery suppliers (considered in Section 5 of the main body of the report), it is found that:

- q The share of total manufacturing industry value added accounted for by the food and drink industry in the UK grew from over 13% in 1995 to almost 15% in 2003 – equivalent to a 14% increase in share, the fourth largest in value added contribution among a large range of European countries examined;
- q Between 2002 and 2004, the gross operating margin was approximately 12.6% in the UK manufacturing sector compared to an average of 9% in the EU-25;
- q The gross operating margin in the food, beverage (and tobacco) industry stood was 14.5% in the UK in 2004 compared with an average of less than 10% across the EU-25 in this year;
- q The extent to which the gross operating margin in the manufacture of food, drink and tobacco exceeds that in manufacturing as a whole has been greater in the UK

compared with the other countries examined – the out-performance in this regard was 1.9 percentage points for the UK in 2004, higher than any other country;

- q Over time, operating surplus in the UK food and beverage manufacturing industries has remained relatively strong every year since 1995, with growth of 13% during 1995-2004 (other European economies exhibited less stable growth in this performance metric over the period);
- q Labour productivity growth, measured by the change in GVA per person employed during 1995 and 2004, was relatively high in the UK (49%) in comparison with other European countries

# 1 Introduction

## 1.1 Background and Overview

This report provides economic analyses relating to dynamic investment and innovation in the UK grocery sector on behalf of Tesco UK in the context of the Competition Commission's (CC's) current Inquiry.

The report draws on various national and international data sources and shows that UK food and drink manufacturing, which underpins to a large extent the UK grocery supply chain, is more productive and innovative compared with manufacturing as a whole in the UK and that the supply base is robust financially as well as in output terms (including the growth of suppliers on average). Evidence is provided showing that key metrics of productivity and investment in innovation have been growing strongly in food and drink manufacturing since the mid-1990s. Also illustrated is the fact that the UK grocery sector is innovative by international standards and suggests that the behaviour of retailers may be consistent with strong levels of investment and innovation in the grocery supply chain.

The different strands of analysis presented in this report show that the UK grocery sector is competitive and build on the existing evidence relating to productivity, innovation and strength of price competition. One source of this evidence is the Office of Fair Trading (OFT), which, in its reasons to refer, made eight points of relevance to this report.<sup>1</sup>

First, the UK grocery sector comprises a wide variety of different types of grocery retailer, including symbol groups, co-operatives and independents as well as multiples.<sup>2</sup> Even within the multiples, there are, according to the OFT, "substantial differences in the scale, strategy and product offering of the different firms".<sup>3</sup>

Second, the supply chain serving the UK grocery sector is similarly diverse and this diversity is a characteristic of effective competition in the upstream stages of the sector. According to the OFT, suppliers range from small local

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<sup>1</sup> 'The Grocery Market: The OFT's reasons for making a reference to the Competition Commission, OFT845, May 2006.

<sup>2</sup> *Ibid.*, paragraph 3.7.

<sup>3</sup> *Ibid.*, paragraph 3.8.

firms to large multinationals, and the grocery supply chain includes producers, importers and farmers, along with wholesalers serving many smaller retailers and buying groups which negotiate collectively with suppliers on behalf of many smaller retailers.<sup>4</sup>

Third, the growth in grocery retailing in the UK has in part been in response to changing consumer demands, which reflect changing work patterns leading consumers to place a higher value on convenience relative to cost.<sup>5</sup> In general, a market exhibiting growth over time and which is responsive to changing patterns of demand are characteristics of effective competition.

Fourth, retail food prices have declined in recent years, by 7.3% between January 2000 and December 2005.<sup>6</sup> This illustrates the intense price competition in grocery retailing in the UK.

Fifth, according to the OFT's own analysis, "the majority of commonly purchased products appear to be cheaper by an approximate average of 10% in the four largest supermarkets.<sup>7</sup> This is evidence of the strong price competition among different product lines (non-food as well as food items) in grocery retailing in the UK.

Sixth, commenting on the variables of competition in the UK grocery sector, the OFT finds that there is "evidence that consumers may increasingly value quality of product over pure competition on price" and proceeds to state that this "appears to be having benefits for some niche players, including independent stores".<sup>8</sup> In this regard, the OFT refers to reports by Mintel (showing that surviving niche players are doing better than they had done previously) and by APPSSG (illustrating strong performance among organic food items recently).<sup>9</sup> This aspect of the OFT's report illustrates how smaller retailers and suppliers are giving increased attention to quality in order to compete in the UK grocery sector.

Seventh, as regards product range, the OFT finds that the average number of

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<sup>4</sup> *Ibid.*, paragraph 3.10.

<sup>5</sup> *Ibid.*, paragraph 3.10.

<sup>6</sup> *Ibid.*, paragraph 4.2.

<sup>7</sup> *Ibid.*, paragraph 4.3.

<sup>8</sup> *Ibid.*, paragraph 4.5.

<sup>9</sup> *Ibid.*, paragraphs 4.6 and 4.7.

product lines stocked by the four largest grocery retailers rose by 40% between 2000/01 and 2004/05.<sup>10</sup> This fact shows the strength of product innovation and new product development (NPD) in the UK grocery supply chain.

Eighth, there is evidence of higher levels of service quality stemming from the increased competition. According to the OFT, the “multiples have brought faster food, new ranges, lower prices, better store environments and increased scale to the neighbourhood and it has forced smaller players to improve to keep up”.<sup>11</sup>

Summing up, the evidence on the UK grocery sector reported by the OFT shows falling real prices, increased product range, higher levels of quality of service, greater product quality, a large and diverse range of retailers and numerous different types of suppliers. All of these market characteristics are consistent with the operation of effective competition.

## 1.2 Importance of Innovation in the UK Grocery Sector

Corresponding with the intensifying competition in the UK grocery sector has been a greater emphasis on innovation, NPD and supply chain management. An important driver of these developments has been the need to respond quickly and effectively to emerging consumer needs.

Reviewing recent developments in the competitiveness of the food retail sector – the largest part of the grocery sector in the UK – Hollingsworth (2004) observes that consumers are increasingly demanding and sophisticated in their shopping behaviour.<sup>12</sup> According to Hollingsworth:

“[Consumers] are better informed about product quality, prices and availability. Rising expectations concerning retailing have increased selectivity, reduced store loyalty and diminished the effectiveness of traditional modes of shopping. The tendency therefore, is for consumers to

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<sup>10</sup> *Ibid.*, paragraph 4.11.

<sup>11</sup> *Ibid.*, paragraph 4.14.

<sup>12</sup> Hollingsworth, A. (2004), ‘Case Study – Increasing retail concentration – Evidence from the UK food retail sector’, *British Food Journal*, Vol. 106, No. 8, pp. 629-38.

switch stores or shop in multiple locations".<sup>13</sup>

Commenting on the changes affecting food retailing in the UK, Hollingsworth (2004) states that:

"This highly competitive market has fostered an accelerated level of development, resulting in a situation in which UK grocery retailers have had to be innovative to maintain and build market share".<sup>14</sup>

The greater emphasis on innovation has included the use of new technologies relating to how retailers interact with consumers, different store formats targeted at meeting consumer requirements in different locations and NPD.

In the subsequent sections of this report, we analyse how the effectively competitive nature of the UK grocery sector has been sustained through product innovation and NPD, which have been driven through the need to meet the changing patterns of consumer demand and the intensifying competition at the retail level, which appears to feed back into stronger competition in the upstream stages of the supply chain (among suppliers).

A fundamentally important element underpinning innovation and NPD in the UK grocery sector are the economic incentives facing retailers and suppliers. An incentive which is likely to be facing the multiples is to expand product range and product quality to maintain competitiveness and build market share while suppliers aim to ensure that their products have the widest possible reach. The potential alignment of these incentives means that retailers and suppliers may have a mutual interest in ensuring an efficient, dynamic and innovative supply chain.

As we show in Section 3, the multiples facilitate NPD in the UK grocery sector, appearing to guide the supply of new products from manufacturers to the final consumer.

The role of the multiples in this regard is well summed up by Defra (2006):

"There are concerns that the large supermarkets, driven by fierce competition, take a short term, cost-minimizing view which threatens the long-term health of the domestic supply chain. *However, there is little evidence for this.* Retailers look for *competitive, consistent, good quality produce in response to consumer demands*, whether that is from domestic or overseas suppliers. Domestic suppliers enjoy the competitive advantage of being located close to

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<sup>13</sup> *Ibid.*, p. 632.

<sup>14</sup> *Ibid.*, p. 633.

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retailers and consumers. *The power of supermarkets has encouraged farmers and other suppliers to become more, not less, competitive and 'market orientated'* " [LE italics].<sup>15</sup>

### 1.3 Review of Academic Research on Retailer Bargaining Strength and Supplier Innovation in the UK Grocery Sector

Some academic economists have in the past argued that retailer bargaining strength *vis-à-vis* upstream suppliers may hinder the rate of innovation and NPD and jeopardise the operation of the grocery supply chain with a consequent loss in consumer welfare.<sup>16</sup> It has been claimed that retail bargaining strength would lead to a reduction in the level of profits of suppliers. In turn, it has been suggested, the lower level of profits would reduce innovation because both the cash available for investment and the expected return on investment would be lower than they would otherwise be in the absence of retailer bargaining power. This perceived concern has been aired in the US and continental European countries as well as the UK.

However, it is important to consider the empirical evidence on whether retailer bargaining strength slows down or hinders the rate of NPD in the case of the UK grocery sector.

The evidence which we examined would appear to indicate an acceleration of NPD in the UK: for example, the OFT's evidence, outlined above, illustrates increasing product range and quality; and the conclusion in the study by Defra (2006) cited above makes it clear that the larger retailers/multiples have played a proactive and leading role in helping to make the grocery supply chain in the UK more efficient and competitive.

According to Leatherhead Food International (2004): "levels of innovation [in terms of branded new product activity] are particularly high in the UK, compared with its Continental neighbours and, in terms of total launch

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<sup>15</sup> 'Economic Note on UK Grocery Retailing', Food and Drink Economic Branch, Defra, May 2006 (paragraph 72).

<sup>16</sup> The following two studies provide a review of research: Dobson, P. and M. Waterson (1999) 'Retailer Power: Recent Developments and Policy Implications', *Economic Policy*, Vol. 28, pp. 133-64; Dobson, P. and M. Waterson (1999) 'Countervailing Power and Consumer Prices', *Economic Journal*, Vol. 107, pp. 418-30;

numbers each year, is third only to the US and Japan on a global level".<sup>17</sup>

New empirical evidence examined in Section 3 of this report suggests that the larger retailers may help to facilitate supplier NPD in the UK grocery sector.

In contrast to the provisions and well-known academic studies referred to earlier, some recent academic studies suggest that it may be incorrect to assume that there is a simple, unidirectional link between retailer bargaining strength and the level of innovation by suppliers. These studies find that, in some cases, retailer bargaining strength *vis-à-vis* suppliers can serve to stimulate innovation and NPD.

For instance, Inderst and Wey (2005, 2006) show that, in a model with bilateral negotiations, it is profitable for suppliers to invest in activities aimed at reducing marginal costs.<sup>18</sup> This result follows where a supplier can extract more of the incremental profits from reducing costs if it faces more powerful buyers although the supplier's total profits are lower than in a situation with weak buyer power. The supplier is further incentivised to reduce marginal costs because this reduces the value of the retailer's alternative supply options.

## 1.4 Report Structure and Datasets Used

The report comprises five substantive sections containing various types of empirical analyses illustrating the extent to which the UK grocery sector is innovative and productive. What follows is a brief outline of the sections together with the datasets underpinning the empirical analyses.

- § Section 2 outlines recent economic trends in UK food and drink manufacturing and shows that the supplier base to the UK grocery sector is robust, productive and innovative, in comparison with UK manufacturing as a whole. The data used are the Annual Business Inquiry (ABI) and Eurostat Structural Business Statistics (SBS).

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<sup>17</sup> 'Food and Drink Innovation in the UK', Leatherhead Food International, September 2004 (p. 1).

<sup>18</sup> Inderst, R. and C. Wey (2005), 'How Strong Buyers Spur Upstream Innovation', CEPR Discussion Paper No. 5365, December and Inderst, R. and C. Wey (2006), 'Buyer Power and Supplier Incentives', forthcoming in *European Economic Review*.

- § Section 3 looks in more detail at the incentives facing retailers for an innovative grocery sector and presents new empirical evidence showing how larger retailers facilitate NPD in the UK grocery sector. Mintel market research reports on a series of grocery products are analysed in this part of the report.
- § Section 4 examines the financial performance of UK grocery suppliers and reveals that the supplier base is generally financially robust – including smaller suppliers into the UK grocery supply chain. The data used are from the Amadeus database.
- § Section 5 provides a comparative analysis of the UK grocery supply chain and shows that it is both profitable and productive internationally. Data from the OECD Stan database is used here.
- § Additional information on is given in the annexes.

## 2 Economic Trends in UK Food and Drink Manufacturing

### 2.1 Introduction

This section provides an overview of recent economic trends among food and drink manufacturers in the UK relative to the UK manufacturing sector as a whole. The information presented is derived from comparative analysis of the 2004 Annual Business Inquiry (ABI) and Eurostat data and pertains to turnover, gross value-added and investment activity among firms, as well as their number and employment levels, and we also consider data on research and development expenditure, labour productivity and total factor productivity growth.

Our analysis indicates that there has been:

- § A 14% increase in total turnover in food and drink manufacturing (compared to approximately 9% for manufacturing as a whole);
- § A 32% increase in gross value added in food and drink manufacturing (compared to 6% for manufacturing as a whole);
- § A 137% increase in net capital expenditure minus disposals in food and drink manufacturing (compared to an 89% increase for manufacturing overall); and
- § A 63% increase in total own-R&D expenditure since 1998 (compared with 33% for manufacturing as a whole).

Our analysis also indicates that labour productivity is higher in UK food and drink manufacturing compared with UK manufacturing overall (GVA per person employed was €66,100 in the former compared with €63,300 in the latter in 2004) and that total factor productivity growth has been higher in food manufacturing compared with elsewhere on average in the UK economy during 1998-2003.

Overall, our analysis highlights that food and drink manufacturing is a growing and a relatively productive and innovative industry within the UK manufacturing sector.

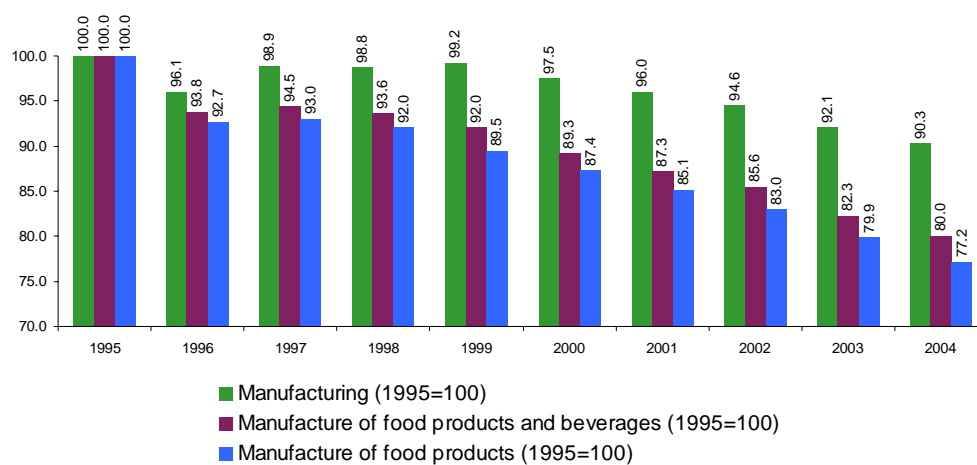
## 2.2 Number of Enterprises and Employment

There has been a reduction in the number of enterprises<sup>19</sup> in the UK manufacturing sector as a whole since 1995. In 1995, there were over 171,500 enterprises compared to just over 153,000 in 2005, corresponding to a reduction in the region of 11% over 9 years.

The reduction in the number of enterprises in the manufacture of food and beverage products has also seen a decline with the number of firms falling from just over 8,800 in 1995 to just over 7,000 in 2004, equivalent to a decline of approximately 20%.

An index of the number of enterprises since 1995 in the manufacturing, food manufacturing and food and beverage manufacturing sectors is presented in Figure 2.1 below.

Figure 2.1: Total Number of Enterprises in UK Manufacturing Overall, Food and Beverages Manufacturing, and Food Manufacturing 1995-2004 (1995=100)



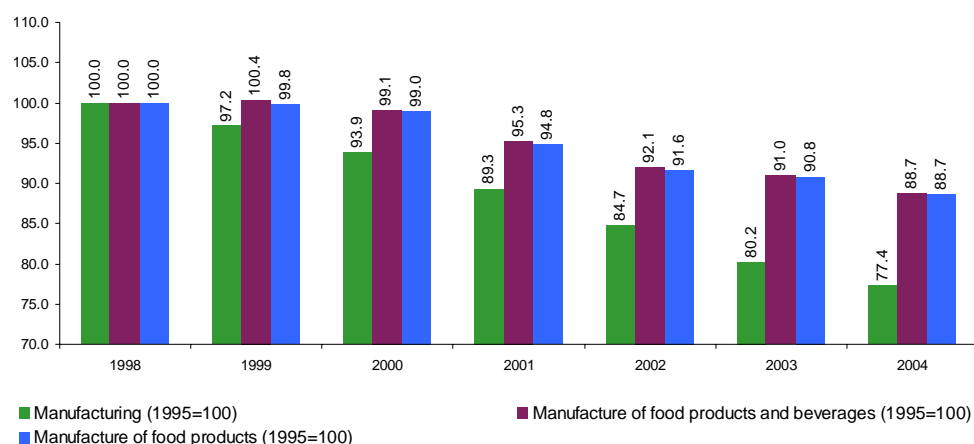
Source: LE analysis of ABI data.

<sup>19</sup> An enterprise is defined as the smallest combination of legal units, which have a certain degree of autonomy within an enterprise group.

The trend in terms of employment<sup>20</sup> follows a similar overall pattern over the period 1998-2004. However, there is a significant difference in the changes in employment within the manufacturing sector. The manufacturing sector as a whole has seen employment fall from 4.354m in 1998 to just over 3.2m in 2004, equivalent to a 27% reduction in numbers. In 1998, there were 477,000 people employed in the manufacture of food products with an additional 56,000 in beverage manufacturing. In 2004, the number employed in each industry had fallen to 423,000 and 50,000 individuals respectively – equivalent to a reduction of approximately 11% in absolute terms.

Therefore, although there has been a reduction in the number of enterprises in the manufacturing sector as a whole and in the food and drink manufacturing industries specifically, there has been a disproportionately smaller loss in the numbers employed in the food and beverage manufacturing sectors compared to manufacturing as a whole.

Figure 2.2: Total Employment in UK Manufacturing Overall, Food and Beverages Manufacturing, and Food Manufacturing 1998-2004 (1998=100)



Source: LE analysis of ABI data.

Taking the relative falls in enterprise numbers and employment together, between 1998 and 2005, the average firm size (by employment) has fallen in the manufacturing sector as a whole (from 25.7 to 20.9 employees per firm). However the average firm size in the manufacture of food products (by

<sup>20</sup> This is the point-in-time estimate of full and part-time employees on a set day in December adjusted to give a year average value, plus the number of working proprietors employed on the same day

number of employees) increased between 1998 and 2004 (the latest year for which data exists at a disaggregated level) from 63.6 to 67.2 employees per firm.

Organic firm growth, entry and exit, as well as consolidation among suppliers, have driven the relative changes in the food and drink industry during the period. Innovation and new product development appear to have assumed greater importance in the mix of food and drink manufacturing firms' competitive strategies compared with in the past and a notable development in this regard has been the increasing use of more direct partnering between suppliers and retailers.

The more rapid growth of food and drink manufacturing firms compared with firms in manufacturing generally also reflects the increased economies of scale in food and drink manufacturing, which in turn may have assisted in the expansion of product innovation in food and drink processing.

## 2.3 Total Turnover and Value Added

There are substantially different patterns in total turnover<sup>21</sup> and value added<sup>22</sup> between the manufacturing sector as a whole and the food and beverage manufacturing sectors.

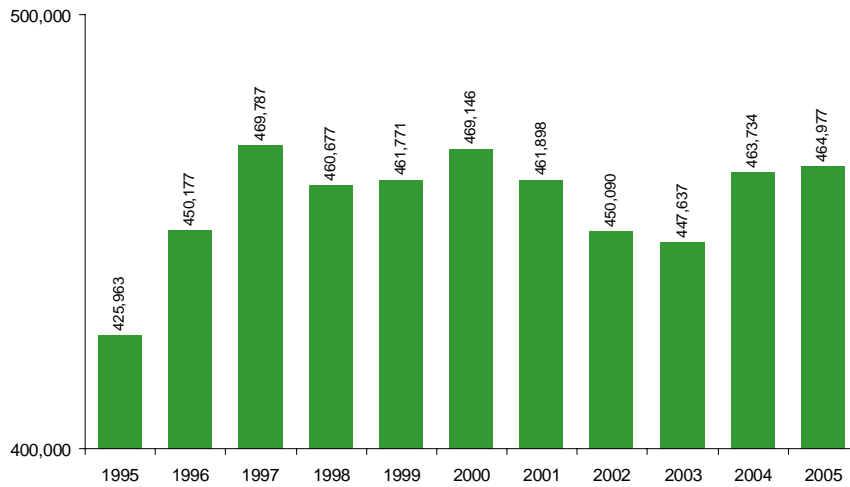
Despite the reduction in the number of enterprises and employment in the manufacturing sector as a whole, total turnover has increased from £426bn in 1995 to almost £465bn in 2005. This equates to a cumulative 9.1% increase in turnover over the period. However, as can be seen from Figure 2.3 below, progress over the period has not been smooth with annual reductions in turnover between 1997 and 1998 and every year between 2000 and 2003.

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<sup>21</sup> Turnover is defined as total sales and work done. This is calculated by adding to the value of sales of goods produced, goods purchased and resold without further processing, work done and industrial and non industrial services rendered.

<sup>22</sup> Gross value added (GVA) represents the amount that individual businesses, industries or sectors contribute to the economy. Broadly, this is measured by the income generated by the business, industry or sector less their intermediate consumption of goods and services used up in order to produce their output. GVA consists of labour costs (e.g. wages and salaries) and an operating surplus (or loss).

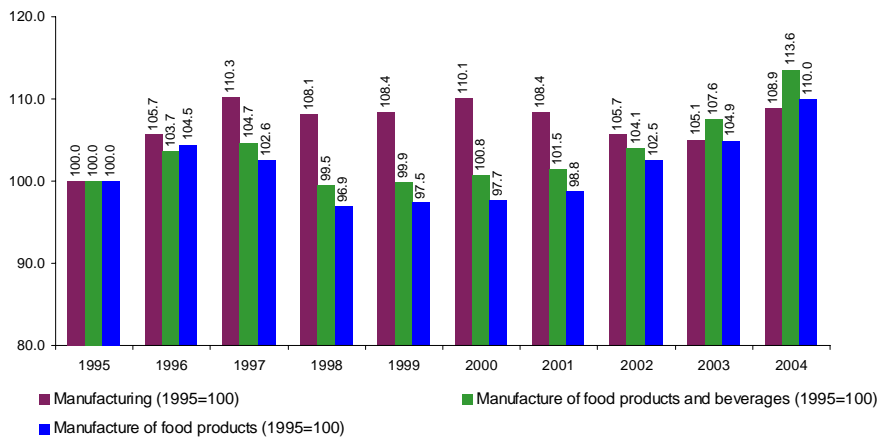
Figure 2.3: Total Turnover (£bn) in UK Manufacturing Overall 1995-2004



Source: LE analysis of ABI data.

A similar pattern is illustrated in the food manufacturing industry. In this case, there has been a 10% increase in total turnover between 1995 and 2004, though as with the entire manufacturing sector there was a retrenchment of the sector between 1996 and 1998 followed by relatively stable growth since. In 1995, total turnover in the food manufacturing sector was approximately £53bn – or 12.4% of total manufacturing. The index of total turnover in the manufacturing, manufacture of food and beverage products and manufacture of food products is presented in Figure 2.4 below.

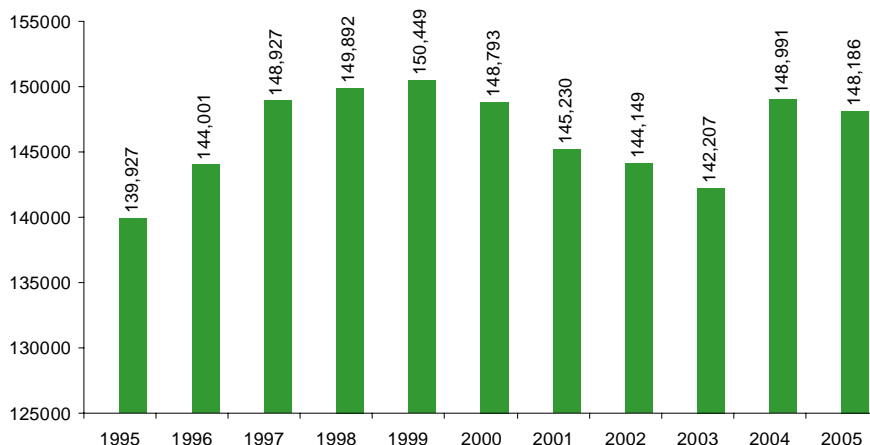
Figure 2.4: Total Turnover in UK Manufacturing Overall, Food and Beverages Manufacturing and Food Manufacturing 1995-2004 (1995=100)



Source: LE analysis of ABI data.

Gross value added (GVA) represents the amount that individual businesses, industries or sectors contribute to the economy. GVA in the manufacturing sector overall has increased from just under £140bn in 1995 to just over £148bn in 2005, corresponding to a 5.9% increase over the period, much of which occurred between 1995 and 2000, as illustrated in Figure 2.5 below.

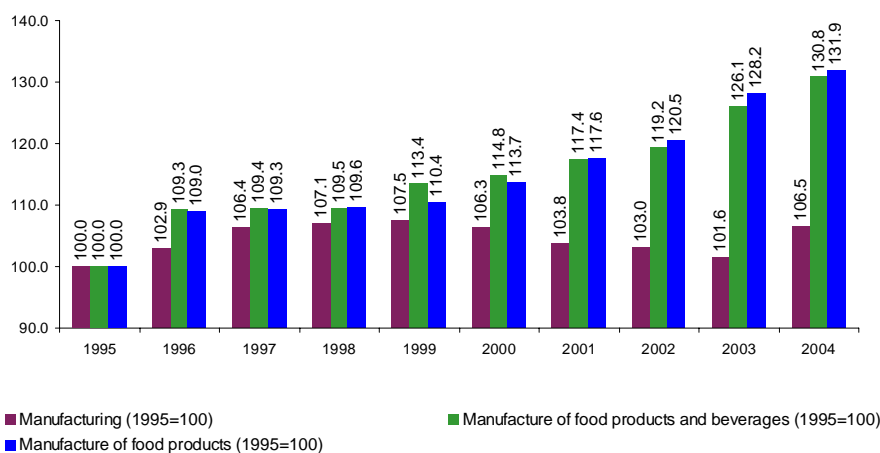
Figure 2.5: Gross Value Added in UK Manufacturing 1995-2005



Source: LE analysis of ABI data.

In stark contrast, GVA in food manufacturing has increased from £13.2bn in 1995 to almost £17.5bn in 2004, an increase of almost 32% that has exceeded that in manufacturing as a whole by a factor of almost 5 (Figure 2.6).

Figure 2.6: Gross Value Added in UK Manufacturing Overall, Food and Beverages Manufacturing and Food Manufacturing 1995-2004 (1995=100)

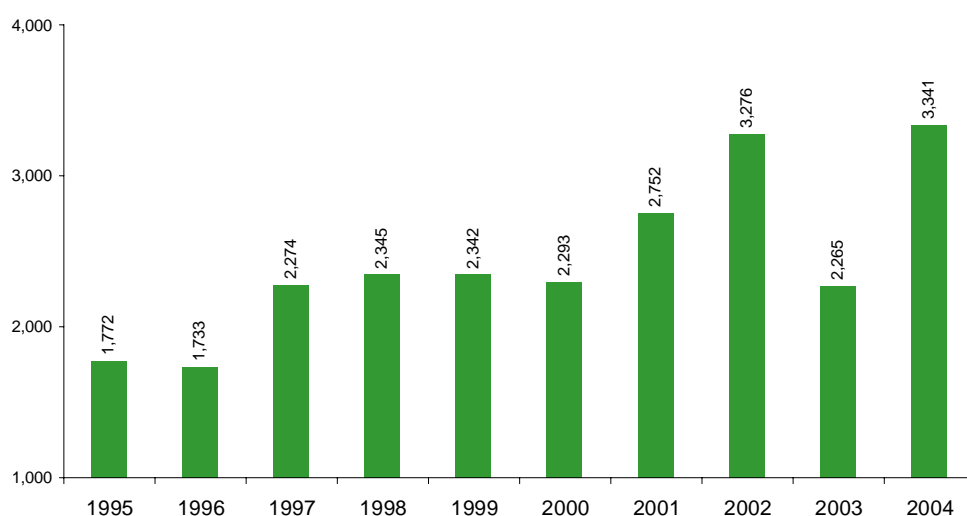


Source: LE analysis of ABI data.

## 2.4 Net Capital Expenditure minus Disposals

In the manufacturing sector as a whole, total net capital expenditure minus disposals<sup>23</sup> stood at £1.77bn in 1995 and subsequently grew to £3.34bn in 2004, an appreciably large increase of almost 89% over the period.

Figure 2.7: Total Net Expenditure minus Disposals in UK Manufacturing 1995-2004



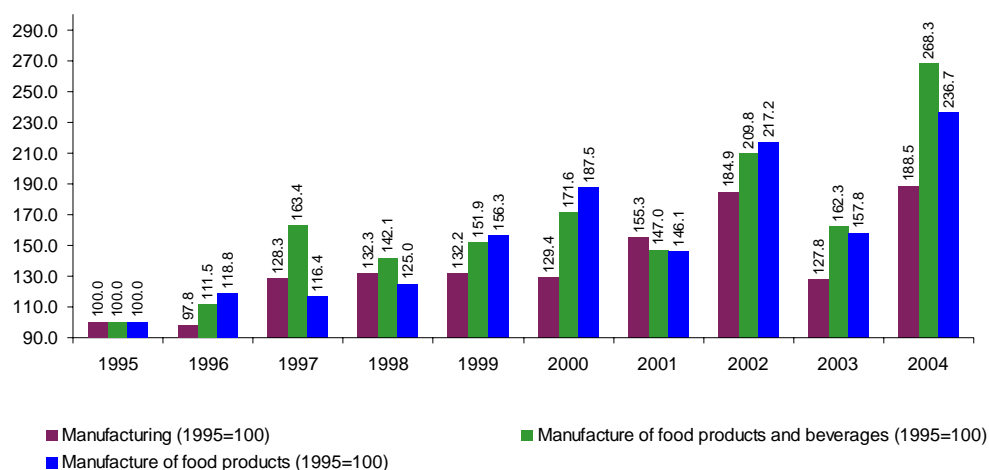
Source: LE analysis of ABI data.

In the manufacture of food products, net capital expenditure minus disposals grew even more rapidly during 1995-2004, from £128m in 1995 to £303m in 2004 – corresponding to a 137% increase in new capital investment over the decade in question. In the manufacture of food and drink, net capital expenditure minus disposals grew even more rapidly again by over 168% during 1995-2004.

In Figure 2.8 below, we illustrate net capital expenditure minus disposals in manufacturing as a whole, food manufacturing and in food and drink manufacturing. The evidence on this key performance metric indicates that investment activity in food and drink manufacturing was substantially higher compared with other manufacturing industries on average during the period.

<sup>23</sup> Net capital expenditure minus disposals is calculated by adding the value of disposals of land and existing buildings, vehicles and plant and machinery to net capital expenditure.

Figure 2.8: Total Net Capital Expenditure minus Disposals in UK Manufacturing Overall, Manufacture of Food and Beverages and Manufacture of Food 1995-2004 (1995=100)



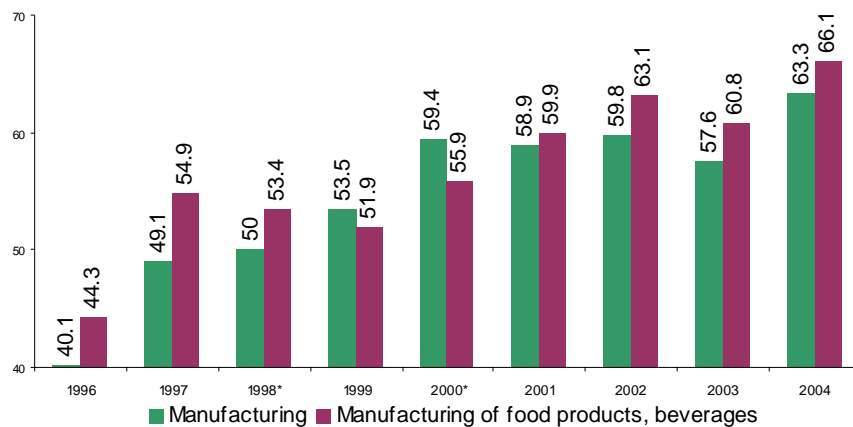
Source: LE analysis of ABI data.

## 2.5 Labour Productivity

In 1996, labour productivity (measured by GVA per person employed) stood at approximately €40,000 per person. This has increased to €63,000 in 2004. However, GVA per person employed in the manufacture of food and drinks stood at €44,300 in 1996 rising by approximately 50% to €66,100 in 2004 (see Figure 2.9 below).

This indicates that labour productivity was higher in food and drink manufacturing than in manufacturing as a whole in 2004. As will be seen later in this report, apparent labour productivity in the food and beverage manufacturing sector in the UK is amongst the highest in the European Union.

Figure 2.9: Gross Value Added per Person Employed in UK Manufacturing Overall and in Food and Drink Manufacturing 1996-2004



Source: Eurostat

\* Imputed value

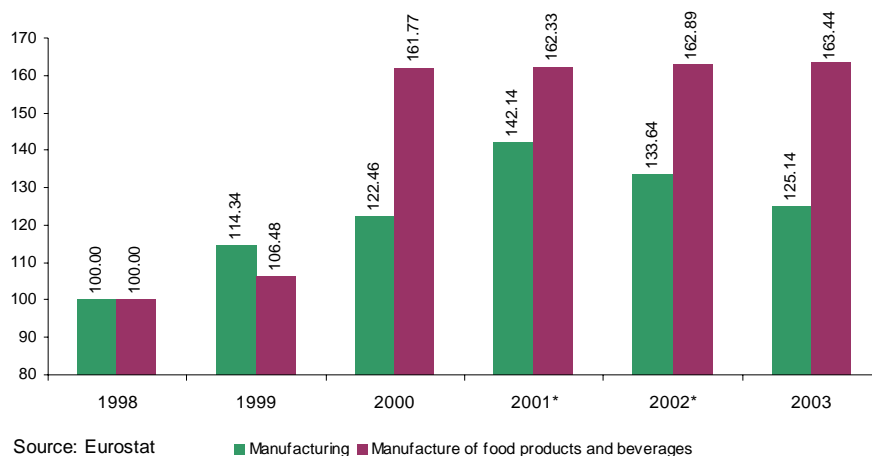
Source: LE analysis of Eurostat data.

## 2.6 Research and Development Expenditure

The evidence from Eurostat on total own-R&D in both manufacturing as a whole and in food and drink manufacturing in the UK is presented in Figure 2.10 below. For manufacturing as a whole, own-R&D stood at approximately €8bn in 1998 (at 1995 prices) rising to just over €10bn in 2003 – the last year for which data exist. This corresponds to an increase of approximately 25% in the expenditure on own-R&D over the 6 years in question.

In sharp contrast, total own-R&D in food and drink manufacturing increased from €197m in 1998 to over €322m in 2003, corresponding to an increase of approximately 63% - more than double the rate of growth for manufacturing overall.

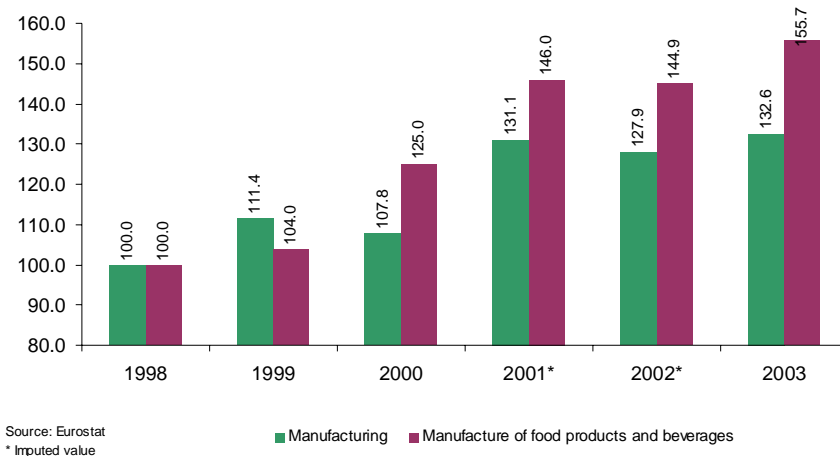
Figure 2.10: Total Own-R&D Expenditure in UK Manufacturing Overall and Manufacturing of Food and Beverages 1998-2003 (1998=100)



Source: LE analysis of Eurostat data.

When growth in own-R&D expenditure as a proportion of total turnover is considered, the gap between food and drink manufacturing and manufacturing as a whole is still apparent, as illustrated in Figure 2.11. In particular, the proportion of total turnover spent on own-R&D in the manufacturing sector as a whole rose by 33% between 1998 and 2003, while that in the manufacture of food and beverages increased by 56% during same period.

Figure 2.11: Total Own-R&D Expenditure as a Proportion of Total Turnover in UK Manufacturing Overall and Manufacturing of Food and Beverages 1998-2003 (1998=100)



Source: LE analysis of Eurostat data.

## 2.7 Total Factor Productivity

Total factor productivity addresses any effects in total output not caused or determined by the various inputs into the production process. Total factor productivity is typically measured residually, as that change in output that cannot be accounted for by the change in combined inputs.

Technology growth and efficiency are regarded as two of the biggest components of total factor productivity, which is often seen as the key driver of growth and competitiveness within an economy.

In a recent analysis of total factor productivity, Barnes and McVittie (2005)<sup>24</sup> use information from the Annual Business Inquiry and the Annual Survey of Hours and Earnings (Office for National Statistics) to compute total factor productivity growth rates over the period 1998 to 2003, as well as the productivity growth rates for the various factor inputs (labour and capital). The authors find that total factor productivity decreased across the UK economy as a whole over the period (by approximately 0.25% per annum). However, they found significant differences across sectors within the economy. Total factor productivity in the food manufacturing sector increased by 0.68% per annum during the period, which could be driven by the increased technology use and greater efficiency within the sector. The estimate of total factor productivity growth in the food manufacturing sector over the period is also illustrated to be greater than that achieved by the economy as whole of the same period (0.57% per annum).

## 2.8 Summary

This section has presented comparative analysis, using ABI and Eurostat data, on key economic indicators relating to output growth, productivity and innovation for the manufacture of food and drink and manufacturing as a whole in the UK since the mid-1990s.

Our analysis indicates that there has been:

- § A 14% increase in total turnover in food and drink manufacturing (compared to approximately 9% for manufacturing as a whole);
- § A 32% increase in gross value added in food and drink

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<sup>24</sup> Barnes, A. and McVittie, A. (2005), "Food Chain Productivity Incorporating External Impacts", Land Economy Research Group, 2005.

manufacturing (compared to 6% for manufacturing as a whole);

- § A 137% increase in net capital expenditure minus disposals in food and drink manufacturing (compared to an 89% increase for manufacturing overall); and
- § A 63% increase in total own-R&D expenditure since 1998 (compared with 33% for manufacturing as a whole).

Furthermore, our analysis indicates that labour productivity is higher in food and drink manufacturing compared with manufacturing overall (GVA per person employed was €66,100 in the former compared with €63,300 in the latter in 2004) and that total factor productivity growth has been higher in food manufacturing compared with elsewhere on average in the UK economy during 1998-2003.

Overall, our analysis highlights that food and drink manufacturing is a growing and a relatively productive and innovative industry within the UK manufacturing sector.

## 3 Retailer Impact on New Product Development in the UK Grocery Sector

### 3.1 Introduction

This section analyses and empirically assesses the extent to which the behaviour of grocery retailers – in particular, the multiples – towards their suppliers affects the level of competition in the UK grocery supply chain with respect to:

- § New product development (NPD);
- § Product range; and
- § The level of supply of grocery products.

We find no evidence to suggest that multiples have a detrimental effect on upstream supplier innovation in the UK grocery sector. If anything, the data suggest a positive correlation between the level of multiple involvement in the distribution of grocery products at the retail level and the rate of NPD among suppliers.

### 3.2 Importance of NPD in the UK Grocery Sector and the Role played by the Multiples

According to McKenzie and Reynolds (1997), until the late 1990s, profit growth in food and drink companies serving the UK grocery supply chain tended to be generated largely by cost control, improved manufacturing performance, and mergers and acquisitions.<sup>25</sup> Since then, it appears that individual food and drink markets in the UK may have reached a point where increased returns from further consolidation or greater leanness have been difficult to achieve. As a result, food and drink companies may have chosen to focus more on NPD as a means of achieving growth and differentiation, and in terms of responding to developments in consumer demand.

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<sup>25</sup> McKenzie, J. and A. Reynolds (1997) 'Innovation Success in the Food and Drink Industry – Maximising opportunities, minimising risks', Financial Times Retail & Consumer Publishing.

Two inter-related factors have underpinned the increased emphasis on NPD in the UK grocery sector. The first is the need to understand the preferences of consumers and the second relates to enhancing the grocery supply chain in response to the changing patterns of consumer demand.

As mentioned at the beginning of this report (in Sub-Section 1.2), research indicates that consumers are becoming more sophisticated in their consumption patterns by putting more weight on product range and quality. For instance, changes in people's lifestyles have given rise to increased demand for the following food categories:

- § *Convenience foods* – faster and more time-constrained lifestyles have led to higher demand for portable food items, snacking between meals and ready-prepared meals;
- § *Health and wellbeing foods* – greater economic opportunities have led people to place more weight on future earnings and accordingly on leading a healthier life in order to realise future earnings, thus demand for organic foods, low-fat/low-calorie/low-carbohydrate foods and functional/fortified foods has grown rapidly;
- § *Pleasure and indulgence foods* – with higher levels of disposable income, cheaper travel and greater sophistication in eating habits, demand for premium foods, speciality foods, and authentic ethnic and foreign flavours and styles has risen.

Suppliers have come to recognise that launching new products tends to attract more attention from retailers and stimulates consumer interest because their activities raise expectations and enhance the likelihood of further NPD. Retailers' incentives to encourage NPD among suppliers reflect their aim of attracting more customers and building market share.

The retailers appear to have played a role in aligning these incentives and in stimulating NPD among suppliers. Owing to their customer reach and the information they possess regarding shoppers' consumption patterns (for example, through point-of-sale scanner data and from conducting quantitative surveys and focus groups sessions), the multiples are potentially in a position to guide supplier NPD so that the new products introduced onto the marketplace are better able to meet consumer demand and expectations.

Furthermore, the emergence of sophisticated computerised management systems, including inventory management software, may have facilitated the development of more effective contractual relationships between the

multiples and suppliers, leading to more effective NPD and to an enhanced supply chain.

For instance, in the context of food processing and food retailing in the UK, Cox *et al.* (2003)<sup>26</sup> observe that:

“[D]ata generated and recorded at the point of sale on customer preferences and purchasing patterns has given British supermarkets access to information that can be utilized, in conjunction with food processors and packaging firms, to directly initiate aspects of NPD. These alliances we have termed a network of innovation”.<sup>27</sup>

Cox *et al.*'s analysis of these alliances focuses on chilled ready-meals,<sup>28</sup> where “accurate management of the supply chain...is a critical determinant of success...both the NPD and supply-chain management systems represent inter-firm networks that are ultimately driven by consumer demands”.<sup>29</sup>

An earlier study by Howe (1998)<sup>30</sup> suggests that the multiple-supplier relationship is one in which the multiples serve to sharpen the degree of NPD since, unlike suppliers, they deal directly with consumers at the point-of-sale, which appears to support the view that the multiples effectively guide the process of NPD in the UK.

The above points would suggest that retailers help to facilitate supplier NPD in the UK grocery sector. This view is further developed in Sub-Section 3.3 and empirically assessed in Sub-Section 3.4 below.

NPD in the UK grocery sector occurs through own-brand product development as well as *via* branded NPD, the importance of which we noted earlier in citing the study by Leatherhead Food International (2004) in Sub-

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<sup>26</sup> Cox, H., M. Mowatt and M. Prevezer (2003), ‘New Product Development and Product Supply within a Network Setting: The Chilled Ready-Meal Industry in the UK’, *Industry and Innovation*, Vol. 10, No. 2, pp. 197-217.

<sup>27</sup> *Ibid.*, p. 213.

<sup>28</sup> Chilled ready-meals are high value-added premium convenience products, which have grown by 75% between 1993 and 1999. As described by Cox *et al.*, they are ready-prepared complete meals or meal centres that need only heating by oven or microwave and are chilled, not frozen, for freshness. As the meals are highly perishable, and have a very limited shelf life, they require a sophisticated chill chain from supplier to retailer in a few days.

<sup>29</sup> *Ibid.*, pp. 213-4.

<sup>30</sup> Howe, W. S. (1998), ‘Vertical market relations in the UK grocery trade’, *International Journal of Retail & Distribution Management*, Vol. 26, No. 6, pp. 212-24.

Section 1.3. Own-brands have expanded across all grocery food items, allowing the multiples to present multiple quality-price offers and compete for market share.

According to Defra, the UK has long been a European leader in own-brand product development, with about 40% of all grocery items in the UK being accounted for by own-brand items.<sup>31</sup>

The competitive significance of own-brand NPD potentially includes the following:

- § It allows the multiples to become more directly involved in NPD without detracting from manufacturers' branded NPD, which still accounts for the majority of new grocery products introduced in the UK each year;
- § It permits smaller suppliers to compete with the more established brand leaders, easing entry and expansion of new and relatively small food and drink manufacturers; and
- § It gives otherwise locally- or regionally-oriented suppliers access to the national grocery market to which the multiples serve.

### 3.3 A Hypothesis concerning the Multiples as a Facilitator of NPD

Consideration of the multiples' role in facilitating supplier NPD, as described in the previous Sub-Section, suggests the possibility of a positive relationship between the extent to which the multiples are involved in the retail distribution of grocery products and the rate of NPD in those grocery products. This captures the hypothesis that the multiples help to facilitate NPD among suppliers given their unique characteristics, including their ability to stock a large range of new products and their ability to monitor developments in consumer preferences at the retail level.

On the other hand, the view that the multiples have reduced NPD, as some academics have claimed in the past, suggests a negative relationship between the rate of NPD and the extent of multiple involvement in the retail distribution of the grocery products.

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<sup>31</sup> *Op. cit.*, footnote 15, Figure 7, p. 12.

Of interest, therefore, is whether the relationship between the rate of NPD and the multiples' (combined) share of the retail distribution of grocery products in the UK is positive or negative. A positive relationship would tend to support the hypothesis that the multiples help to facilitate NPD; a negative relationship would lend support to the claim that larger retailers limit product innovation in grocery products.

### 3.4 Empirical Evidence on the Multiples as a Facilitator for NPD

To empirically assess the relationship between the rate of NPD and multiples' share of the distribution of grocery products at the retail level, use may be made of a series of market research reports on 16 specific grocery products published by Mintel in 2005-2006. We understand that these are the most recent such market research reports provided by Mintel.<sup>32</sup>

The Mintel reports on the 16 different grocery products provide relevant information on market size, the retail distribution of the products (including the cumulative percentage share due to multiples) and information on the rate of NPD on a product-by-product basis. The qualitative nature of the Mintel information on NPD meant that it is necessary to classify the NPD rate of each product as 'low', 'medium' or 'high', using comments/statements on NPD contained in the Mintel reports (each report contains a section on NPD where it is possible to infer the NPD rate in this way). For instance, in some reports, Mintel referred to NPD as being predominantly re-branding, in which case we deemed the rate of NPD to be 'low'. On other occasions, Mintel described NPD as the launch of genuinely new product varieties, in which case we deemed the NPD rate to be 'high'. A 'medium' rate of NPD reflects a combination of product innovation and re-branding.

A tabular summary of the information we used from the Mintel reports to empirically assess the relationship between the NPD rate and multiple involvement in the retail distribution of the 16 products is presented in Table 3.1 below. This shows, for each product, our assessment of the NPD rate and

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<sup>32</sup> According to the Mintel reports, a 'multiple' is defined as a grocer belonging to a group of ten or more retail shops operated under a common ownership. The multiples considered in the Mintel reports include Tesco, Sainsbury's Asda and Safeway.

the percentage of retail sales due to the multiples.<sup>33</sup>

There are caveats that are important in considering these assessments, which are inherent in the nature of any evaluation of whether a sector is characterised by high or low product development. LE therefore believes that this specific analysis should be considered in the context of other evidence on supplier profitability and the overall performance of the food processing sector including the level of investment in own-R&D. These issues are examined later in this report.

Table 3.1: Summary of Variables in Mintel Reports Relevant for Analysing NPD in UK Grocery Sector – NPD and % Retail Sales due to Multiples

Grocery Product	NPD Rate	% Retail Sales due to the Multiples
Alcoholic Mixers	Low	41.4
Ethical Foods	High	75
Organics	High	75
Fairtrade	High	75
Home Baking Products	High	78
Whiskies	Low	44.5
Functional Foods	High	86
Cheese	High	92
Children's Snacks	Medium	61.8
Energy and Stimulant Drinks	Medium	44
Noodles	Medium	69
Thai & Other Emerging Ethnic Foods	High	89
Adult Soft Drinks	Medium	59
Coffee	High	80
Gluten-Free, Dairy-Free and Other Free-From Food Items	High	76
Ice-Cream	Low	79

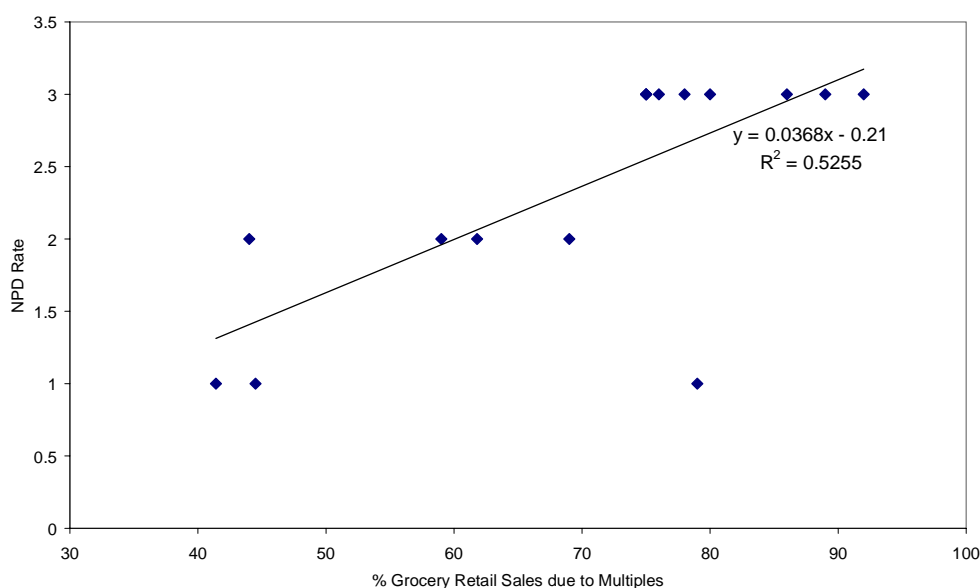
Source: LE analysis of information from Mintel Reports (more detailed in Annex 2).

<sup>33</sup> The quantitative data on the % of retail sales of each product due to the multiples (combined) is taken directly from the Mintel reports. Further product-by-product details are presented in Annex 2.

Graphical illustration of the empirical relationship between the rate of NPD and the percentage sales due to the multiples for the 16 grocery products is presented Figure 3.1 in below. To quantify the qualitative NPD rate, we have adopted the simplest method: this involves attaching products with a 'high' rate of NPD the NPD value of 3; the NPD value of 2 in the case of products for which the NPD rate is deemed to be 'medium'; and the NPD value of 1 for products determined to have a low rate of NPD (in each case, our assessment is based on our review of the Mintel reports).

The scatter points – each representing a grocery product – suggest a positive relationship between the rate of NPD and the extent to which the multiples are involved in the retail distribution of the grocery products. The fitted bivariate regression equation confirms this with a statistically significant positive association between the two variables, in which the proportion of grocery retail sales due to the multiples accounts for almost 53% of the variation in the NPD rate.

Figure 3.1: Empirical Relationship between NPD Rate in Grocery Products and % Grocery Retail Sales in the Products due to Multiples in the UK



Source: LE analysis of information from Mintel Reports (more details in Annex 2).

### 3.5 Growth in Supply in Grocery Product Sales

As well as potentially contributing to NPD in grocery products, the behaviour of the multiples has implications for growth in supply of grocery products although we note that other socio-economic and demographic factors are also relevant. This is seen by looking at the rates of annual growth in retail sales of the 16 grocery products covered in our analysis of the Mintel information.

Table 3.2 below summarises compound annual growth rate (CAGR) figures for the 16 products using the Mintel data. Annual growth in retail sales among the 16 products since 2000 averaged 11.5%, with especially rapid growth taking place in certain grocery lines, namely those associated with the growing consumer demand in health-related items, organics and ethical foods.

Table 3.2: Summary of Variables in Mintel Reports Relevant for Analysing NPD in UK Grocery Sector – Growth in Grocery Retail Sales

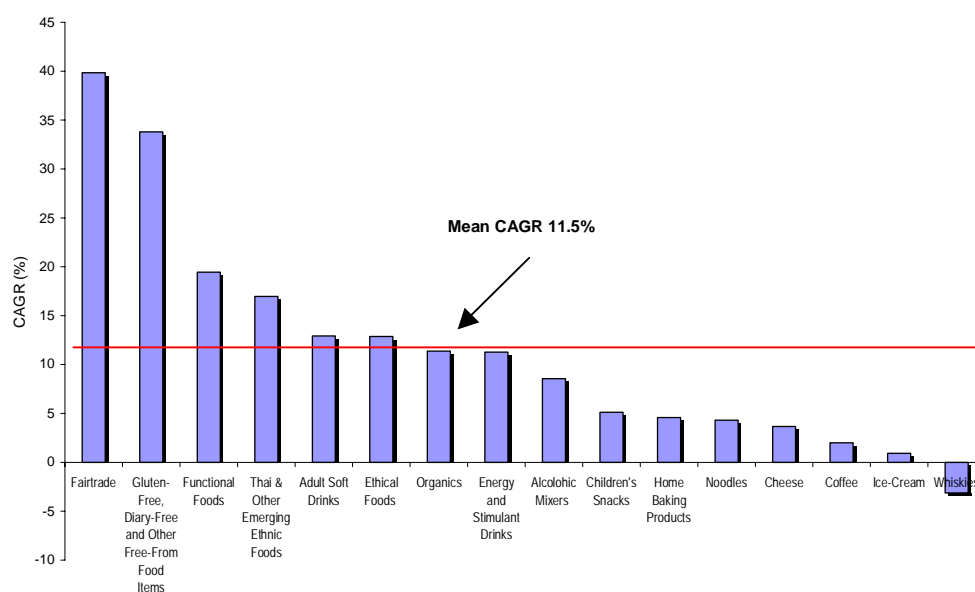
Grocery Product	CAGR (%) in Retail Sales	CAGR Period
Alcoholic Mixers	8.6	2001-2006
Ethical Foods	12.9	2001-2006
Organics	11.4	2001-2006
Fairtrade Items	39.8	2001-2006
Home Baking Products	4.6	2001-2006
Whiskies	-3.1	2000-2005
Functional Foods	19.4	2000-2005
Cheese	3.7	2000-2005
Children's Snacks	5.1	2000-2005
Energy and Stimulant Drinks	11.3	2000-2005
Noodles	4.3	2000-2005
Thai & Other Emerging Ethnic Foods	17.0	2000-2005
Adult Soft Drinks	12.9	2000-2005
Coffee	2.0	2000-2005
Gluten-Free, Dairy-Free and Other Free-From Food Items	33.8	2000-2005
Ice-Cream	0.9	2000-2005

Source: LE analysis of information from Mintel Reports (more details in Annex 2).

The CAGR figures presented in the previous table are graphically illustrated in Figure 3.2 below. As can be seen, especially rapid growth in retail sales, and therefore in supply, has occurred in the following product lines (more details are provided in the tabular summarises in Annex 2:

- § Fairtrade products;
- § Gluten-Free, dairy-Free and other free-from food items;
- § Functional foods;
- § Thai and other ethnic foods;
- § Adult soft drinks;
- § Ethical foods; and
- § Organics.

Figure 3.2: Growth in Retail Sales of 16 Grocery Products in the UK (2000/2001-2005/06)



Source: LE analysis of information from Mintel Reports (more details in Table 5.1Error! Reference source not found.-Table 5.15 below).

The most rapidly growing products illustrated in Figure 3.2 reflect the growth in consumer demand for health-oriented and sophisticated food items in the UK in recent years, which in turn stems from people's changing lifestyles and increased affluence.

Along with our analysis of NPD, the evidence is relevant to considering how the UK grocery supply chain is able to respond to demand-side developments – a hallmark of effective competition.

### 3.6 Summary

This section has analysed and empirically assessed the extent to which the behaviour of the multiples impacts on supplier new product development and expanding the product range in the UK grocery sector. New empirical evidence was presented which would tend to support the view that the multiples facilitate supplier innovation – the evidence appears not consistent with the view that the multiples are detrimental to innovation in the UK grocery sector. Given certain caveats in the data (i.e. the qualitative nature of the NPD rate), it is necessary to also consider direct evidence on the profitability of the sector and the levels of investment.

## 4 Financial Performance of UK Grocery Suppliers

### 4.1 Introduction

In this section, we present information on the financial performance relating to a variety of manufacturing markets relevant to the supply base of the UK grocery sector, including the manufacture of food products, beverages, detergents, perfumes and toilet requisites (as well as in the wholesale sector) since 2000. We present the information for all the markets together and then individually to illustrate their relative performance. We also stratify the manufacture of food products according to company size (by turnover). For consistency and completeness, we provide a comparison over time of the relative performance of the five main grocery retailers since 2000 compared to food manufacturers. The information analysed is from the Amadeus database, which comprises detailed industry and financial information on over 21,000 enterprises in UK manufacturing markets, including approximately 6,500 in UK food manufacturing.

The financial metrics considered in this section illustrate the relative profitability of the food producing sector in the UK over the last five years. The figures show that UK food manufacturing firms had a higher percentage return on assets in 2004 compared to 2000. The data also indicates that the food manufacturing sector had a higher return on assets than was evident for the five major grocery retailers.

### 4.2 Profit Margin and Gross Margin

Comparison of profit margins (either net or gross) can be useful as a means of tracking performance (and therefore sustainability) over time. However, in comparing margins (either across firms or sectors), some care must be taken in interpreting the results. This is because margin measures tend not to reflect the relative efficiency with which firms employ capital. For example, the margin on a high performance car may be significantly higher than that on a can of baked beans. However, the baked beans manufacturer may be earning very similar levels of return on invested capital to the car manufacturer. To address this, we subsequently examine a number of

measures of 'returns' earned in manufacturing sectors over time.

In the context of this analysis, profit margin is defined as profit (or loss) before tax divided by operating revenue. Table 4.1 below illustrates the profit margin for all the UK manufacturing markets under consideration, as well as the profit margin achieved by small enterprises in the food manufacturing sectors and the five largest grocery retailer in the UK. The figure shows that the profit margin in the food and beverage manufacturing sector has consistently been between 5.5% and 8.0% since 2000. In the food manufacturing industry, the profit margins are slightly lower though they have increased between the start of the period and the end of the period from 4.87% to 5.86% compared to a one percentage point reduction in profit margin for the sector as a whole.

Table 4.1: Profit Margin in the UK Manufacturing Sector 2000-2004

Profit Margin: (Profit before Tax)/ (Operating Revenue)	2000	2001	2002	2003	2004
All organisations involved in manufacture and wholesale of food products, beverages, household and sanitary goods, detergents, perfumes and toilet requisites	6.79	7.94	6.66	6.20	5.77
Food manufacturing only	4.87	5.56	6.81	5.58	5.86
Beverage manufacturing only	32.57	41.72	11.68	11.73	12.78
Manufacture of household goods	3.72	1.27	1.19	0.59	0.86
Manufacture of soap, detergents etc	5.73	6.95	8.73	10.51	7.62
Wholesale of food, beverages and tobacco products	2.50	2.62	3.00	2.41	2.67
Small enterprises (turnover < €10m)	3.97	4.30	5.53	5.33	4.33
Average of Waitrose, Tesco, Asda, J Sainsbury and Morrisons	4.03	4.24	4.29	4.27	3.34

Source: LE analysis of Amadeus database.

Adopting the most recent European Commission definitions of organisational size, we also consider the profit margins achieved by small scale enterprises in the food manufacturing sector. In this analysis, we have adopted the EC definition of firm size according to turnover where a small company is defined as having a turnover of less than €10m in a financial year.

In Table 4.1 it can be seen that food manufacturing companies with an annual turnover of less than €10 million achieved a profit margin approximately 1 percentage point less than the average food manufacturing organisation. Nevertheless, it also appears to be the case that profit margin is increasing over the five year period in question.

The Amadeus data allows the analysis of the profit margins achieved by the five main grocery retailers (Asda, Morrison's, Sainsbury's, Tesco, and Waitrose) compared to the food manufacturing sector. The data illustrate that compared to the food manufacturing sector, which achieved an average profit margin of 5.73% over the five year period, the five large grocery retailers achieved an average profit margin over the period of 4.03%, almost 30% lower than food producers.

A similar pattern emerges when considering alternative measures of profitability, such as the gross margin, defined as gross profit divided by operating revenue. In the manufacturing sector as a whole, gross margin is approximately 28% per annum across the five years, with little or no variation between the five years under analysis.

In the food manufacturing industry, the average gross margin is 3.2 percentage points less than the average across all sectors though the annual estimates have remained relatively robust over the time period in question and in 2004 (the most recent year of analysis) gross profit margins for firms in the food manufacturing sector were 26.91% corresponding to a 1.5 percentage point increase over the period (Table 4.2).

Table 4.2: Gross Margin by Manufacturing Sector 2000-2004

Gross Margin: (Gross Profit/ (Operating Revenue)	2000	2001	2002	2003	2004
All organisations involved in manufacture and wholesale of food products, beverages, household and sanitary goods, detergents, perfumes and toilet requisites	28.27	28.23	30.82	30.87	28.82
Food manufacturing only	25.39	25.57	26.24	26.76	26.91
Beverage manufacturing only	34.99	34.89	52.15	54.59	36.85
Manufacture of household goods	29.76	17.30	22.67	21.12	21.98
Manufacture of soap, detergents etc	44.90	45.49	47.60	48.98	49.14
Wholesale of food, beverages and tobacco products	14.65	16.29	16.47	16.53	16.23
Small enterprises (turnover < €10m)	37.73	49.19	53.39	55.00	54.19

Source: LE analysis of Amadeus database.

The gross margins achieved by small size organisations by turnover in the food manufacturing sector are also presented in Table 4.2. The evidence suggests that the gross margin achieved by small firms is greater than that achieved in the food manufacturing sector as a whole. In particular, compared to the average firm in the food manufacturing sector, firms with a turnover of less than €10m achieve gross margins approximately 20 percentage points greater than average. In addition, gross margins have increased considerably over the period in question from approximately 38% in 2000 to over 54% in 2004.

Additional analysis has also been undertaken of the Amadeus dataset to understand whether the improvement in profit margins and gross margins in the food manufacturing sector is concentrated in just a few firms or whether these outcomes are more evenly spread across the sector. It was found that for the firms providing information in both 2000 and 2004, 50.45% registered either a static or increasing profit margin over the period.

Analysis of the Amadeus data shows that the five major supermarkets in the UK achieved gross margins in the region of 8-12% per annum, though the average gross margin is at the lower end of this range standing at 8.5%. The gross margins achieved by the five largest supermarkets are approximately one-third the size achieved by food manufacturers. This information is presented in Table 4.3 below.

Table 4.3: Gross Margin of largest five grocery retailers, 2000-2004

Gross Margin: (Gross Profit/ (Operating Revenue)	2000	2001	2002	2003	2004
All organisations involved in manufacture and wholesale of food products, beverages, household and sanitary goods, detergents, perfumes and toilet requisites	28.27	28.23	30.82	30.87	28.82
Manufacture of food products	25.39	25.57	26.24	26.76	26.91
Average of Waitrose, Tesco, Asda, J Sainsbury and Morrisons	8.10	8.42	8.70	9.09	7.98

Source: LE analysis of Amadeus database.

### 4.3 EBIT Margin and EBITDA Margin

The EBIT<sup>34</sup> margin is defined as the earnings before interest and taxes (EBIT) divided by operating revenue while the EBITDA<sup>35</sup> margin is defined as earnings before interest, taxes, depreciation and amortisation divided by operating revenue. EBIT is considered an important measure of financial soundness since it represents the amount of cash that a company will be able to use to pay off creditors and is also known as operating profit.

The EBITDA earnings measure is of particular interest in cases where companies have large amounts of fixed assets that are subject to heavy depreciation charges (such as manufacturing companies) or in the case where a company has a large amount of acquired intangible assets on its books and is thus subject to large amortisation charges (such as a company that has purchased a brand or a company that has recently made a large acquisition). EBITDA is a good way of comparing companies within and across industries. This measure is also of interest since EBITDA is essentially the income that a company has free for interest payments.

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<sup>34</sup> Earnings before interest and taxes (also called operating profit) is a measure of a company's earning power from ongoing operations, equal to earnings before deduction of interest payments and income taxes. EBIT excludes income and expenditure from unusual, non-recurring or discontinued activities.

<sup>35</sup> Earnings before interest, taxes, depreciation and amortisation. An approximate measure of a company's operating cash flow based on data from the company's income statement. EBITDA is calculated by looking at earnings before the deduction of interest expenses, taxes, depreciation, and amortisation.

Table 4.4: EBIT Margin by Manufacturing Sector 2000-2004

EBIT Margin: (Earnings before interest and taxes/ (Operating Revenue)	2000	2001	2002	2003	2004
All organisations involved in manufacture and wholesale of food products, beverages, household and sanitary goods, detergents, perfumes and toilet requisites	5.50	6.24	6.59	6.44	5.50
Food manufacturing only	5.88	6.12	6.36	6.14	5.74
Beverage manufacturing only	8.07	8.76	9.69	9.89	9.93
Manufacture of household goods	5.87	2.18	2.33	1.19	2.06
Manufacture of soap, detergents etc	6.97	9.50	9.78	10.95	7.26
Wholesale of food, beverages and tobacco products	2.74	3.09	3.35	2.72	2.87
Small enterprises (turnover < €10m)	4.73	5.02	5.81	4.46	3.76
Average of Waitrose, Tesco, Asda, J Sainsbury and Morrisons	4.41	4.51	4.46	4.52	3.10

Source: LE analysis of Amadeus database.

The EBIT margin or operating profit margin in the entire manufacturing sectors under consideration has ranged between 5.50% (in 2000 and 2004) and 6.59% (in 2002) (Table 4.4). The average operating profit margin is approximately 6.05%. The EBIT margin in the food-manufacturing sector is exactly in line with that achieved across the entire sector. This estimate ranks third of the four subcategories – behind beverage and soap/detergent manufacturing and ahead food, beverage and tobacco wholesaling (averaging 2.96%).

We also present the equivalent information for small enterprises and the five major UK grocery suppliers in Table 4.4. The EBIT margin of small firms is less than that achieved by the average food manufacturer. Specifically the operating profit margin is 1.29 percentage points lower in firms with an annual turnover of less than €10m compared to the average food manufacturing firm.

Analysis of the Amadeus data shows that the five major grocery retailers experienced relatively low EBIT margins and in every year of the analysis, the average EBIT margin is lower than the average EBIT margin achieved by food producers. On average, the EBIT margin posted by the largest five grocery retailers is also 1.85 percentage points lower than the average margin posted by food manufacturers (irrespective of turnover) and 0.55 percentage points lower compared to the average annual operating profit margin of enterprises

with a turnover of less than €10m. The information relating to EBITDA margins replicates the information presented in this section relating to EBIT margins.

#### 4.4 Return on Total Assets, Return on Capital Employed and Return on Shareholder Funds

In this subsection we present information on a variety of ratios relating to the return on various types of investment. In particular, we provide information on the return to total assets, which is defined as the profit (loss) before taxes divided by total assets; the return on capital employed, which is defined as the profit (loss) before taxes divided by capital employed; and the return on shareholder funds, which is defined as the profit (loss) before taxes divided by shareholder funds. The return on total assets by manufacturing sector is presented in Table 4.5.

Table 4.5: Return on Total Assets by Manufacturing Sector 2000-2004

Return on total assets: (Profit before Tax)/ (Total Assets)	2000	2001	2002	2003	2004
All organisations involved in manufacture and wholesale of food products, beverages, household and sanitary goods, detergents, perfumes and toilet requisites	7.65	9.11	8.07	7.52	7.61
Food manufacturing only	6.91	7.17	8.39	6.78	7.68
Beverage manufacturing only	13.10	16.51	6.81	7.35	7.44
Manufacture of soap, detergents etc	5.03	6.97	9.57	11.83	8.94
Wholesale of food, beverages and tobacco products	6.10	6.15	7.11	4.74	6.32

Source: LE analysis of Amadeus database.

An analysis of UK food manufacturing sector is also presented in Table 4.5. The food manufacturing sector posted an average return of 7.39%. Interestingly, the figures show that the return on assets of UK food manufacturing sector was higher in 2004 than in 2000. In contrast to the food manufacturing sector, analysis of the Amadeus data shows that the five major grocery retailers suffered a reduction in the average return on total assets between 2000 and 2004. In particular, the average return on total assets stood at 7.57% in 2000 and fell by almost 2 percentage points to 5.61% in 2004. The

average return to total assets over the period was 7.2%, which was less than the food manufacturing sub-sector. This information is given in Table 4.6.

Table 4.6: Return to Total Assets of Largest Five Grocery Retailers 2000-2004

Return on total assets: (Profit before Tax)/ (Total Assets)	2000	2001	2002	2003	2004
All organisations involved in manufacture and wholesale of food products, beverages, household and sanitary goods, detergents, perfumes and toilet requisites	7.65	9.11	8.07	7.52	7.61
Manufacture of food products	6.91	7.17	8.39	6.78	7.68
Average of Waitrose, Tesco, Asda, J Sainsbury and Morrisons	7.57	7.91	7.49	7.43	5.61

Source: LE analysis of Amadeus database.

## 4.5 Summary

The financial metrics presented in this section illustrate the relative profitability of the food producing sector in the UK over the last five years. The figures show that UK food manufacturing firms had a higher percentage return on assets in 2004 compared to 2000. The Amadeus data also indicates that the food manufacturing sector had a higher return on assets than was evident for the five major grocery retailers.

## 5 Comparative Economic Performance of UK Grocery Suppliers

### 5.1 Introduction

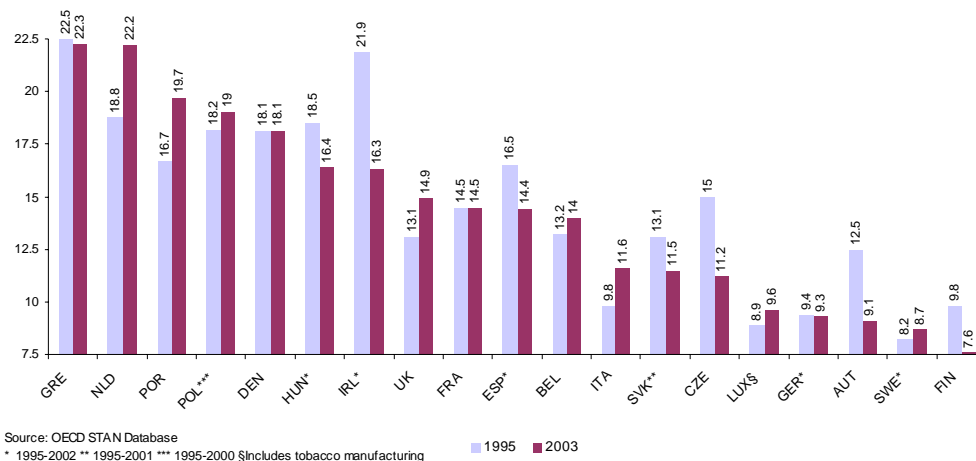
In this section, we consider a variety of measures relating to value added, operating surplus and labour productivity to provide a comparative assessment of the economic performance of the food and drink manufacturing industry in the UK compared with its counterpart in other EU Member States and the EU as a whole (where the data allow). The data used are from the OECD Structural Analysis database (STAN) and from Eurostat. The STAN database, described in Annex 1, includes annual measures relating to output, investment, productivity growth and competitiveness, *inter alia*.

The evidence presented shows that the UK food and beverage manufacturing sector has recorded strong growth in key financial and economic metrics relative to its equivalent sectors in other European countries. In particular, the food and beverage manufacturing industries in the UK have increased the share of total manufacturing value added; achieved gross operating margins greater than manufacturing as a whole and greater than most EU Member states; achieved strong and consistent growth in gross operating margin; registered the third highest apparent labour productivity within the EU and 60% higher than the EU average; and had the third highest rate of growth in labour productivity since 1995.

### 5.2 Value Added

In 1995, the UK food and drink (and tobacco) manufacturing industry accounted for over 13% of the total value added generated by the entire manufacturing sector in the UK. This proportion grew rapidly to reach almost 15% a decade later, as illustrated in Figure 5.1.

Figure 5.1: Share of UK Manufacturing Value Added Associated with Food, Beverage and Tobacco Manufacturing 1995 and 2003



Source: LE analysis of OECD STAN Database.

The latest data available illustrate that the contribution of food and beverage manufacturing to overall manufacturing value added puts the UK in eighth out of 19 EU countries examined. The only other countries showing an increasing contribution of food and beverage manufacturing over time to manufacturing as a whole were the Netherlands, Portugal, Poland, Belgium, Italy, Luxembourg and Sweden. The increase in the contribution to value added to total manufacturing value added in the UK is equivalent to a 14% increase during 1995-2005, which is the fourth largest increase in value added contribution across the 19 countries we examined.

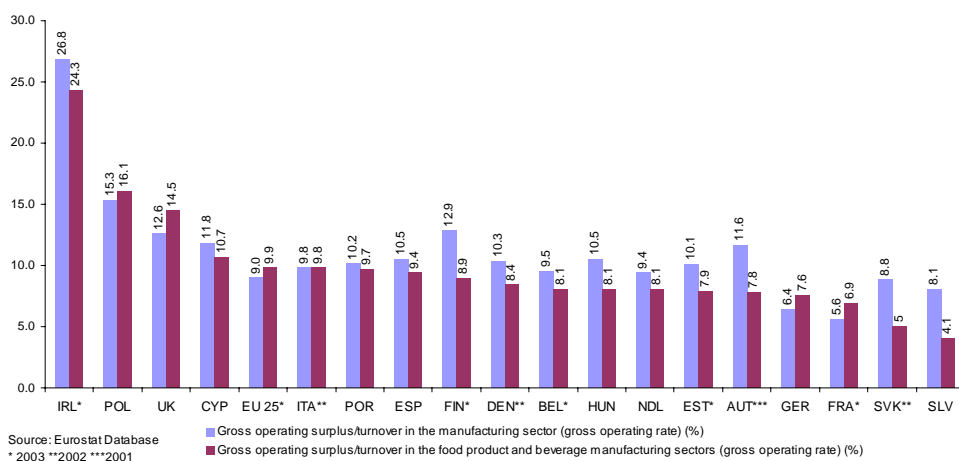
### 5.3 Operating Surplus

One of the primary measures of financial performance is operating surplus and is closely linked to the measures of EBIT and EBITDA presented in the preceding section.<sup>36</sup> Using information from Eurostat, we present the operating surplus achieved in the various EU Member States in the manufacturing industry as a whole as well as at the disaggregated level of

<sup>36</sup> Gross operating surplus is the surplus generated by operating activities after the labour factor input has been recompensed. It is calculated from the value added at factor cost less the personnel costs. It is the balance available to the unit which allows it to recompense the providers of own funds and debt, to pay taxes and eventually to finance all or a part of its investment.

food, beverage (and tobacco) manufacturing.

Figure 5.2: Gross Operating Surplus/Margin in UK Manufacturing and in Manufacturing of Food and Beverages (and Tobacco) 2004



Source: LE analysis of Eurostat data.

Figure 5.2 above illustrates the relatively high gross operating surplus as a percentage of turnover in UK manufacturing industry as a whole. Specifically, between 2002 and 2004, the gross operating margin was approximately 12.6% in the UK manufacturing sector compared to the 9.0% average achieved in the EU 25 Member States as a whole. The manufacturing sectors in Ireland (26.8%),<sup>37</sup> Poland (15.3%) and Finland (12.9%) were the only Member States that outperformed the manufacturing sector in the UK.

The gross operating margin in the food, beverage (and tobacco) sectors stood at the even higher figure of 14.5% in the UK in 2004, again illustrating the relative strength of the sector relative to manufacturing as a whole in the UK. The average across all 25 EU Member States was less than 10% and there were only 2 countries for which data was available illustrating a higher gross operating margin greater than that in the UK (Ireland (24.3%) and Poland

<sup>37</sup> The estimates for manufacturing in Ireland indicate that gross operating surplus was on average 26.8% between 2002 and 2004 and 24.3% in the food and beverage manufacturing sector in 2004. Gross operating surplus in the manufacturing sector as a whole has remained relatively consistent over time rising continually from 21.7% in 1995 to 28.7% in 2004. However, in the food and beverage manufacturing sector, the results are partially skewed by a substantial improvement in the estimate of gross operating surplus in 2003 (24.3%). Between 1995 and 2001, gross operating surplus in the sector ranged between 14.5% (in 1995) to 18.4% (in 2001). There was no information collected on gross operating surplus in the food and beverage manufacturing sector in 2002.

(16.1%).

Across the EU 25 Member states, the gross operating margin is greater on average than the gross operating margin in the manufacturing sector as a whole, though this is by no means uniform across countries. In particular, apart from the UK, which registered a 1.9 percentage point out-performance in the food and beverage manufacturing sectors relative to the entire manufacturing sector, only Poland (0.8 percentage points), Germany (1.2 percentage points) and France (1.3 percentage points) illustrated a similar outcome. The relative out-performance of the UK food and beverage manufacturing sector is the greatest across the whole of Europe.

It is not the case that the relative out-performance of the food and beverage manufacturing sectors simply reflects a worsening of the manufacturing sector as a whole. In particular, in 1996 (the earliest year for which data exists), the gross operating surplus in the UK manufacturing sector stood at 12.9% marginally above the average posted in the sector between 2002 and 2004 (and below the 13.2% posted in 2004). In the food and beverage manufacturing sectors, the gross operating margin in 1996 stood at 13.8% (0.9 percentage points above the entire manufacturing sector) which was also 0.7 percentage points less than the gross operating surplus posted in the sector in 2004.

The results above are derived from Eurostat data, however the equivalent information from the OECD STAN database mimic those findings presented above. In particular, the operating surplus in the food and beverage manufacturing sector ranked third of the 14 countries included in the analysis.

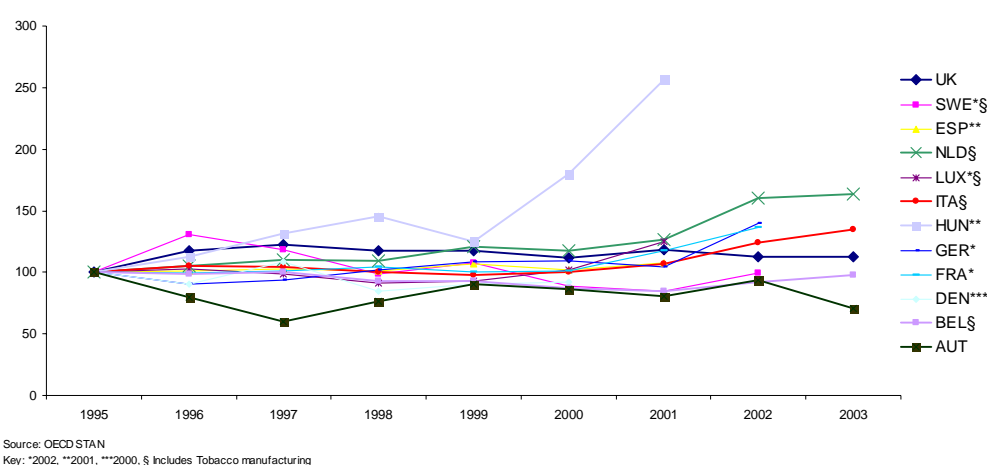
## 5.4 Operating Surplus over Time

The analysis of the OECD STAN database suggests that the food and beverage manufacturing sector had a particularly good year in 2003 (the latest year for which data exists) in absolute terms and relative to the entire manufacturing sector. Looking at the trends over time, there is some volatility in the estimates of operating surplus for individual countries from year to year so we consider the operating surplus in the food and beverage manufacturing sectors over the entire period.

The operating surplus in the UK food and beverage manufacturing industries has remained relatively strong every year since 1995. In particular, operating

surplus in the food and beverage manufacturing sector is almost 13% higher in the UK in 2003 than it was in 1995 (with operating surplus approximately 14.4% higher in each year than the figure posted in 1995). Other European economies (including Germany and France) exhibited less stable growth in this performance metric over the period and this is illustrative of the sustainability of the food and drink manufacturing industry in the UK compared to the food manufacturing sector in other EU member states.

Figure 5.3: Operating Surplus in Manufacture of Food, Beverages and Tobacco in Various Countries 1995-2003

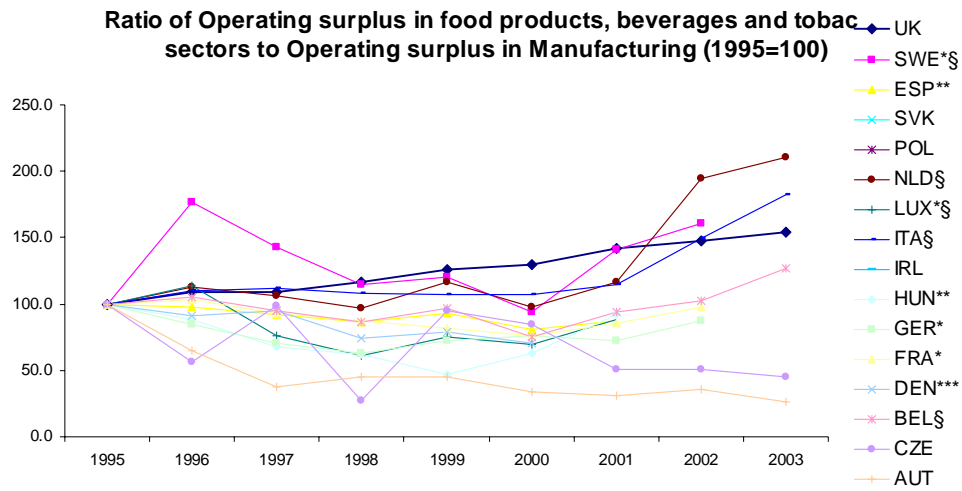


Source: LE analysis of OECD STAN Database.

In Figure 5.4 below, we present the relative performance in terms of operating surplus of the food and beverage manufacturing sectors relative to the entire manufacturing sector in every year since 1995.

The figure illustrates that the food and beverage manufacturing industry in the UK has out-performed the manufacturing sector as a whole in each and every year since 1995. The cumulative out-performance in the sector is 53%. In addition, the relative performance of the UK food and beverage manufacturing sectors has been higher than that in all other European countries for which data exist with the exception of Sweden, the Netherlands and Italy (all of whom incorporate tobacco manufacturing). Of those countries providing information on food and beverage manufacturing only, the UK food and beverage manufacturing sectors achieve the greatest out-performance in operating surplus relative to the manufacturing sector as a whole.

Figure 5.4: Ratio of Operating Surplus in Manufacture of Food, Beverages and Tobacco to Operating Surplus in Manufacturing Overall in Various Countries 1995-2003



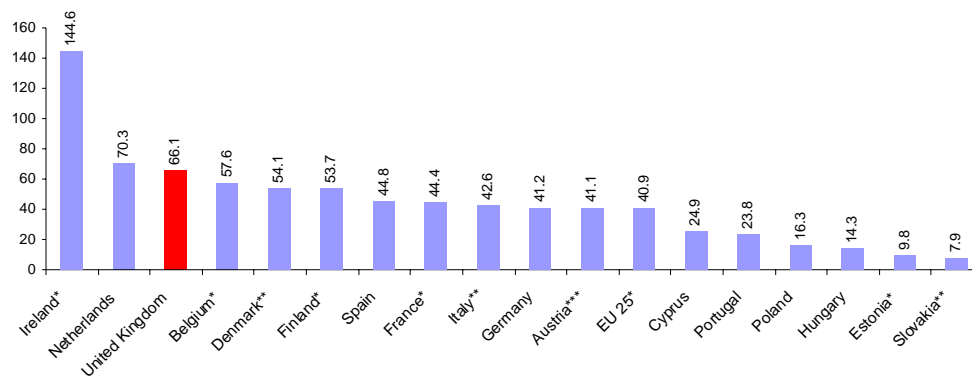
Source: LE analysis of OECD STAN Database.

## 5.5 Labour Productivity

In Section 2, we presented information on GVA per person employed (as a measure of labour productivity) in the UK manufacturing sector (£63,300 per annum in 2004) and the UK food and beverage manufacturing sector (£66,100 per annum in 2004).

Eurostat information allows us to compare the apparent labour productivity in the food and beverage (and tobacco) manufacturing sectors across EU Member states. This information is presented in Figure 5.5 below.

Figure 5.5: Gross Value Added per Person (€000) Employed in UK  
Manufacture of Food, Beverages and Tobacco 2004



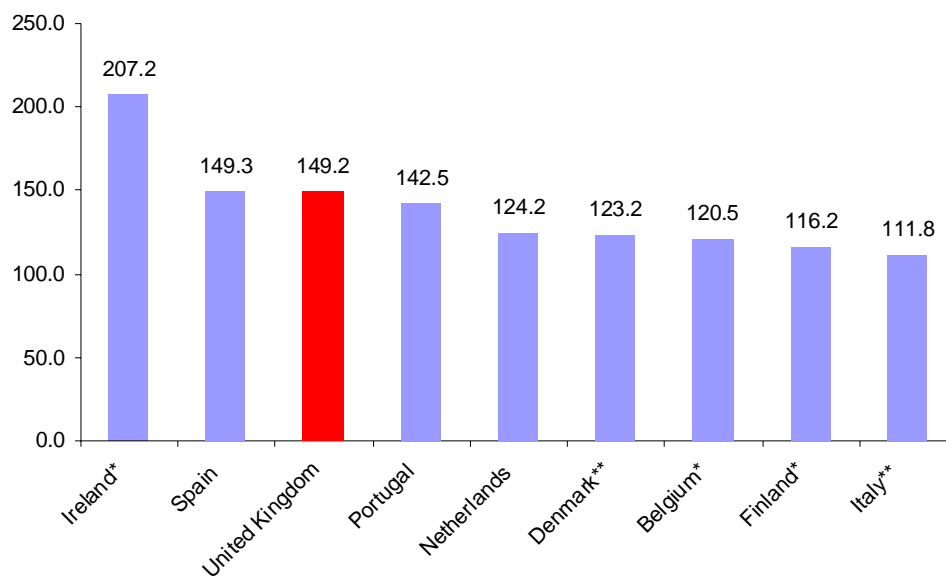
Source: Eurostat  
\*2003 \*\* 2003 \*\*\*2002

Source: LE analysis of Eurostat data.

The data presented illustrates the wide variation in apparent labour productivity across the EU Member states. The average across the 25 EU member states in 2003 was €40,900 per person employed. As previously mentioned, labour productivity in the food and beverage manufacturing sector in the UK stood at €66,100 per person per annum in 2004 – more than 61% higher than across the EU as a whole. The UK food and beverage manufacturing sector registered the third highest rate of labour productivity (as measured by this metric) across the 25 EU member states for which data exist, with only Ireland and the Netherlands achieving higher rates of labour productivity.

The UK food and manufacturing sector has also generally outperformed its European neighbours in terms of growth in labour productivity over time as well as by the absolute level of labour productivity at a given point in time. This is seen in Figure 5.6.

Figure 5.6: Change in Gross Value Added per Person Employed in UK Manufacture of Food, Beverages and Tobacco in Various Countries 1995-2004 (1995=100)



Source: LE analysis of Eurostat data.

## 5.6 Summary

This section has illustrated the fact that the UK food and beverage manufacturing sector has recorded strong growth in key financial and economic metrics relative to its equivalent sectors in other European countries. In particular, the food and beverage manufacturing industries in the UK have increased the share of total manufacturing value added; achieved gross operating margins greater than manufacturing as a whole and greater than most EU Member states; achieved strong and consistent growth in gross operating margin; registered the third highest apparent labour productivity within the EU and 60% higher than the EU average; and had the third highest rate of growth in labour productivity since 1995.

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## Annex 1 Outline of Datasets Used

### *Introduction*

The national and international datasets used in this report are as follows:

- § Section 2 – Annual Business Inquiry (ABI) and Eurostat Structural Business Statistics (SBS);
- § Section 3 – Mintel market research reports;
- § Section 4 – Amadeus database;
- § Section 5– OECD Stan database;
- § Annex 1 – DTI Innovation Survey/EU Community Innovation Survey and European e-Business Watch.

### *Annual Business Inquiry (ABI)*

The Annual Business Inquiry (ABI) is administered by the Office for National Statistics (ONS) and is conducted in two parts: one dealing with employment (ABI/1); and the other (ABI/2) with financial information.

The ABI/2 survey collects comprehensive financial information from various businesses representing the majority of the UK economy. The ONS survey collects business information for England, Scotland and Wales. The Department of Enterprise Trade and Investment (DETI) of Northern Ireland collects the same ABI information (NIABI) independently. Both data sources are then combined to produce ABI/2 estimates on a UK-wide basis.

The financial inquiry covers about two-thirds of the UK economy. The national coverage of the employment inquiry is wider. The survey has been undertaken annually since 1997 and has a sample size in the region of 74,000.

Data from the ABI/2 outputs are used by a wide range of users. The ABI/2 is vital for a variety of internal and numerous external customers. The key users and uses of the output include:

- § National Accounts – the ABI/2 is central to the compilation of input-output tables, which provide a framework for understanding and analysing the interdependence of industries in the UK;
- § Index of Services – the ABI/2 provides weights for index aggregation and turnover deflation;

- 
- § Eurostat – the ABI/2 is a source of annual structural statistics for the Structural Business Statistics Regulation (SBSR) for policy monitoring and formulation by the European Union;
  - § The Scottish Executive and the Welsh Assembly – the ABI/2 provides data on production and construction and is an essential input in the calculation of the Scottish and Welsh Indices of Production.

### *Eurostat Structural Business Statistics*

Eurostat's Structural Business Statistics (SBS) describe the economy through the observation of the activity of units engaged in an economic activity. The characteristics and indicators collected as part of the data include business demographic variables (such as the number of enterprises, number of local units), input-related variables (such as the number of persons employed, the cost of inputs and capital inputs like gross investment in tangible goods) and output-related variables (including turnover, production value and value added at factor costs).

SBS consists of a horizontal module, including a set of fundamental statistics for all market activities. Six sector-specific annexes cover a more extended list of sector-specific characteristics. The sector-specific annexes are: industry, distributive trades, construction, insurance services, credit institutions and pension funds.

The SBS data cover the 25 EU Member States, the EU candidate countries, Norway and Switzerland. The data are generally collected by the National Statistical Institutes (NSI) from enterprises through national statistical surveys, business registers or administrative sources. The NSIs, such as the ONS in the UK, use one or several of these sources, according to the survey strategy they have adopted, taking into account the costs, the quality and the response burden on enterprises.

### *Mintel Market Research Reports*

Market research organisation Mintel provides detailed survey-based and other market research information on various grocery products in the UK. The information includes data on market size, distribution (including the cumulative percentage share of the retail distribution of the grocery products due to the multiples) and qualitative information on NPD on a product-by-product basis, from which it is possible to infer the rate of NPD on a category basis (i.e. 'low', 'medium' and 'broad'). We use this information to consider

whether the multiples facilitate supplier NPD in the UK grocery sector.

### *Amadeus Database*

Amadeus is a comprehensive, pan-European database containing financial information on almost 9m public and private companies in 38 European countries. It combines data from over 30 specialist regional information providers (IPs), such as Companies House in the UK. Data is available on standardised annual accounts (for up to 10 years), both consolidated and unconsolidated, financial ratios, activities and ownership of the companies covered.

A standard company report includes: 24 balance sheet items; 25 profit and loss account items; 26 financial ratios; and descriptive information including trade description and activity codes (NACE codes), and ownership information.

The Amadeus database contains such detailed industry and financial information on over 21,000 enterprises in UK manufacturing markets, including approximately 6,500 in UK food manufacturing. The financial analysis presented in Section 4 makes use of the Amadeus data on profit margin, gross margin, EBIT and EBITDA margins, return on shareholder funds, return on capital employed, and return on total assets.

### *OECD STAN Database for Industrial Analysis*

The OECD STAN database is a comprehensive dataset containing information on industrial performance at a relatively detailed level of economic activity. It includes annual measures of output, labour input, investment and international trade that allow for the construction of a wide range of indicators for the detailed analysis of areas such as productivity growth, competitiveness and general structural change. Through the use of a standard industry list, comparisons can be made across countries.

STAN is primarily based on Annual National Accounts by activity tables. Member countries officially submit data for inclusion in OECD's Annual National Accounts database (ANA) *via* a joint OECD/Eurostat questionnaire. As the request covers all aspects of national accounts, activity detail is only requested at fairly aggregated levels. Since many countries have more detail available, OECD sends out a supplementary request asking for as much activity detail as possible for as many variables as possible for use in STAN and other OECD data sets.

National Accounts are an attempt to provide balanced accounts to describe a nation's economy (usually according to international standards). The contents of most tables are not directly measured but are compiled from a wide range of data sources with adjustments and estimations made by national experts. For activity data, much use is made of information from annual industrial surveys and/or censuses and short-term indicators of industrial activity as well as labour force surveys, business registers, income surveys and input-output tables. National Accounts are traditionally considered more internationally comparable than industrial survey data.

STAN is maintained by the Economic Analysis and Statistics Division of OECD's Directorate for Science, Technology and Industry under the auspices of the Statistical Working Party of OECD's Committee on Industry and Business Environment.

### *DTI Innovation Survey/Community Innovation Survey*

The Community Innovation Survey (CIS) is a survey conducted every 4 years by EU Member States that allows the monitoring of Europe's progress in the area of innovation. The UK Innovation Survey of 2005, the fourth Europe-wide CIS, is the largest so far conducted, sent to 28,000 UK enterprises with 10 or more employees and achieving a 58% response rate. It provides the UK data covering the three-year period from 2002 to 2004.

The surveys follow general guidelines set out in an OECD publication known as the Oslo manual (OECD 2005) which offers guidelines on the conduct of innovation surveys, including statistical procedures and a review of the range of concepts that fall together under the umbrella term of 'innovation'. These include:

- § Product innovation – bringing to the market or into use by business, new and improved products, including both tangible goods and the provision of services (the degree of innovativeness is shown by the distinction between products new just to the business or which are also new to the market);
- § Process innovation – significant changes in the way that goods or services are produced or provided, again differentiating between processes new to the business only or also new to the industry;
- § Categories of investment – R&D, capital goods and software acquisition, design activity;

- § Management related – types of innovation that have sometimes been referred to as soft or wider innovation, such as strategic changes to the organisation of business or its functions, in order to achieve gains in competitiveness through efficiency or service improvements.

The UK and other European innovation surveys, known collectively as the Community Innovation Survey, take a broadly common form and ask mostly the same questions, enabling some degree of international comparison, within the limits of differing national systems, institutions and economic contexts.

#### *European e-Business Watch*

The e-Business Watch is an initiative launched by the European Commission DG Enterprise and Industry, in late 2001, and monitors information and communications technology (ICT)-related developments and their impacts on different sectors of the European economy, with a special emphasis being placed on implications for SMEs. The data is primarily based on surveys of decision-makers in European enterprises carried out in 2002, 2003, 2005 and 2006.

## Annex 2 Summaries of NPD and Multiple Distribution of UK Grocery Products

Presented in the tables overleaf are further details, in tabular form, of our analysis of the Mintel reports, as reported in Section 3.

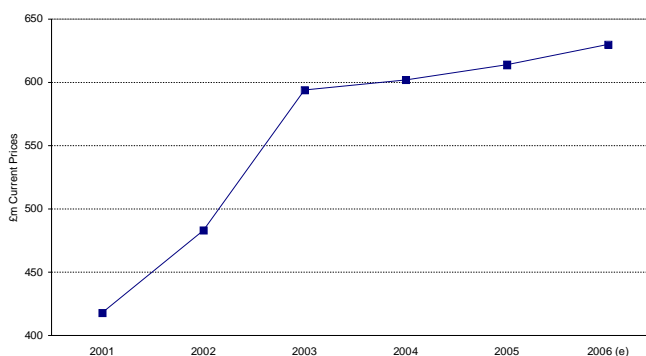
For each of the 16 separate products that we have considered, in each of the following tables, we provide information and data on the following variables:

- § Product definition;
- § Market size and growth (CAGR basis);
- § Consumer trends, including comments on changing patterns of consumer demand;
- § Percentage of retail sales due to the multiples (the x-axis in our analysis of the hypothesis that the multiples act as a facilitator for NPD in the UK grocery sector); and
- § NPD and our assessment of the NPD rate (the y-axis in our analysis of the hypothesis that the multiples act as a catalyst for NPD in the UK grocery sector).

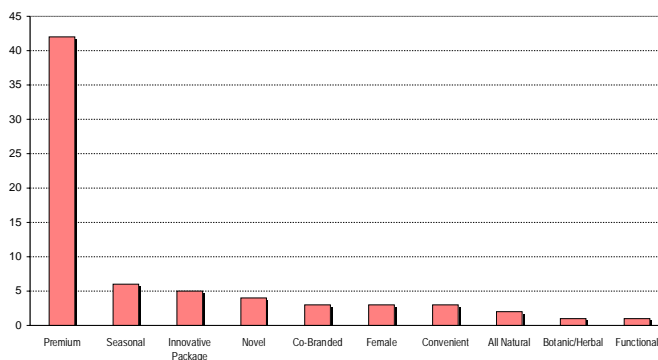
Table 5.1: UK Grocery Case Study – Alcoholic Mixables

Characteristic	Evidence
<i>Definition</i>	Drinks (but not spirits) to which a mixer such as lemonade, orange juice, tonic water or cola is usually added, though in most cases they are drunk either straight or on ice. Includes spirit-based mixables (e.g. Malibu), Italian bitters (e.g. Campari), Aromatised wines and aperitifs (e.g. Martini) and liqueurs.
<i>Market Size and Growth</i>	Market size estimated at £630m in 2006, CAGR 8.6% (2001-2006e).
<i>Consumer Trends</i>	The main consumer trend affecting alcoholic mixables and indeed alcoholic drinks in general has been the growth in off-trade drinking on the rise (home drinking).
<i>% retail sales by multiples</i>	41.4% (2005, volume).
<i>New Product Development</i>	Premium positioning has dominated launch activity during first half of 2006 (>40 new products). However, most activity has involved re-branding. NPD rate – low.

UK Grocery Retail Sales of Alcoholic Mixables 2001-2006



No. New Products by Positioning Claims, Feb-July 2006



Source: LE adaptation of Mintel 'Alcoholic Mixables', Market Intelligence, August 2006.

Table 5.2: UK Grocery Case Study – Ethical Foods

Characteristic	Evidence														
<i>Definition</i>	<p>Have three attributes:</p> <ul style="list-style-type: none"> <li>• Disadvantaged communities</li> <li>• Animal welfare</li> <li>• Environmental sustainability</li> </ul> <p>Includes organics, Fairtrade, farmers' markets and 'freedom foods'. Fairtrade guarantees developing world farmers a fair price covering production cost plus a premium on community projects such as better healthcare, sanitation, education or housing.</p>														
<i>Market Size and Growth</i>	<p>Market size estimated at £2.155bn in 2006. Within this, organic food accounted for 60% of sales, followed by Fairtrade products (11%), farmers' markets (10%), free range eggs (10%) and freedom foods (10%).</p> <p>CAGR in ethical foods 12.9% (2002-2006e).</p>														
	<p style="text-align: center;"><b>UK Grocery Retail Sales of Ethical Foods 2001-2006</b></p> <table border="1"> <caption>UK Grocery Retail Sales of Ethical Foods 2001-2006</caption> <thead> <tr> <th>Year</th> <th>£m Current Prices</th> </tr> </thead> <tbody> <tr> <td>2001</td> <td>0</td> </tr> <tr> <td>2002</td> <td>1,300</td> </tr> <tr> <td>2003</td> <td>0</td> </tr> <tr> <td>2004</td> <td>1,700</td> </tr> <tr> <td>2005</td> <td>0</td> </tr> <tr> <td>2006 (e)</td> <td>2,155</td> </tr> </tbody> </table>	Year	£m Current Prices	2001	0	2002	1,300	2003	0	2004	1,700	2005	0	2006 (e)	2,155
Year	£m Current Prices														
2001	0														
2002	1,300														
2003	0														
2004	1,700														
2005	0														
2006 (e)	2,155														
<i>Consumer Trends</i>	<p>Consumers are aware that 'ethical' cannot be defined by a single type of product but top rankings are given to human issues, environmental and animal welfare (e.g. free range).</p>														
<i>% retail sales by multiples</i>	<p>c. 75%.</p>														
<i>New Product Development</i>	<p>Supermarkets are rapidly stocking ethical food items under various categories – particularly rapid expansion by multiples' organic ranges to meet consumer demand patterns. The biggest impact on the market in 2005/06 was the entry and expansion of Fairtrade ranges from the multiples and mainstream food groups. UK sales of Fairtrade products experienced CAGR of 39.8% 2001-2005. The biggest growing Fairtrade product lines (2001-2005) have been in chocolate (266.7%), coffee (247.4%), bananas (220%) and tea (167%).</p> <p>NPD rate – high.</p>														

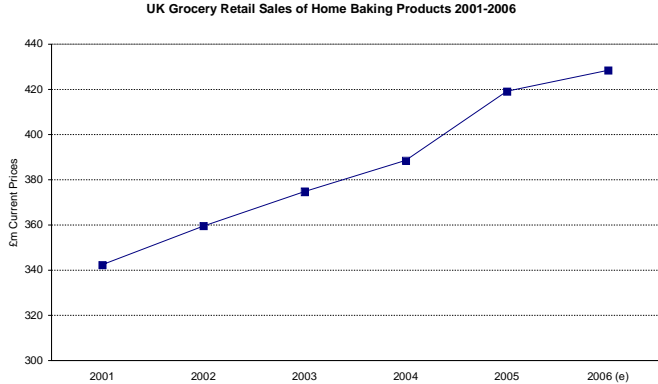
Source: LE adaptation of Mintel 'Attitudes Towards Ethical Foods', Market Intelligence, August 2006.

Table 5.3: UK Grocery Case Study – Organics

Characteristic	Evidence														
<i>Definition</i>	Organics defined strictly by law and includes production to meet high standards promoting health and environmental sustainability. Organic production avoids use of agrochemical inputs and minimisation of damage to environment and wildlife. Organic standards are continually updated.														
<i>Market Size and Growth</i>	Market size estimated at £1.295bn in 2006, accounting for 60% of all ethical food sales in the UK in that year. CAGR 11.4% (2001-2006e).														
	<table border="1"> <caption>UK Grocery Retail Sales of Organic Foods 2001-2006</caption> <thead> <tr> <th>Year</th> <th>£m Current Prices</th> </tr> </thead> <tbody> <tr> <td>2001</td> <td>750</td> </tr> <tr> <td>2002</td> <td>850</td> </tr> <tr> <td>2003</td> <td>950</td> </tr> <tr> <td>2004</td> <td>1,050</td> </tr> <tr> <td>2005</td> <td>1,180</td> </tr> <tr> <td>2006 (e)</td> <td>1,300</td> </tr> </tbody> </table>	Year	£m Current Prices	2001	750	2002	850	2003	950	2004	1,050	2005	1,180	2006 (e)	1,300
Year	£m Current Prices														
2001	750														
2002	850														
2003	950														
2004	1,050														
2005	1,180														
2006 (e)	1,300														
<i>Consumer Trends</i>	Organic market well-established and growing strongly in the UK grocery sector. Appeal to a wider base of demographics, emphasis on health and environmental issues.														
<i>% retail sales by multiples</i>	c. 75%.														
<i>New Product Development</i>	Supermarkets growing their organic ranges to meet consumer demands and competitive pressures. The Soil Association estimates that the multiples account for over three-quarters of all organic foods retail sales in the UK and, like the Fairtrade range, is an intensely competitive segment of the UK grocery market. This includes own-label organic ranges from both the multiples and the discounters.  NPD rate – high.														

Source: LE adaptation of Mintel 'Attitudes Towards Ethical Foods', Market Intelligence, August 2006.

Table 5.4: UK Grocery Case Study – Home Baking

Characteristic	Evidence														
<i>Definition</i>	This grocery product area covers staple commodity products and additives used in home baking (e.g. flours, dried fruits, cake decorations, cooking chocolate). It excludes products such as sugar, treacle and syrup, sweet spreads and jams.														
<i>Market Size and Growth</i>	Market size estimated at £428.5m in 2006, CAGR 4.6% 2001-2006.														
	 <p style="text-align: center;">UK Grocery Retail Sales of Home Baking Products 2001-2006</p> <table border="1"> <caption>UK Grocery Retail Sales of Home Baking Products 2001-2006</caption> <thead> <tr> <th>Year</th> <th>£m Current Prices</th> </tr> </thead> <tbody> <tr> <td>2001</td> <td>342</td> </tr> <tr> <td>2002</td> <td>360</td> </tr> <tr> <td>2003</td> <td>375</td> </tr> <tr> <td>2004</td> <td>390</td> </tr> <tr> <td>2005</td> <td>420</td> </tr> <tr> <td>2006 (e)</td> <td>430</td> </tr> </tbody> </table>	Year	£m Current Prices	2001	342	2002	360	2003	375	2004	390	2005	420	2006 (e)	430
Year	£m Current Prices														
2001	342														
2002	360														
2003	375														
2004	390														
2005	420														
2006 (e)	430														
<i>Consumer Trends</i>	One of the key consumer trends in this segment is the desire among parents to engage their children in home baking skills (cakes, biscuits, cookies etc.), which serves as a valuable extra-curricular activity that embodies maths (weighing out ingredients), English (reading the ingredients), organisational skills (following the recipe) and creativity (adding or adjusting the recipe). The key characteristics of consumers interesting in home baking include: married women aged 35+ years, ABC1s, families with children aged 5-9 years, wealthy achievers.														
<i>% retail sales by multiples</i>	78% (2005).														
<i>New Product Development</i>	The UK has accounted for an appreciably large share of global new product development in baking products, especially in bread mixes (over 50% of all global activity). The main product innovations have been in gluten-free products and vitamin-enriched baking mixes.  NPD rate – high.														

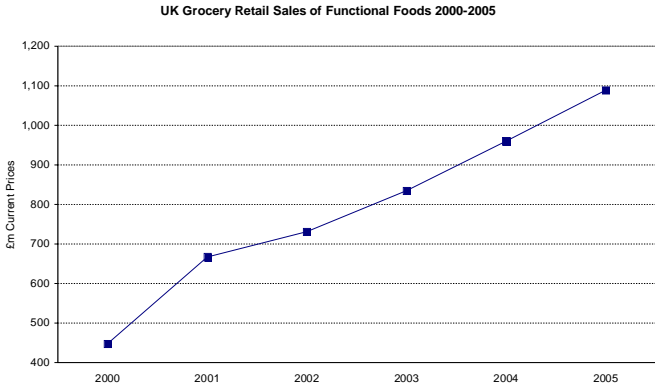
Source: LE adaptation of Mintel 'Home Baking', Market Intelligence, August 2006.

Table 5.5: UK Grocery Case Study – Whiskies

Characteristic	Evidence														
<i>Definition</i>	Spirit distilled from malted barley or other grain. The main producers are the UK (Scotland), Ireland, Canada and the US. To carry the name ‘Scotch’ on a label, whisky must be distilled and matured in Scotland.														
<i>Market Size and Growth</i>	Market size estimated at £2.6bn in 2005, CAGR -3.1% 2001-2006. However, within whiskies, premium brands have grown during 2001-2005 – malts (16.7%) and deluxe (60%).														
	<p>The graph shows UK Grocery Retail Sales of Whiskies from 2001 to 2006. The y-axis represents sales in £m Current Prices, ranging from 2,000 to 3,200. The x-axis shows years from 2001 to 2006 (e). The sales start at approximately £3,100 million in 2001, decrease to about £3,050 million in 2002, £3,000 million in 2003, £2,800 million in 2004, £2,650 million in 2005, and end at approximately £2,650 million in 2006 (e).</p> <table border="1"> <caption>UK Grocery Retail Sales of Whiskies 2001-2006</caption> <thead> <tr> <th>Year</th> <th>£m Current Prices</th> </tr> </thead> <tbody> <tr> <td>2001</td> <td>3100</td> </tr> <tr> <td>2002</td> <td>3050</td> </tr> <tr> <td>2003</td> <td>3000</td> </tr> <tr> <td>2004</td> <td>2800</td> </tr> <tr> <td>2005</td> <td>2650</td> </tr> <tr> <td>2006 (e)</td> <td>2650</td> </tr> </tbody> </table>	Year	£m Current Prices	2001	3100	2002	3050	2003	3000	2004	2800	2005	2650	2006 (e)	2650
Year	£m Current Prices														
2001	3100														
2002	3050														
2003	3000														
2004	2800														
2005	2650														
2006 (e)	2650														
<i>Consumer Trends</i>	The main consumer drivers are age and image, gift purchasing and seasonal demand and concerns over health and safety.														
<i>% retail sales by multiples</i>	44.5% (2005, volume).														
<i>New Product Development</i>	Given the aging process of whiskies, new product development includes product re-launches as well as the launch of new variants and vintages of existing whiskies, with much of the emphasis put on attracting younger consumers, which is the key challenge among suppliers today. New product launches in 2005-2006 have included whiskies from Scotland’s lesser-known distilleries and select reserve whiskies. However, most NPD in this product line involves re-packaging, designed to increase consumer reach.  NPD rate – low.														

Source: LE adaptation of Mintel ‘Whiskies’, Market Intelligence, August 2006.

Table 5.6: UK Grocery Case Study – Functional Foods

Characteristic	Evidence
<i>Definition</i>	There is no universally accepted definition for functional foods. A popular term is 'well-being' foods or foods having health benefits beyond their nutritional value. Functional foods contain functional ingredients (e.g. soya protein, friendly bacteria) and include, within dairy, pro-biotic goods and soya goods and elsewhere bottled water, fruit juices and healthy cereals.
<i>Market Size and Growth</i>	Market size of £1.1bn in 2005, CAGR 19.4% 2000-2005. Within the overall segment, functional dairy products have grown especially rapidly 2001-2005 – soya dairy-alternative products (700%), yoghurts and yoghurt drinks (184%) and spreads (45%).
	 <p style="text-align: center;">UK Grocery Retail Sales of Functional Foods 2000-2005</p>
<i>Consumer Trends</i>	The most important consumer drivers are greater health awareness, increased recognition that a healthy diet promotes health ('we are what we eat') and Government campaigning for people to take greater responsibility for their health (prevention is better than cure).
<i>% retail sales by multiples</i>	c. 86% (2005).
<i>New Product Development</i>	Dairy is by far the largest component of functional foods and has led the way in terms of innovation, which has been rapid in recent years. Between Jan 2005-Jan 2006, dairy products accounted for 43% of all new product lines within functional foods. The multiples have been active in the development of own-label functional brands. Tesco has been particularly prominent by offering own-branded pro-biotic sunflower spread, pro-biotic 'little bottles' drink and omega-3 enriched eggs. NPD rate – high.

Source: LE adaptation of Mintel 'Functional Foods', Market Intelligence, March 2006.

Table 5.7: UK Grocery Case Study – Cheese

Characteristic	Evidence														
<i>Definition</i>	The National Food Survey divides cheese into two categories. Block cheeses are free of additives and sold loose or pre-packed. They include cheddar, continental cheeses and soft cheeses. Processed cheeses are those that generally include emulsifying salts and stabilisers to prevent further ripening or deterioration. They are sold in boxes, tubs, tubes or portions.														
<i>Market Size and Growth</i>	Market size estimated at £1.9bn in 2005, CAGR 3.7% 2000-2005. Continental varieties growing strongly (25% during 2000-04) and cheese aimed at children has also growing strongly during the same period (17%). Healthy (low-fat) cheese has also grown rapidly (23% during 2002-04).														
	<table border="1"> <caption>UK Grocery Retail Sales of Cheese 2000-2005</caption> <thead> <tr> <th>Year</th> <th>£m Current Prices</th> </tr> </thead> <tbody> <tr> <td>2000</td> <td>1,580</td> </tr> <tr> <td>2001</td> <td>1,600</td> </tr> <tr> <td>2002</td> <td>1,600</td> </tr> <tr> <td>2003</td> <td>1,750</td> </tr> <tr> <td>2004</td> <td>1,830</td> </tr> <tr> <td>2005 (e)</td> <td>1,890</td> </tr> </tbody> </table>	Year	£m Current Prices	2000	1,580	2001	1,600	2002	1,600	2003	1,750	2004	1,830	2005 (e)	1,890
Year	£m Current Prices														
2000	1,580														
2001	1,600														
2002	1,600														
2003	1,750														
2004	1,830														
2005 (e)	1,890														
<i>Consumer Trends</i>	Variety of consumer drivers – staple product with a wide variety of uses, children’s snacks and lunches, sophisticated continental varieties and healthy (low-fat) options.														
<i>% retail sales by multiples</i>	92% (2004).														
<i>New Product Development</i>	Notwithstanding its traditional feel, new product development is strong in cheese. Mintel’s GNPD database recorded over 250 new product launches between June 2003 and June 2005 – Europe accounted for 62% of these. New products have included artisan cheeses, flavour combinations (e.g. peppered cheeses) and low-fat cheeses. The high NPD rate in cheese is an example of the growing sophistication of UK consumers’ eating habits.  NPD rate – high.														

Source: LE adaptation of Mintel ‘Cheese’, Market Intelligence, July 2005.

Table 5.8: UK Grocery Case Study – Children’s Snacks

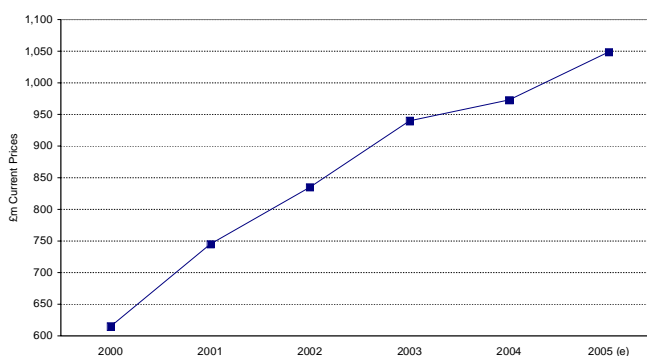
Characteristic	Evidence														
<i>Definition</i>	Savoury snacks are defined as any product made from small pieces of potato, wheat, rice, corn or other base ingredient, which have been baked extruded, cooked or processed in any way other than frying.														
<i>Market Size and Growth</i>	Market size estimated at £480m in 2005, CAGR 5.1% 2000-2005.														
	<table border="1"> <caption>UK Grocery Retail Sales of Children's Snacks 2000-2005</caption> <thead> <tr> <th>Year</th> <th>£m Current Prices</th> </tr> </thead> <tbody> <tr> <td>2000</td> <td>370</td> </tr> <tr> <td>2001</td> <td>380</td> </tr> <tr> <td>2002</td> <td>420</td> </tr> <tr> <td>2003</td> <td>445</td> </tr> <tr> <td>2004</td> <td>460</td> </tr> <tr> <td>2005 (e)</td> <td>480</td> </tr> </tbody> </table>	Year	£m Current Prices	2000	370	2001	380	2002	420	2003	445	2004	460	2005 (e)	480
Year	£m Current Prices														
2000	370														
2001	380														
2002	420														
2003	445														
2004	460														
2005 (e)	480														
<i>Consumer Trends</i>	Market drivers include the falling numbers of U-16s in the UK, Government-led campaigns to tackle childhood obesity.														
<i>% retail sales by multiples</i>	61.8% (2004).														
<i>New Product Development</i>	The main trend in NPD in 2004 and 2005 has been the reduction of fat, salt and sugar content in children’s snacks. Another development towards healthier children’s snacks has been the introduction of self-seasoning snack packs, where the consumer can regulate the saltiness of the snack. NPD has involved a combination of new product introductions and re-branding.  NPD rate – medium.														

Source: LE adaptation of Mintel ‘Children’s Snacks’, Market Intelligence, July 2005.

Table 5.9: UK Grocery Case Study – Energy and Stimulant Drinks

Characteristic	Evidence
Definition	Energy drinks are designed to provide physical energy through glucose or a range of sugars. Stimulant drinks are designed to stimulate both mind and body and aim to improve concentration, reaction time and endurance.
Market Size and Growth	Market size estimated at £1bn in 2005, CAGR 11.3% 2000-2005.

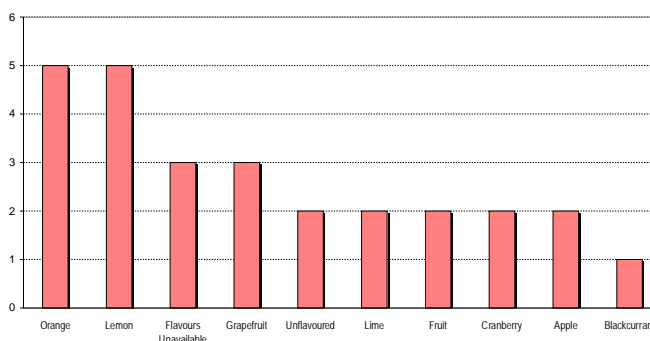
UK Grocery Retail Sales of Energy and Stimulant Drinks 2000-2005



**Consumer Trends** The usage of energy and stimulant drinks is different from other types of drinks. Among the drivers of this market are longer working hours, longer travelling times and greater pressures in sport, which have tended to drive demand for this aspect of drinks. The market for these drinks is lifestyle driven, especially by young, image-conscious adults.

**% retail sales by multiples** 44% (2005, volume).  
**New Product Development** According to Mintel's GNPD database, between June 2004 and June 2005, there were 279 new soft drink products launched, of which 30 were in the sports and energy categories. The figure below presents a breakdown of new products launched in the energy and sports drinks category by flavour June 2004-June 2005.

No. New Products Lunched in Energy and Sports Drinks Category by Flavour (June 2004-June 2005)



NPD rate – medium.

Source: LE adaptation of Mintel 'Energy and Stimulant Drinks', Market Intelligence, July 2005.

Table 5.10: UK Grocery Case Study – Noodles

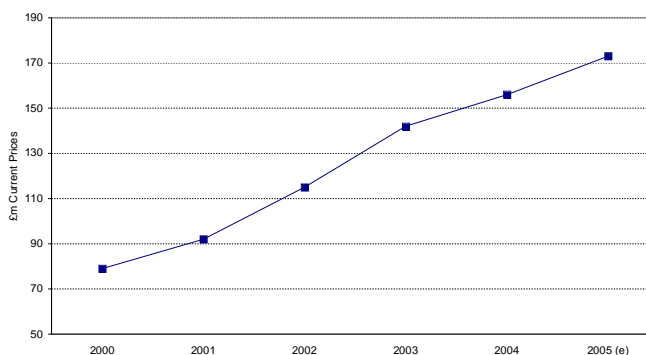
Characteristic	Evidence														
<i>Definition</i>	The Noodles category includes instant noodle snacks, instant savoury noodles, egg noodles, rice noodles, frozen stir-fry noodles, noodles-based ready meals. Fresh noodles are excluded from market size calculations, as are sales through restaurants and takeaways.														
<i>Market Size and Growth</i>	Market size estimated at £189m in 2005, CAGR 4.3% 2000-2005. The main reason for the decline after 2004 (which Mintel has projected into the future) is due to competition from other foodstuffs, other snacks and other staples, such as rice and pasta (which may have greater scope for premiumisation).														
	<table border="1"> <caption>UK Grocery Retail Sales of Noodles 2000-2005</caption> <thead> <tr> <th>Year</th> <th>£m Current Prices</th> </tr> </thead> <tbody> <tr> <td>2000</td> <td>153</td> </tr> <tr> <td>2001</td> <td>166</td> </tr> <tr> <td>2002</td> <td>179</td> </tr> <tr> <td>2003</td> <td>193</td> </tr> <tr> <td>2004</td> <td>200</td> </tr> <tr> <td>2005 (e)</td> <td>189</td> </tr> </tbody> </table>	Year	£m Current Prices	2000	153	2001	166	2002	179	2003	193	2004	200	2005 (e)	189
Year	£m Current Prices														
2000	153														
2001	166														
2002	179														
2003	193														
2004	200														
2005 (e)	189														
<i>Consumer Trends</i>	The most salient driver of consumer demand is convenience. Increasing role for healthy eating. Instant noodles are the largest sector although rice noodles are gaining in popularity, driven by growing numbers of customers who need to avoid wheat or egg products for dietary or medical reasons. Rice noodles also provide the consumer with a good alternative to pasta.														
<i>% retail sales by multiples</i>	69% (2004).														
<i>New Product Development</i>	There have been a large number of new product lines in 2005, including prepared meals with noodles, microwaveable noodles and vegetarian noodles. The growth in noodles has stimulated interest in Chinese and Far Eastern home cooking, and as a result of this the multiples have increased their range of oriental cooking ingredients.  NPD rate – medium.														

Source: LE adaptation of Mintel 'Noodles', Market Intelligence, July 2005.

Table 5.11: UK Grocery Case Study – Thai & Other Emerging Ethnic Foods

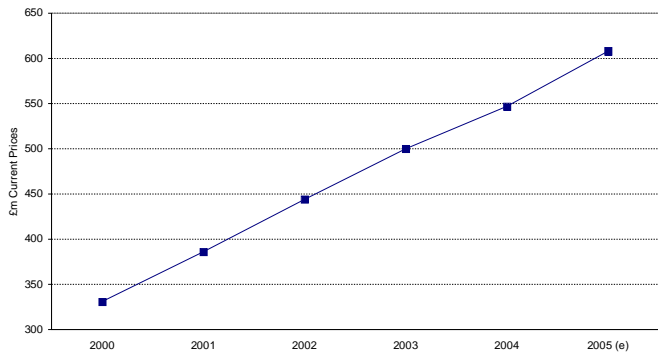
Characteristic	Evidence
<i>Definition</i>	This includes ready meals (chilled and frozen), cooking sauces, table sauces and other with the following styles – Thai, Cajun/Caribbean, Other South East Asian, Japanese and other ethnic styles.
<i>Market Size and Growth</i>	Market size estimated at £173m in 2005, CAGR 17% 2000-2005. Ready meals are the largest component (54% of category in 2004 and growth of 118% during 2000-2004). Thai is the largest style within category (42% in 2004 and growth of 100% during 2000-2004).
<i>Consumer Trends</i>	The growth in this grocery category is aided by an increasing interest in ethnic foods, the development of ethnic restaurants and the growing popularity of long-haul travel. This category also has a convenience factor, which suits present-day lifestyles in the UK.
<i>% retail sales by multiples</i>	89% (2004).
<i>New Product Development</i>	There has also been much NPD in ambient, chilled and frozen foods in this category in the past two years. NPD rate – high.

UK Grocery Retail Sales of Thai and Other Emerging Ethnic Foods 2000-2005



Source: LE adaptation of Mintel 'Thai and Other Emerging Ethnic Foods', Market Intelligence, July 2005.

Table 5.12: UK Grocery Case Study – Adult Soft Drinks

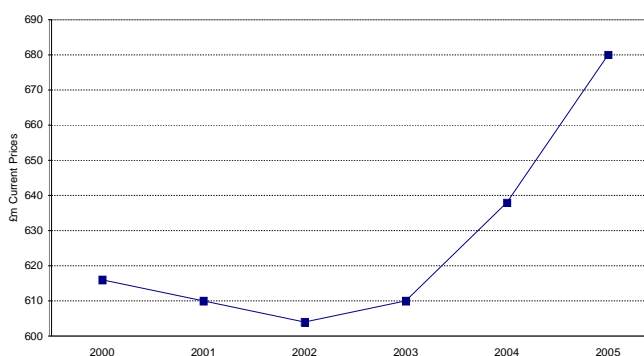
Characteristic	Evidence														
<i>Definition</i>	Soft drinks marketed specifically at adults and purchased and consumed by them. They include premium soft drinks (e.g. Schloer), fruit juice drinks (e.g. Snapple), iced tea and coffee, and flavoured waters.														
<i>Market Size and Growth</i>	Market size estimated at £709m in 2005, CAGR 12.9% 2000-2005. Growth in adult soft drinks has outstripped that in soft drinks market as a whole.														
	<p style="text-align: center;"><b>UK Grocery Retail Sales of Adult Soft Drinks 2000-2005</b></p>  <table border="1"> <caption>UK Grocery Retail Sales of Adult Soft Drinks 2000-2005</caption> <thead> <tr> <th>Year</th> <th>£m Current Prices</th> </tr> </thead> <tbody> <tr> <td>2000</td> <td>330</td> </tr> <tr> <td>2001</td> <td>380</td> </tr> <tr> <td>2002</td> <td>440</td> </tr> <tr> <td>2003</td> <td>500</td> </tr> <tr> <td>2004</td> <td>550</td> </tr> <tr> <td>2005 (e)</td> <td>610</td> </tr> </tbody> </table>	Year	£m Current Prices	2000	330	2001	380	2002	440	2003	500	2004	550	2005 (e)	610
Year	£m Current Prices														
2000	330														
2001	380														
2002	440														
2003	500														
2004	550														
2005 (e)	610														
<i>Consumer Trends</i>	The main consumer drivers are increasing interest in health and nutrition. Also important is treating oneself through a premium-style product.														
<i>% retail sales by multiples</i>	59% (2005, includes Co-ops as well as multiples).														
<i>New Product Development</i>	NPD has been strong in the market and during 2005 included new product lines in fruit-based drinks (the fastest growing area, in which blackcurrant and cranberry have been the predominant flavours) and flavoured iced tea.  NPD rate – medium.														

Source: LE adaptation of Mintel 'Adult Soft Drinks', Market Intelligence, January 2006.

Table 5.13: UK Grocery Case Study – Coffee

Characteristic	Evidence
<i>Definition</i>	The market for coffee is split into two segments – instant and roast/ground coffee. Within these segments, there are further sub-divisions (e.g. standard granulated and freeze dried instant within instant; coffee beans and ground coffee within roast/ground).
<i>Market Size and Growth</i>	Market size of £680m in 2005, CAGR 2% 2000-2005 (5.6% 2002-2005). Instant grew by 11.1% during 2003-2005 and roast/ground by 13.6% during this period. Fairtrade coffee grew by 13.8% CAGR during this period.

UK Grocery Retail Sales of Coffee 2000-2005



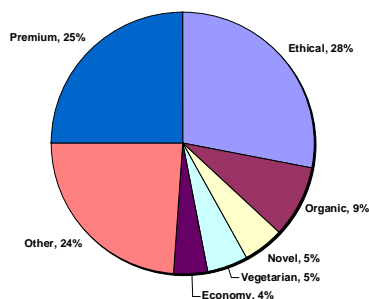
*Consumer Trends*

Coffee demand has been growing steadily, with growth higher in ground coffees compared with instants. Roast/ground coffee has proved particularly popular among the higher socio-demographic groups. The proliferation of coffee shops across the UK has also helped demand for roast/ground coffee.

*%retail sales by multiples  
New Product Development*

80% (2005, estimated). Innovation has driven growth in coffee in the UK – new premium products in instants and in roast/ground have been added in the past decade. Mintel’s GNPD database recorded over 97 new product launches Oct 2004-2005.

Summary of Product Positioning of New Launches Oct 2004-05



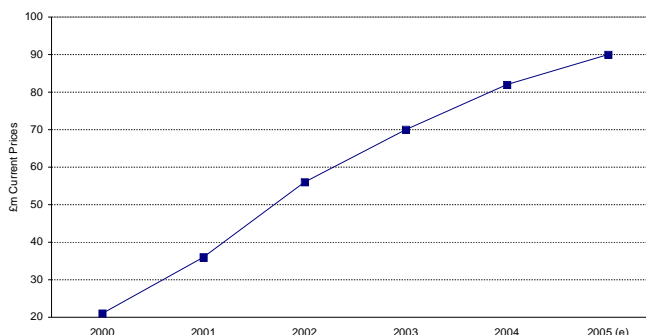
NPD rate - high

Source: LE adaptation of Mintel ‘Coffee’, Market Intelligence, January 2006.

Table 5.14: UK Grocery Case Study – Food Intolerance & Allergy Products

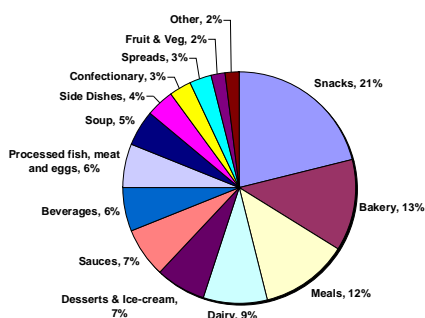
Characteristic	Evidence
<i>Definition</i>	Food products specifically targeted at consumers who suffer from food intolerances and/or food allergies. The difference between 'intolerance' and 'allergy' in this context is that some foods may cause an allergic reaction (e.g. peanut allergy, which is potentially fatal) whereas with intolerance the person may have problems digesting a particular food and this may cause health problems that may be more difficult to detect (e.g. intolerance to wheat or cow's milk).
<i>Market Size and Growth</i>	Market size estimated to be £90m in 2005, CAGR 33.8% 2000-2005.

UK Grocery Retail Sales of Gluten-Free, Dairy-Free and Other Free-From Foods 2000-2005



<i>Consumer Trends</i>	The key drivers have been desire to maintain health, medical need, TV programmes relating to dietary health and wider availability of products.
<i>% retail sales by multiples</i>	76% (2005).
<i>New Product Development</i>	New product development is rapid and branching out into a wide range of areas as the next exhibit shows.

New Wheat-/Gluten-/Dairy-Free Free-From Products in UK Dec 2004-Nov 05

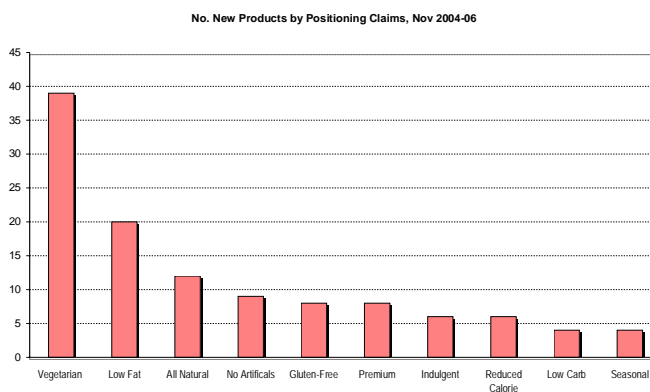
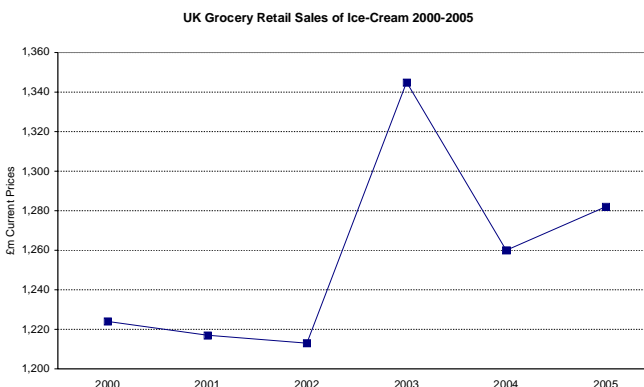


NDP rate – high.

Source: LE adaptation of Mintel 'Food Intolerance and Allergies', Market Intelligence, January 2006.

Table 5.15: UK Grocery Case Study – Ice-Cream

Characteristic	Evidence
<i>Definition</i>	The market for ice-cream in the UK includes impulse and take-home ice-cream. Impulse ice-cream is purchased for immediate consumption.
<i>Market Size and Growth</i>	Market size of £1.3bn in 2005, CAGR 0.9% 2000-2005. Downturn in sales in 2004 and 2005 put down to poor summers. Both take-home and impulse have grown slowly with the former growing at about double the rate of the latter.
<i>Consumer Trends</i>	A major consumer driver in this market is family purchases of take-home ice-cream. Weather is an important factor in sales of impulse ice-cream. Health is another factor, which has dictated a move towards increased buying of low-fat and dairy-free ice-cream.
<i>% retail sales by multiples</i>	79% (2005, take-home).
<i>New Product Development</i>	Exhibit below charts main new products Nov 2004-05 from Mintel GNPD database.



NPD rate – low.

Source: LE adaptation of Mintel 'Ice-cream', Market Intelligence, January 2006.

## Annex 3 Additional Information on Innovation/R&D in UK Food and Drink Industry

### *Introduction*

Here we present additional information on the innovation and R&D activities undertaken in UK food and beverage manufacturing. We use information from the Community Innovation Survey of 2004, the Department for Trade and Industry (DTI) Innovation Scorecard and the European e-Business Market Watch.

### *Innovation Survey*

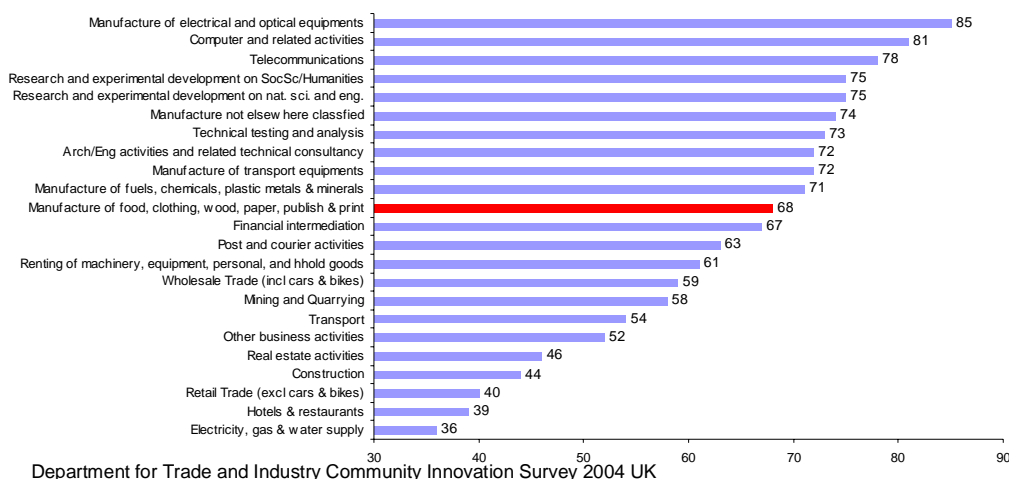
The Community Innovation Survey is the main statistical instrument of the European Union that allows the monitoring of Europe's progress in the area of innovation. The DTI's UK Innovation Survey (which is a constituent component of the CIS) allows us to analyse innovation activity by industry division between 2002 and 2004 across a range of metrics. We have considered a variety of measures of innovation including product and process innovation, the existence of wider innovation, expenditure on innovation and the existence of co-operation agreements.

This section presents evidence on innovation in relation to the manufacture of food, clothing, wood, paper, publishing and printing. It is not possible to disaggregate the information to a finer level than that which is publicly available. Although this is clearly not ideal, we do not believe that the fundamental picture emerging from the data available will change significantly were more disaggregated data available.

The figure below presents information on the proportion of firms within each industry division that indicate they are 'innovation active', which is the main indicator presented in the CIS.

Proportion of Organisations Innovation-Active by Industry 2004

Proportion of organisations that are Innovation active by industry division:  
2004 Community Innovation Survey



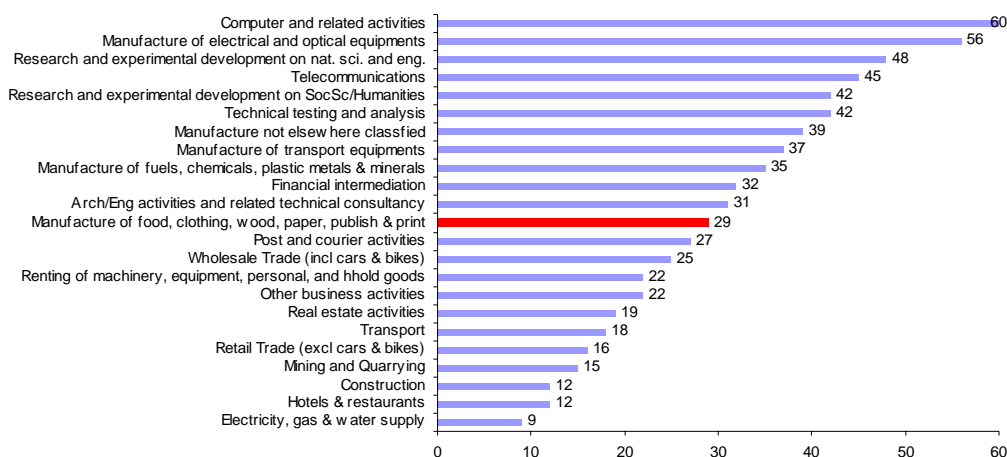
Source: LE analysis of Community Innovation Survey

The data presented illustrate that compared to all sectors of the economy where 57% of firms report that they are innovation active, approximately 68% of firms in the manufacture of food, clothing, wood, paper, publishing and printing are innovation active.

Disaggregating this overall estimate further to understand the type of innovation activity undertaken, compared to respondents in all sectors, 29% of firms in the manufacture of food, clothing, wood, paper, publishing and printing indicated that they are product innovators (compared to 25% across all sectors) while 23% of firms in the manufacture of food, clothing, wood, paper, publishing and printing sector indicated they are process innovators (compared to 16% across all sectors). This information is presented graphically in the next two figures.

## Proportion of Organisations Product Innovation-Active by Industry 2004

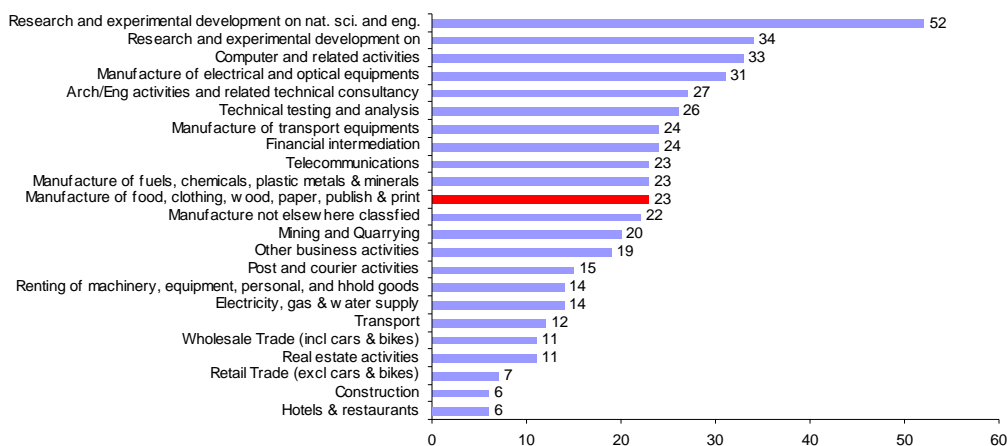
Proportion of organisations that are product Innovaters by industry division:  
2004 Community Innovation Survey



Source: LE analysis of Community Innovation Survey

## Proportion of Organisations Process Innovation-Active by Industry 2004

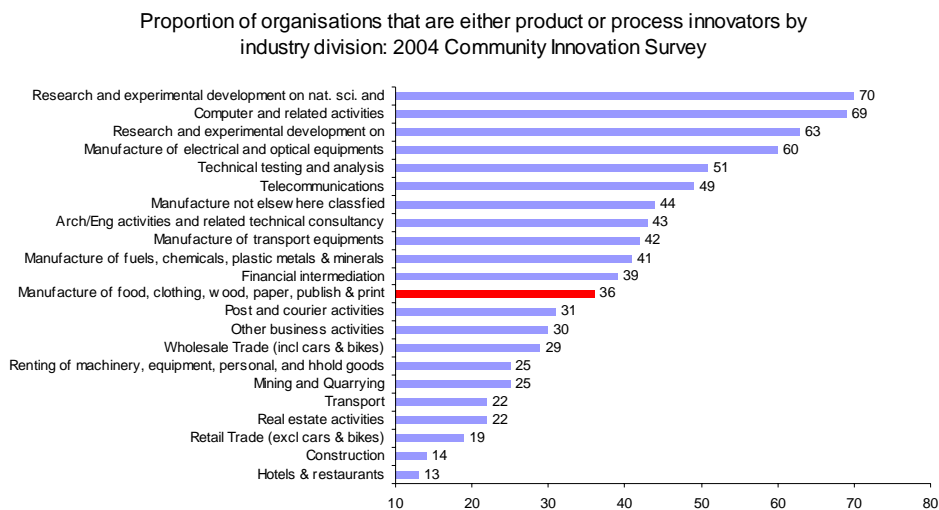
Proportion of organisations that are process Innovaters by industry division:  
2004 Community Innovation Survey



Source: LE analysis of Community Innovation Survey

In addition to the information presented above, we have also considered the proportion of firms in the manufacture of food, clothing, wood, paper, publishing and printing sector that are either product or process innovators or both. This information is presented in the next two figures.

### Proportion of Organisations Either Product or Process Innovation-Active by Industry 2004



Source: LE analysis of Community Innovation Survey

### Proportion of Organisations Both Product and Process Innovation-Active by Industry 2004



Source: LE analysis of Community Innovation Survey

The data implies that approximately 36% of firms in the sector are either process or product innovators (compared to 30% across all sectors of the economy) and 15% are both process and product innovators (compared to 11% across all sectors). Therefore, although it might be that the manufacture of food, clothing, wood, paper, publishing and printing sector is relatively less innovative than the average industry, it is actually the case that process and product innovation is higher than the average across all manufacturing industries in the UK.

Additional information is collected on the type of specific innovation activity that is undertaken by enterprises in the UK. Specifically, the respondents who indicated that they are innovation active (with expenditure specifically related to innovation) were asked further the nature of the innovation activity purchased. Respondents indicated whether they allocate resources for the following types of innovative activity:

- § Own-R&D;
- § External-R&D;
- § Acquisition of machinery, software and equipment;
- § Acquisition of external knowledge;
- § Training;
- § All forms of design;
- § Marketing expenditure.

The results are presented in the table below.

Proportion of firms engaged in Innovation Expenditure by Sector and by Type of Innovation Expenditure in UK Manufacture of Food, Clothing, Wood, Paper, Publishing and Printing 2002-2004

Proportion of firms undertaking different types of innovation expenditure by activity 2002-2004	All Sectors	Manufacture of food, clothing, wood, paper, publishing and printing
Any of the categories below	54	66
Own-R&D	26	35
External-R&D	10	11
Acquisition of machinery, software and equipment	42	55
Acquisition of external knowledge	12	13
Training	37	38
All forms of Design	15	20
Marketing expenditure	22	22

Source: LE analysis of Community Innovation Survey

The data illustrate that firms in the manufacture of food, clothing, wood, paper, publishing and printing sector are more likely to expend significant resources on all forms of innovation activity with the exception of marketing.

Enterprises were asked to rate a number of effects from innovating on a scale from 'no impact/not relevant', through 'low', 'medium', and 'high'. In the next table below we present the difference between enterprises in the manufacture of food, clothing, wood, paper, publishing and printing sector compared to all sectors of the economy (innovation active organisations only) in terms of respondents' assessments of the impact of innovation.

For instance, compared to all innovation active enterprises in the economy who stated that their innovation expenditure had a large effect on improving their flexibility of production or service provision (11%), enterprises in the manufacture of food, clothing, wood, paper, publishing and printing sector

were 7 percentage points more likely to indicate that this was the case (18%).

Impact of Innovation in UK Manufacture of Food, Clothing, Wood, Paper,  
Publishing and Printing 2002-2004

	Impact	None	Low	Med	High
Product Orientated Effects	Increased range of goods or services	-3	0	2	1
	Entered new markets or increased market share	-6	1	5	0
	Improved quality of goods or services	-3	2	1	-1
Process Orientated Effects	Improved flexibility of production or service provision	-9	1	2	7
	Increased capacity for production or service provision	-11	0	4	9
	Reduced costs per unit produced or provided	-16	1	6	9
Other Effects	Reduced environmental impacts or improved health & safety	-9	3	5	1
	Met regulatory requirements	1	2	4	-7

Source: LE analysis of Community Innovation Survey

The above table indicates that in almost every category where innovation expenditure was believed to have had an impact on either product or process improvement, innovation-active firms in the manufacture of food, clothing, wood, paper, publishing and printing sector were more likely to believe this to be the case. This was especially the case in terms of process improvement but also in almost every category/impact level of product improvement.

### European e-Business Market Watch

We have also assessed the latest 2006 information from the European e-Business Market Watch to assess the extent to which firms involved in the manufacture of food and beverages in the UK rate compared to other sectors in the economy in terms of the use of technology and e-commerce on a routine basis. The data comes from the European e-Business Market Watch published by the European e-Business Observatory.

In the table below, we present information by sector on the use of technology/e-commerce in different areas of the business environment – such as the ability to send or receive invoices as e-invoices, the percentage of firms placing orders online or allowing customers to book services or place orders online. The survey also provides some information on the extent to which e-business constitutes a significant part of the way that the enterprises operate in 2006.

#### Innovation in UK Food Manufacturing Relative to Other UK Manufacturing Sectors

UK Food Manufacturing vis-a-vis other UK sectors							
Sector	Percentage of firms using RFID technology	Average percentage of invoices which firms send as e-invoices	Average percentage of invoices which firms receive as e-invoices	Percentage of firms placing orders for goods or services online	Percentage of firms using a Customer Relationship Management system	Percentage of firms that allow customers to order goods / book services / online from the website or through other computer-mediated networks	Percentage of firms saying that e-business constitutes a significant part of the way they operate today
Construction	3	15	16	58	9	20	18
Electronics	0	39	22	63	18	20	16
Food and Beverages	4	25	13	68	11	48	20
Footwear	0	19	3	62	4	39	46
ICT	4	18	14	75	29	18	24
Paper	1	17	12	69	23	21	3
Pharma*				48	55	38	3
Telecoms	6	41	23	72	60	47	27
Textile*				64	19	21	20
Tourism	0	12	8	56	26	48	22

\* Data relates to 2005.  
Source: Indecon/LE analysis of The European e-Business Market Watch data.

Source: LE analysis of European E-Business Market Watch.

The results indicate that within the UK, food and beverage manufacturing industries, firms send approximately 25% of all invoices as e-invoices and receive approximately 13% of invoices as e-invoices, both figures being in line

with the average across all sectors of the economy. More than two-thirds of food and beverage manufacturing firms indicate that they place orders for goods and services online (5 percentage points more than the average across all sectors), while just under half of all food and beverage manufacturers indicate that they facilitate customers booking services and placing orders online (compared to less than one-third of all organisations across the economy).

Exactly in line with the national average, approximately 20% of organisations in the food and beverage manufacturing sectors indicate that e-business constitutes a significant part of the way that the enterprises operate in 2006.

Finally we provide information to compare the use and impact of ICT-related technologies and e-commerce in the food and beverage manufacturing sector with the food and beverage manufacturing sectors across Europe. From the table below, it can be seen that enterprises in the food and beverage manufacturing sector in the UK are ranked sixth out of 20 countries contained in the analysis in terms of the proportion of invoices sent as e-invoices; second (behind Denmark) in terms of the proportion of companies placing orders for goods and services online; first of any country considered in terms of allowing customers to place orders or book services online; and seventh highest in terms of the proportion of business indicating that e-business constitutes a significant part of the way in which the organisation operates in 2006.

## Innovation in UK Food Manufacturing Relative to Food Manufacturing in Other Countries

### UK Food Manufacturing vis-a-vis Food Manufacturing in other countries

Country	Percentage of firms using RFID technology	Average percentage of invoices which firms send as e-invoices	Average percentage of invoices which firms receive as e-invoices	Percentage of firms placing orders for goods or services online	Percentage of firms using a Customer Relationship Management system	Percentage of firms that allow customers to order goods / book services online from the website or through other computer-mediated networks	Percentage of firms saying that e-business constitutes a significant part of the way they operate today
Austria	5	15	7	61	20	28	28
Belgium	14	8	2	57	20	22	9
Bulgaria	1	22	16	38	7	23	14
Cyprus	0	6	8	33	5	3	25
Czech Republi	7	9	12	59	15	31	18
Germany	0	43	9	59	21	38	19
Denmark	4	43	46	83	23	31	15
Estonia	9	8	26	54	15	23	27
Spain	7	20	4	33	14	17	7
Finland	3	33	22	65	20	42	14
France	6	24	13	52	14	25	13
Hungary	3	13	19	43	12	18	9
Ireland	12	34	19	52	30	32	21
Italy	4	10	8	43	7	20	20
Netherlands	0	24	3	53	19	25	9
Poland	1	11	15	57	3	25	3
Portugal	2	6	3	30	6	12	7
Romania	2	12	20	44	14	26	38
Slovenia	0	28	7	52	1	25	21
UK	4	25	13	68	11	48	20

Source: Indecon/LE analysis of The European e-Business Market Watch data.

Source: LE analysis of European E-Business Market Watch.