7 The markets

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Introduction

7.1. In this chapter we consider the main characteristics of the markets for each of the four reference white goods. We begin with washing machines. The nature of the products is dealt with in paragraphs 7.6 to 7.9, and some of the main features of consumer demand in paragraphs 7.10 to 7.12. Evidence and views on consumer search behaviour and brand loyalty are considered in paragraphs 7.13 to 7.15 and 7.16 to 7.18 respectively. Other market characteristics and the question of market definition are addressed in paragraphs 7.19 to 7.33.

7.2. The total market sales (by quantity and value) of washing machines, suppliers' market shares and the degree of supplier concentration are discussed in paragraphs 7.34 to 7.41. We then review, in paragraphs 7.42 to 7.51, some aspects of market dynamics, including the importance of innovation (in products, supply and manufacture) in the UK washing machine market, entry conditions faced by new suppliers, and also the evidence on price trends.

7.3. A comparable market analysis is subsequently provided for tumble driers (in paragraphs 7.52 to 7.76), dishwashers (in paragraphs 7.77 to 7.100), and CFS products (in paragraphs 7.101 to 7.125), in which we describe the distinctive features of these markets. In practice, however, the markets for the four reference white goods share much in common. Several of the major suppliers and brands, for example, operate in all four markets. The products themselves are all for domestic use, usually in the kitchen; they may often be bought as combined purchases; they are all `big ticket' items, generally costing over £100 each and often a good deal more; and they are frequently of the same standard size (though CFS products are often of different sizes). Moreover, the willingness (or otherwise) of consumers to shop around, the degree of brand loyalty, and the extent to which product markets may be considered to be distinct economic markets exhibit some marked similarities. We therefore deal with some of these matters in detail for washing machines but do not necessarily repeat our evaluation in full for the other reference goods in the subsequent sections of this chapter. In each case, however, we describe any features which are distinct for a particular reference good.

7.4. In the second part of this chapter we consider retailers. Most retailers of the reference goods usually sell more than one, and often all four, of these goods. We therefore deal with the retailing of the four reference goods together in a single section, in paragraphs 7.126 to 7.139. Our analysis considers the structure of retailing in the UK, and the sales and market shares of retailers, that is the two national retailers (Dixons and Comet), other multiple retailers and department stores, mail order companies and small retailers.

7.5. Other relevant material is included in subsequent chapters. In particular, details of the suppliers and retailers (and other dealers) of reference goods are set out in Chapters 8 and 9 respectively. Pricing policies and practices are discussed in Chapter 10, our analyses of pricing are set out in Chapter 11 and suppliers' distribution policies and practices are discussed in Chapter 12. The views of suppliers, retailers and other parties are included in Chapters 13, 14 and 15 respectively.

Consumer demand and suppliers

Washing machines

The products

7.6. The terms of reference for the washing machine inquiry exclude washing machine products intended for non-domestic use (for example, the types of equipment used in launderettes and hospitals etc), but they nonetheless include a wide range of products offering different specifications, features and build quality. Basic washing machines (autowashers) are well-established consumer durable products designed to wash clothes and other household fabrics (bedding, towels etc) by means of water immersion and tumbling in a rotating (stainless steel) drum. Excess water is then removed by spinning the drum (typically at 800 or 1,000 rpm, and less commonly at or above 1,200 rpm), though washing machines are not designed to fully dry, and not capable of fully drying, the wash-load. Machines with higher spin-speeds incorporate a more powerful electric motor, and therefore usually cost rather more than those with lower speeds. Virtually all models sold in the UK market are front-loading and fully automatic: the wash programme selected determines the water temperature, length of washing process and rinsing cycle. Most models offer a series of alternative programmes which are suitable for different types of wash-load. Other features, such as higher load capacities, lower water and energy usage, and sophisticated `fuzzy logic' programming[1] (see Glossary), usually add to the cost of the machine.

[1] An electronic monitoring system that automatically adjusts the operations of a washing machine or tumble drier to meet different load requirements.

7.7. Most models (we estimate around 95 per cent, by quantity) purchased in the UK market are *(a)* of a standard size[1] (which is the same for dishwashers and tumble driers); and *(b)* free-standing for use either as a stand-alone unit with its own work-top, or for locating beneath an existing kitchen work-top. Others are so-called built-in products (ie with a decor front-panel) for use in fitted kitchens.

7.8. Washer-drier models are also covered by our terms of reference. These incorporate within the same unit both a washing machine with all the usual features, and also a tumble drier facility, which allows the wash-load to be dried by means of heated air blown into the rotating drum. Most employ a condenser to contain and liquefy the steam generated, which obviates the need for external venting. Again, most washer-driers are standard-sized, free-standing units, though built-in models are also available. Most of the main suppliers and brands offer models of basic washing machines (autowashers) and of washer-driers. The use of separate tumble drier machines is common in the UK, however (and more so than in other EU countries, we were told), with the degree of ownership being around 50 per cent of all households (see paragraph 7.54). Reflecting this, the majority of sales of washing machines in the UK market (about 85 per cent by volume) are of autowashers rather than washer-driers. In the sample period used for our pricing analysis (February/March 1995: see Chapter 11), only four of the 30 best-selling models were washer-driers.

7.9. As explained later, the retail price of most popular (big-selling) washing machines is in the range £250 to £550, though some up-market models can cost significantly more (around £1,000 in a few cases). Within that price range, washer-driers typically cost £100 or so more than a basic washing machine (autowasher) of a comparable specification.

Consumer demand

7.10. As a rule, the average household owns only a single washing machine (which, as explained in paragraph 7.8, may often be used in conjunction with a tumble drier). Around 90 per cent of households[2] owned a washing machine in the financial year 1995/96, up from around 80 per cent in 1985 (during this period the number of separate households in the UK also increased by about 10 per cent). Washing machines appear, therefore, to be regarded as essential items, in much the same way as are telephones, refrigerators and televisions. Usage rates inevitably vary depending on domestic circumstances (for example, as between large and small families), and the frequency of use will largely determine the operational life of the machine. We were told that the length of life is generally about seven to ten years.

7.11. Given the high level of ownership (with about 20 million units in use), most current purchases, around 80 to 85 per cent based on a market research report commissioned by GDA (see paragraph 7.13), are likely to reflect the need to replace an existing machine which has reached the end of its useful life, though many are also associated with consumers either moving house or setting up a new home. Where consumers are replacing an existing machine which has gone wrong (and judged to be beyond repair), they may regard replacement as a matter of urgency (ie a distress purchase), given the frequent demand for the services of a washing machine in many households, though launderettes may provide a short-term alternative.

7.12. When buying a new washing machine (whether or not as a distress purchase), many consumers will no doubt first consider what type of machine they want (either an autowasher or a washer-drier), what features they require and broadly how much they wish to spend, because the total outlay (an average of about £360) involved is quite large for most households. For replacement purchases, some consumers may simply opt for the same type and brand of machine that they own already, though there is a wide range of different brands and models from which to choose, available from a variety of alternative retailers (Dixons, Comet, the RECs, and department stores such as JLP are among the leading retailers-see Table 7.7). In the process of searching for a suitable machine (and the best buy), consumers are likely to be interested in the functional

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[1]There do not appear to be any British Standards which govern the size of the reference white goods. It is nonetheless the accepted convention and practice within the UK for `standard size' appliances to fit inside an aperture of 60 cm × 60 cm × 85 cm (height), which is equivalent to a standard kitchen cabinet space. Most standard-size washing machines, dishwashers and tumble driers are of this size, but `slimline' versions (often 45cm or 50cm wide) of some models are also available. Many refrigerators are also the same standard size (60 cm × 60 cm × 85 cm), but there is far more variation, particularly in the height of the appliance.

[2]Based on the General Household Survey (ONS), as for tumble driers (paragraph 7.54) and dishwashers (paragraph 7.78); for CFS equipment (paragraph 7.103) the source used was the Family Expenditure Survey (ONS), because it gives figures for refrigerators rather than other CFS products.

efficiency of different models on offer (ie which washes best?), their reliability in use (ie which will go wrong least often?), and product durability (ie how long will it last before the need for replacement?). As with dishwashers, tumble driers and CFS products (and indeed, most electrical products), these quality attributes are not necessarily readily discernible.[1] This increases the difficulties of making comparisons of value for money between different models and brands, particularly perhaps with regard to less well-known brands (model proliferation and range differentiation are discussed more fully in paragraphs 9.87 to 9.90.

Search behaviour

7.13. Some suppliers, such as GDA (and also some retailers), told us that consumers frequently shop around when seeking to buy a new washing machine (and also white goods generally), visiting perhaps three or four different retail outlets before making a purchase, ie they actively search the market to obtain the product they want, and at the best price. GDA provided details of a market research report which it had commissioned in 1993 from Quadrant. This report (which concerned washing machines, dishwashers and CFS products, and was based on a sample of 700 consumers) indicated that, in 1993, about 55 per cent of purchasers of these goods had visited more than one retail outlet before buying, though this was a lower proportion than in previous years. More generally, we were told that consumer search costs are relatively low in this market, because much information is readily available, including information on relative prices, and that consumers had an incentive to shop around before making a purchase.

7.14. Whirlpool, on the other hand, told us that consumers were not willing to shop around for white goods. In addition, one of the major retailers, Comet, drew our attention to a survey carried out on its behalf. A sample of about 1,500 buyers of `audio visual and major appliances' at selected Comet, Currys and REC stores were interviewed between April and June 1995. A little over 30 per cent of those interviewed said that they did not shop around for these appliances; between 21 and 35 per cent said that they bought at their normal store having visited one or two others; and a little over 20 per cent said that they visited four or more stores.

7.15. Consumers may visit different shops in order to browse, ie they may be motivated in part by the wish to explore what products (and brands) are available at a given time, and to try to decide what equipment and features they wish to purchase. Consumer magazines also usually provide helpful details on the different models available, though because of model changes such information may not be wholly up to date. Advertisements in both the national and local press usually feature current prices and other promotions (for example, interest-free credit and free gifts etc) offered by retailers, and some information is now available on teletext (see paragraph 9.123). GDA's survey indicated that only 28 per cent of consumers sought advice from sales assistants or managers.

Brand loyalty

7.16. Brand names appear to be a particularly important influence on consumers' choices, because, we were told, they act as a ready signal of quality and reliability, and many of the major brands of washing machines (Hotpoint, Zanussi, Bosch, Indesit, Hoover) are both well-established and familiar to most consumers. Indeed, as indicated earlier, most of the major brands also supply the other reference white goods. Whirlpool, and also MDA with respect to its Ariston brand, stated that brand awareness and brand loyalty were important features of the market for washing machines and also white goods in general; and both these suppliers told us that they had experienced difficulty in overcoming consumer (and also retailer) loyalty to established names when launching their brands in the UK market.

7.17. GDA's survey of the market for washing machines, dishwashers and CFS products (see paragraph 7.13) asked consumers what were the most important matters that influenced their choice of brand. Some 41 per cent of respondents named the size, features or appearance of the appliance, 32 per cent mentioned low

[1] We understand that there are no quality grading schemes which apply to washing machines (though we were told that an EC scheme for classifying washing performance was being introduced) or the other reference white goods other than the EC energy efficiency labelling scheme. This was introduced in the UK for CFS products in January 1995 and subsequently extended to washing machines and tumble driers during 1996. We note the finding of the CA that two-thirds of the models of freezer tested in its *Which?* report of February 1997 had worse ratings for energy efficiency than those shown on their energy efficiency labels.

price or value for money, 30 per cent referred to personal experience (with a further 8 per cent naming recommendations by friends), and 10 per cent mentioned brand reputation. However, findings elsewhere in the survey indicated that this response did not fully capture the importance of brand loyalty. Some 31 per cent of respondents said that they decided to buy a particular brand without considering other brands, 88 per cent said that they were satisfied with the brand choice they had made, and 91 per cent said that they would buy that brand again. Moreover, 71 per cent of respondents said that promotions did not influence their choice of brand.

7.18. Retailers' own-label brands (see paragraphs 9.80 to 9.86), on the other hand, are far less well-established in the market for washing machines. The Electra brand, owned by the RECs, is the main own-label brand, though its market share by value in 1995 was only around 5 per cent (see Table 7.2).

Market characteristics and definition

7.19. In evaluating the washing machine market and any implications in relation to the two matters referred to us (the use of RRPs and withholding supply), we considered whether there were alternative products which were effective economic substitutes for new washing machines, and which might therefore influence suppliers' behaviour in the UK market; and also whether washing machines as described above represented a single economic market, or whether they were segmented into distinct sub-markets.

7.20. Looking first at the wider market question, hand-washing is obviously a conceivable alternative to buying a new domestic washing machine (autowasher), but is generally regarded as very inconvenient. For many households hand-washing is likely to be simply unacceptable. Similarly, there are no substitute machines as such which perform the same functions as a domestic washing machine, but there are at least some plausible alternatives:

(a) launderettes and laundries, and also dry cleaners to some extent, offer a service which for some consumers may provide a reasonable alternative to owning a washing machine; and

(b) as with the other reference goods:

   (i) washing machines can be rented rather than purchased; and

   (ii) consumers could purchase a used machine (either second-hand or refurbished) rather than a new one.

7.21. On the first of these alternatives, the extremely high rate of household ownership of washing machines (see paragraph 7.10) of itself suggests that launderettes, laundries and dry cleaners are nowadays widely regarded by UK consumers as far less convenient than owning their own washing machine, and they are also likely to involve higher costs, especially for households with large families. To that extent, they are not close economic substitutes.

7.22. Renting a machine offers broadly the same level of convenience as ownership. However, whilst the rental sector for washing machines has grown somewhat in recent years, it remains extremely small in the UK compared with purchase and ownership. Renting may also involve higher costs over the life of the machine; and there is a more limited range of models from which to choose. For the great majority of consumers, therefore, renting may not be seen as offering a realistic alternative to the purchase of a new washing machine. The same considerations apply equally well to the other three reference white goods (tumble driers, dishwashers and CFS products), where the rental sector is even smaller. We do not therefore consider rental further.

7.23. As with other consumer durables such as cars and televisions, purchasing a used machine (either second-hand or refurbished) is a practicable and generally much cheaper alternative to buying a new machine. But as with renting, most consumers are likely to consider a used machine as a second-best alternative, especially given the more limited choice of brands and models, and the probably greater uncertainty about reliability. We do not therefore regard used equipment as offering direct competition to the purchase of new washing machines. The same arguments apply equally well to the other three reference white goods (tumble driers, dishwashers and CFS products), and we do not therefore consider used equipment further.

7.24. For these reasons, we do not think that there are other products, or services, which are close economic substitutes for new washing machines and which might therefore constrain suppliers' pricing behaviour.

7.25. With respect to washer-driers (which account for about 15 per cent of the market-see paragraph 7.8), tumble driers are clearly a related product. It seems unlikely that consumers who already own a washing machine and are simply replacing an existing tumble drier will switch to a washer-drier. But in other circumstances, when replacing a washer-drier, for example, or if starting from scratch, consumers have the choice of buying either a washer-drier, or a washing machine (autowasher) combined with a separate tumble drier. In principle, such consumers are likely to examine the relative prices of the different options. In particular, it might be expected that, quality and brand strength apart, the prices of washer-driers could not exceed the combined costs of a washing machine and tumble drier bought separately, without significant adverse effects on sales of washer-driers. On the other hand, if the extra payable for the drying facility incorporated in a washer-drier compared favourably with the prices of tumble driers, this would presumably reduce the sales of tumble driers.

7.26. However, comparing the different options is likely to be far from easy because the quality attributes of different models and brands are not always readily discernible, as indicated above (see paragraph 7.12). In this regard, the following points are worth noting:

(a) Washer-driers appear at first sight to be the less expensive option (ie compared with buying a washing machine together with a separate tumble drier), especially in view of the fact that they all appear to incorporate a condenser, whereas most tumble driers sold are vented models which are cheaper than those with a condenser.

(b) On the other hand, a separate tumble drier, we understand, offers significantly greater load capacity, as well as better drying performance and greater operational flexibility. In addition, for many consumers, non-price considerations may be as important as relative prices. Where kitchen space is limited, for example, but where there is a perceived need for a drying machine, a washer-drier is likely to be the more practical option.

It was also suggested to us that washer-driers are perceived as being mechanically more sophisticated than washing machines or tumble driers and therefore as less reliable, giving rise to potentially higher repair costs over time. No evidence was put to us that the two markets should be regarded as one. We also note that sales of washer-drier models appear to have declined somewhat as a proportion of sales of all washing machines, whilst household ownership of tumble driers has increased significantly in recent years (see paragraph 7.54). Overall, it appears that the market for tumble driers should be treated as separate from that of washer-driers.

7.27. Turning to the issue of possible market segmentation, we have already noted that, for many consumers, free-standing and built-in products will not in general be effective substitutes for each other. However, consumers who are refurbishing or redesigning an existing kitchen, or setting up a new one, clearly have a choice between buying free-standing and built-in equipment, ie there is likely to be a reasonable degree of demand-side substitution in these circumstances. In addition, producers of free-standing models can be expected to be able to switch production without difficulty to that of built-in equipment, and vice versa (indeed, many manufacturers make both at present), and supply-side substitution is therefore likely to be high. Overall, we do not regard these as distinct economic sub-markets. The same considerations apply equally to the other three reference white goods (tumble driers, dishwashers and CFS equipment), and we do not therefore examine further the relationship between free-standing and built-in equipment.

7.28. Additionally, however, some models and brands of new washing machines cost significantly more than others ie there are some significant differences in prices between alternative models (by a factor of five or more). We were told by some suppliers that the market could be seen as being structured in terms of low-priced, `economy' products (often supplied as secondary brand names, such as Servis, and sometimes retailers' own-label brands); mid-market models (ie where prices are close to the average of £360 and supplied under the major brands, such as Hotpoint and Zanussi); and up-market products (for example, brands such as Miele and De Dietrich).

7.29. It is often the case, however, that significant price differentials exist in what are generally regarded as unified markets, reflecting differences in manufacturing cost and product quality as perceived by consumers, and we do not consider in this case the existence of price differentials by themselves to be a sufficient condition for there being distinct markets. We note also that the price differentials between so-called low-priced and mid-market models are both unclear and also rather modest where they exist; no evidence was put to us suggesting that models in these ranges were purchased by two different categories of consumer. Indeed, suppliers told us that during the recent economic recession consumers had tended to move `down market', buying relatively more lower priced than mid-market models of washing machine. There is likely, therefore, to be a reasonable degree of consumer substitution between the two which limits the scope for independent pricing within segments.

7.30. Additionally, since most of the major suppliers operate in at least two adjacent segments, there is a potential for supply-side substitution which further limits the scope for independent pricing action. The introduction of GDA's First Edition range appears to be an example of a largely mid-market supplier entering the lower priced segment. As regards up-market models and brands, similar possibilities for intersegment substitution may exist, though the sales of these models only account for a small proportion of the overall market (probably less than 3 per cent). Furthermore, as explained more fully later, the two matters which are the subject of our inquiries do not appear to be restricted to any particular segment of the market.

7.31. All in all, whilst for business and marketing purposes it may be convenient to consider segmentation in this market, we do not believe that the segments represent distinct economic markets. Moreover, they do not seem to be of material significance to evaluating the two matters which we have investigated.

7.32. The same considerations about the implications of a wide range of prices apply equally to the other three reference goods (tumble driers, dishwashers and CFS products), and we therefore do not examine further the relationships between low-, medium- and high-priced equipment.

7.33. For the reasons set out above, we regard the washing machine market as being unified and distinct for the purposes of our inquiry. Neither suppliers nor retailers suggested that we should do otherwise. We consider that overall demand for these products is likely to be influenced mainly by macro-economic factors, such as consumers' disposable incomes, the level of interest rates, consumer confidence, the age distribution of the existing stock of washing machines in use and the state of the housing market, as evidenced by the slump in demand during the recent recession (see paragraph 7.34). Aggregate demand is likely to be less sensitive, however, to price factors.

Sales and suppliers' market shares

7.34. Table 7.1 shows the quantity of sales of washing machines (and the other reference white goods) in the period 1985 to 1995, expressed as an index, with 1985 taken as the base year (ie with an index value of 100). As shown in the table, sales of washing machines have not shown substantial trend growth over this period, but they have been volatile and pro-cyclical. In the late 1980s and during the height of the housing boom, sales increased, but demand subsequently fell back by about a quarter from its peak (1988) during the recent economic recession. As the economy recovered, demand for washing machines revived and sales volumes are now back at the 1989 level.

TABLE 7.1 **UK sales of reference white goods (by quantity), 1985 to 1995**

1985 = 100

Year	*Washing machines*	*Tumble driers*	*Dishwashers*	*CFS products*
1985	100.0	100.0	100.0	100.0
1986	102.8	105.6	135.8	105.0
1987	107.8	120.3	145.8	108.3
1988	111.8	112.2	189.1	112.3
1989	103.2	97.7	201.5	115.1
1990	92.5	84.2	174.1	109.9
1991	86.4	80.8	158.7	104.9
1992	85.9	85.6	162.7	105.1
1993	95.9	90.3	205.0	112.3
1994	103.0	96.1	220.9	122.9
1995	103.1	97.3	203.5	127.4

Source: GfK and MMC.

7.35. As shown in Table 7.2, total sales of washing machines in the UK in 1995 were about 1.75 million units, at a retail value (including VAT) of £626 million (giving an average unit value across all the different types and models of about £360). The growth in demand over the years 1993 to 1995 was about 8 per cent in terms of quantity, but only 2.6 per cent by value. The modest reduction in the average unit value which has occurred appears largely to reflect a change in `product mix' (with consumers buying proportionately fewer washer-driers and more lower priced models of autowashers), rather than reductions in the prices of individual or comparable models.

7.36. Also shown in Table 7.2 are the market shares (by volume and value of retail sales) of the various brands and suppliers of washing machines, and also those of retailers' own-label products. We have chosen to measure suppliers' sales and market shares at the retail rather than supplier level largely because the smaller brands and suppliers were difficult to identify, and obtaining comprehensive sales and market share data would have been impractical. The data provided by GfK, on the other hand, appeared fully comprehensive, they were readily available and they were seen to be widely used and well-regarded by suppliers of the reference goods. We have taken the view, therefore, that the GfK data provided an appropriate measure of market shares, a view which was not contested by parties to our inquiries. The statistics do not separately identify sales to retailers by wholesalers, which act as intermediate suppliers, but such sales are limited and appear to account for less than 5 per cent of the total. The wholesale sector is considered further in Chapter 8 (paragraphs 8.47 to 8.50), which also gives a fuller description of the main suppliers and brands of washing machines.

7.37. As shown in Table 7.2, the ten largest suppliers and retailers' own-label brands (comprising about 20 separate brands) together accounted for 99 per cent of sales in 1995, the remainder being made by a further nine smaller brands. For some suppliers and brands, for example GDA (Creda) and Candy (Hoover), the market share figures measured by value do not differ greatly from those by quantity, but for others they do. Miele, for example, is generally regarded as an up-market brand and its products are considerably more expensive than the average, with the effect that its share by value is more than twice that by quantity. For Indesit (MDA) and Servis, on the other hand, market shares by value are slightly lower than when measured by quantity, because many of their products are sold at prices which are below the market average. Given the wide range of prices for washing machine products, we consider that the `by value' measure of market shares is the more appropriate for the purposes of our inquiry. We adopt the same approach in respect of the other reference goods.

7.38. Partly as a result of past mergers, each of the top six suppliers markets its products under more than one brand. In 1995, the largest-selling brands with shares by value of more than 5 per cent were Hotpoint (GDA) with 29.3 per cent, Zanussi (Emaco) with 15.2 per cent, Indesit (MDA) (10.3 per cent) and Hoover (Candy) (10.1 per cent). In addition, the Electra own-label brand (see paragraph 7.40) had a market share of 5.0 per cent.

TABLE 7.2 **Washing machines: UK market shares* of suppliers' brands and retailers' own-label brands, by quantity and value, in 1993, 1994 and 1995**

per cent

Supplier/brand#	*1993* Quantity	*1993* Value	*1994* Quantity	*1994* Value	*1995* Quantity	*1995* Value
GDA						
Hotpoint	29.1	30.0	27.1	28.4	27.6	29.3
Creda	3.1	2.9	2.8	2.5	2.9	2.6
Total	32.2	32.9	29.9	30.9	30.5	31.8
Emaco						
Zanussi	12.2	14.3	13.2	15.7	12.5	15.2
AEG ~	2.0	2.7	2.4	3.1	1.9	2.8
Tricity Bendix	3.0	2.5	2.7	2.3	2.9	2.4
Electrolux	0.7	0.7	0.5	0.5	0.3	0.3
Total	17.9	20.2	18.7	21.6	17.6	20.7
*Merloni*Ð						
Indesit	12.9	9.9	14.5	11.4	12.8	10.3
Philcoð	2.0	1.8	2.2	1.9	2.5	2.1
Ariston	2.4	2.2	2.4	2.3	2.0	1.8
Total	17.4	14.0	19.1	15.5	17.3	14.2
*Candy*ß						
Hoover**	12.2	13.7	11.2	12.0	9.8	10.1
CDA	1.9	1.6	2.5	2.1	4.1	3.4
Total	14.0	15.4	13.7	14.1	13.9	13.5
Electra##	5.3	4.7	5.2	4.4	6.1	5.0
Whirlpool						
Whirlpool	3.7	3.6	2.6	2.6	3.6	3.3
Ignis	0.0	0.0	0.4	0.3	0.8	0.7
Bauknecht	0.1	0.2	0.1	0.1	0.1	0.1
Total	3.8	3.7	3.0	2.9	4.4	4.0
Bosch-Siemens ~ ~						
Bosch	1.5	2.0	2.1	2.9	2.4	3.2
Siemens	0.1	0.1	0.2	0.3	0.4	0.5
Neff	0.0	0.1	0.1	0.2	0.1	0.2
Total	1.6	2.2	2.4	3.3	2.9	3.9
Servis	5.3	3.9	4.3	3.3	4.5	3.5
Miele	0.4	1.0	0.5	1.2	0.6	1.4
*Comet*ÐÐ						
Blomberg	0.3	0.2	0.8	0.7	0.6	0.5
Proline	0.0	0.0	0.3	0.2	0.4	0.3
Total	0.3	0.2	1.1	0.8	1.1	0.8
Othersðð	1.8	1.8	2.1	1.8	1.2	1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total salesßß ('000/£m)	1,630.8	610.7	1,752.1	646.0	1754.1	626.7
Average unit value (£)		375		369		357

Source: GfK, suppliers and MMC.

*Individual brand shares are subject to rounding effects and may not sum exactly to the total figures given.
#Suppliers and brands are ranked by market share by value in 1995.
~ Acquired in 1994-see paragraph 8.14
ÐIncluding MDA-see paragraph 8.24.
ðSee paragraph 8.26.
ßIncluding CDA-see paragraphs 8.18 to 8.23.
**Acquired in 1995-see paragraph 8.19.
##Electra is an own-label brand owned by the RECs-see paragraph 7.40.
~ ~ Including BSDA-see paragraphs 8.28 and 8.29.
ÐÐBlomberg and Proline (made by Groupe Brandt-see paragraph 8.41) are Comet's own-label brands.
ððOther brands with market shares by value in 1995 of 0.01 per cent or more included Asko, Eurotech, Homark, Hygena (MFI's own-label brand), Ocean (Groupe Brandt), Philco GB, Tefal, Thorn (Whirlpool) and Zerowatt (Candy).

ßßGfK data exclude Northern Ireland. The sales figures shown have been rounded up by 2.5 per cent to give an estimate for the UK as a whole. Sales value is inclusive of VAT; quantity figures refer to the number of units sold.

7.39. In the same year, GDA (Hotpoint and Creda) was the largest supplier of washing machines, with a market share of 31.8 per cent (by value), which was one percentage point down on 1993. Emaco (Zanussi, AEG, Tricity Bendix and Electrolux) was the second largest with a share of 20.7 per cent, 0.5 percentage points up on 1993. These two together accounted for 52.6 per cent of sales. The third largest was Merloni (Indesit, Ariston and Philco), with 14.2 per cent of sales. Next was Candy (CDA and Hoover) with 13.5 per cent of sales, 1.9 percentage points down on 1993: Hoover lost market share during this period, whilst CDA's Candy brand increased by 1.8 percentage points. In 1995, these top four suppliers together accounted for 80.3 per cent of sales. Other important suppliers were Whirlpool (4.0 per cent share), Bosch-Siemens (3.9 per cent), Servis (3.5 per cent) and Miele (1.4 per cent). Except for Hoover, the market shares in 1995 of most brands and suppliers were similar to those in 1993.

7.40. As mentioned above (see paragraph 7.18), some washing machines available in the UK are sold under retailers' own-label brands. That is, the retailers own or lease the rights to the brand names, but the products are manufactured by other companies. The Electra brand, owned by the RECs (see paragraph 9.34), was the largest, with a market share of 5.0 per cent. Electra washing machines were manufactured by both GDA (about one-half) and AMS[1] (also about one-half, though AMS made the majority of Electra's washer-driers) during the period 1993 to 1995. Comet's own-label brand names are Blomberg and Proline (made by Groupe Brandt-see paragraph 8.41), which together accounted for only 0.8 per cent of sales.

7.41. As indicated above, in 1995 the top four brands together accounted for 65 per cent of sales of washing machines by value, and the top four suppliers for 80 per cent. The Herfindahl-Hirschman Index (HHI) value (often known simply as the Herfindahl index) is a measure of market concentration used *inter alia* by the US competition authorities (Department of Justice and Federal Trade Commission) in assessing horizontal mergers. The HHI is calculated as the sum of squares of the market shares of all suppliers; for washing machines, the HHI (calculated for 1995, by value) was 1908. The 1992 merger guidelines under which the US authorities operate suggest that an HHI of up to 1,000 indicates a market that may be broadly characterized as being relatively unconcentrated, a value between 1,000 and 1,800 indicates `moderate concentration' and a figure of 1,800 and above `high concentration'. The guidelines stress that the threshold values are not precise in economic terms and that, other things being equal, merger cases falling just above and below a threshold present comparable competition issues.

Market dynamics: innovation and new entry

7.42. As explained earlier, washing machines are well-established consumer durable products, and both consumer demand and the products themselves are said to be mature. Whilst on the product side there are continuing incremental improvements, particularly in machine reliability, energy usage and programming sophistication (for example, the use of `fuzzy logic' systems), today's machines are nonetheless technically much the same as, say, ten years ago. Suppliers told us that they did not envisage any major product innovations in the foreseeable future; reflecting this, the model life of washing machines was usually around three to four years (though sometimes less). New or replacement models typically incorporate relatively minor improvements, together with an updating or restyling of the external appearance.

7.43. On the manufacturing side, we were told, there are significant economies of both scale and scope. Manufacturing involves component assembly where, at the factory level, there are said to be considerable scale (and cumulative output) economies in both machine production and also the purchasing of materials and components. At the enterprise level, these are likely to be enhanced by the production, marketing and distribution of other similar white goods, such as tumble driers, dishwashers and CFS products (ie there are economies of scope).

7.44. In this context, we note that many of the largest suppliers of washing machines in the UK market (Emaco, Merloni, Candy, Whirlpool and Bosch-Siemens) are also suppliers of the other reference white

[1]As explained in paragraph 8.46, we use the acronym AMS when referring to Antonio Merloni SpA, an Italian producer. AMS is a third party, largely unbranded supplier, ie it mostly manufactures washing machines and other reference goods for other suppliers (though it also supplies reference goods-in markets other than the UK-under the Ardo brand name). Apart from Electra, for example, AMS also supplies most Servis brand products (see paragraph 8.35).

goods, and sell their products throughout the European market. More particularly, AB Electrolux (the parent of Emaco) is the largest supplier; it accounts for 20 to 24 per cent of washing machine sales in the EU. Bosch-Siemens and Whirlpool (WEBV) each account for around 10 per cent, Merloni about 8 per cent and Miele about 6 per cent (mainly in Germany). GDA, on the other hand, has traditionally operated primarily in the UK market, which takes about 90 per cent of its sales. Groupe Brandt (see paragraph 8.41) is particularly strong in the French market and accounts for about 9 per cent of washing machine sales in the EU, though at present it enjoys only a small share of the UK market with its Ocean brand (EU market shares for the other reference white goods are given in the relevant sections below).

7.45. Scale economies appear to represent a significant barrier to entry by new producers (for each of the reference white goods) both in the UK and also at the wider EU level. There is also excess capacity in manufacturing within the EU, we were told, which acts as a further barrier. Nonetheless, a new supplier entering the UK market would not necessarily need to establish additional production capacity. As with retailers' own-label products, it is likely that a new supplier would be able to obtain supplies of washing machines either from existing branded manufacturers (for example, GDA supplies some of the Electra brand products) or unbranded, third party suppliers, the largest of which appears to be AMS in Italy (which supplies Electra and makes all the Servis brand products-see paragraph 7.40).

7.46. Were new entry to be attempted, existing suppliers in the EU not represented (or not well-represented) in the UK, such as Groupe Brandt, would be possible new entrants. We were told (by Emaco) that transport costs within continental Europe are about 1 to 4 per cent of sales revenue, though the costs of moving washing machines from continental Europe to the UK were said to be somewhat higher. At present, imports account for about 60 per cent of sales in the UK market.

7.47. In practice, with the possible exception of Whirlpool, there appears to have been no new entry (by suppliers) into the UK market on any scale in recent years, nor any exits. Whirlpool introduced its brand here following its acquisition of Philips' European white goods business in 1989 and considers itself to be a recent entrant in European markets. It told us that it had extensively reorganized on a pan-European basis what was previously Philips' white goods business. Whirlpool estimated that its 1996 market share in the UK was probably slightly above that of Philips prior to the take-over. In the future, we were told, there is a prospect of new entry in the form of both direct imports from low-cost, East European countries, and of production investment in the UK from Far Eastern suppliers, which at present face high transport costs. But these potential entrants face the difficulty of establishing their brands (and reputations) in a market served by long-established and well-promoted brands such as Hotpoint, Zanussi and Bosch. As mentioned earlier (see paragraph 7.16), both Whirlpool and MDA (in respect of its Ariston brand) told us that consumers' brand loyalty had proved to be the main obstacle to overcome in establishing their brands and expanding their market shares in the UK, for each of the reference white goods. Whirlpool added that this was reinforced by other barriers which included the `brand conservatism' and high concentration of UK retailers. More particularly, the behaviour of the major suppliers, the foreclosure of retail floor space, the `loyalty discount' structures offered to retailers by the established brands and suppliers (ie the wide availability of volume-related, retrospective rebates-see paragraphs 10.101 to 10.104), and also suppliers' use of demonstrators and retailer staff incentive schemes (ie SPIVS-see paragraph 8.67) impeded entry.

Price trends

7.48. Some suppliers (notably GDA) told us that there was `price deflation' in the UK market for washing machines (and also the other reference white goods), in that prices were declining in real terms, ie they were increasing at a slower rate than those of most other products and services in the economy, as measured by the retail price index (RPI). Comparing prices of washing machines over time is inherently difficult, however, because models and technical specifications change and are not easily comparable. Moreover, the product mix of the sales of different types of machine purchased is also subject to change. The GDA survey (see paragraph 7.13) indicated, for example, that the proportion of washer-driers in the UK sales mix had declined in recent years, which of itself would tend to reduce the average price of washing machines as a whole. As indicated above, the average unit value of sales declined in cash terms (money of the year) by nearly 5 per cent between 1993 and 1995.

7.49. Our own evidence on the price histories of specific models of washing machines (see Chapter 11) indicates that suppliers' RRPs may go up as well as down during the life of any particular model, though the trend values of RRPs appear to have been broadly stable in cash terms over the past two or three years. With general inflation in the UK economy (as measured by the RPI) running at 2 to 3 per cent a year over that period, this suggests that the retail prices of washing machines will have declined somewhat in real terms.

7.50. Although there are no published Government statistics on the trend of washing machine prices as such (or for the other reference goods), the ONS publishes a price index for `major appliances' based on data which it collects for the purposes of compiling the general RPI. The index prices for washing machines, but also those for the other white reference goods, together with a number of non-reference products, such as cookers, heaters and vacuum cleaners. This index indicates that major appliance prices increased between 1985 and 1992/93 by about 12 per cent. Since then, however, they have fallen back, by about 3 per cent.

7.51. The ONS also provided us with separate indices of prices for washing machines (and the other reference white goods), which go to make up this more aggregated `major appliances' index. The ONS told us that these indices should be used with caution because they are based on relatively small samples. They reflect retailers' displayed prices rather than transaction prices, and they do not fully overcome the difficulties arising from changes in technology, models and the sales mix (see paragraph 7.48). Subject to these caveats, the price index for washing machines confirms that washing machine prices have declined in real terms in recent years.

Tumble driers

The products, consumer demand and market characteristics

7.52. In the tumble drier inquiry, the products are taken to be electric-powered machines designed for domestic use to dry clothes and other household fabrics by means of heated air blown into a rotating drum: machines intended for non-domestic use (in restaurants, institutions etc) are excluded. Tumble driers are long-established consumer durable products, both in the UK and elsewhere. Models sold in the UK are front-loading and most are vented, though different models offer different specifications, features and build quality. Although similar in appearance to washing machines (and usually the same size), tumble driers are technically less complex. As a consequence they are generally less prone to breaking down, and are usually less expensive. Features such as higher load capacities, a reverse-spin facility, and a condenser to contain and liquefy the steam generated, add to the cost of the machine. The great majority of models purchased in the UK market are standard-sized, free-standing machines for use:

(a) as a stand-alone unit with its own work-top;

(b) for stacking on top of a washing machine (a common arrangement); or

(c) for locating beneath an existing kitchen work-top.

Others are so-called built-in products, for use in fitted kitchens, but sales volumes are small.

7.53. As explained later, the retail price of the most popular (big-selling) tumble driers is in the range £100 to £200, though some up-market models can cost significantly more. Condenser models typically sell for £70 or so more than non-condenser (vented) models.

7.54. Around 50 per cent of households in the UK currently own a tumble drier, compared with about 35 per cent ten years ago (albeit that the number of separate households has also increased). As a result, whilst many purchases are probably made in order to replace an existing machine (replacement demand), many are also likely to represent first-time purchases. Demand, we were told, is rather more seasonal than that for, say, washing machines or dishwashers, with the peak being in the winter months. An average household is likely to own only a single tumble drier, mostly for use in conjunction with a washing machine. Usage rates inevitably vary depending on domestic circumstances (for example, as between large and small families), and the frequency of use will largely determine the operational life of the machine, which is typically about seven to ten years.

7.55. Given the rate of ownership, tumble driers appear not to be widely regarded as essential items to the same extent as are refrigerators, washing machines and televisions. But for some they may be regarded as near-essential. Where consumers are replacing an existing machine which has gone wrong (and is judged to be `beyond repair'), they may regard replacement as a matter of urgency (a distress purchase), given the frequent demand for the services of a tumble drier in many households.

7.56. When buying a tumble drier (whether or not as a distress purchase), many consumers will no doubt first consider broadly how much they wish to spend, because the total outlay involved (an average of about £170) is not insignificant for most households. For replacement purchases, some consumers may simply opt for the same brand and type of machine that they own already, though there is a range of different brands and models from which to choose, available from a variety of alternative retailers (though Dixons, Comet, the RECs and department stores such as JLP are the leading retailers-see Table 7.7). As with the other reference white goods (and indeed most other electrical/mechanical products), consumers will often be concerned with the functional performance of different models on offer, their reliability in use, and product durability. These quality attributes are not necessarily readily discernible in most cases, however, which increases the difficulties of making comparisons of value for money between different models and brands, particularly perhaps with regard to less well-known brands (see also paragraph 7.12, and paragraphs 9.81 to 9.90 for our evaluation of model proliferation and range differentiation).

7.57. Views and evidence on the extent to which consumers are willing to shop around for reference goods was considered earlier in paragraphs 7.13 and 7.14 (though we note that the GDA survey did not cover tumble driers). Similarly, the role of consumer magazines and the importance of brand loyalty for white goods were discussed in paragraphs 7.15 and 7.16 to 7.18 respectively. Some of the major brands in the markets for the other reference white goods (Hotpoint, Zanussi and Creda) are also well-established in this market, as explained further below. The largest-selling brand, White Knight (supplied by Crosslee), is relatively new, however, having been introduced in 1986/87 (see paragraph 8.37). Retailers' own-label brands (see paragraph 9.80) are also more prominent than in the markets for washing machines or dishwashers. The Electra brand (marketed by the RECs and mostly made by GDA) is the largest, with a market share of nearly 7 per cent, though this is down from nearly 10 per cent two years ago (see Table 7.3).

7.58. As with the other reference goods, we considered whether there are alternative products which are effective economic substitutes for tumble driers, and which might therefore influence pricing behaviour in the UK market; and also whether they represent a single economic market, or whether they are segmented into distinct sub-markets.

7.59. The moderate (but increasing) rate of household ownership in the UK suggests that, where available, the use of washing lines, drying racks and the like (natural drying, though possibly facilitated by use of a spin drier) is still widely regarded as an effective alternative to owning a domestic tumble drier. For some consumers, however, this may be impractical and for others it may be highly inconvenient, especially in the winter months. As discussed more fully in paragraphs 7.25 and 7.26, a washer-drier provides an alternative to buying an autowasher and separate tumble drier. For most consumers, however, the choice between these options is likely to depend largely on factors such as space availability, perceived drying performance and operational flexibility.

7.60. As with washing machines (see paragraphs 7.20 and 7.21), a possible alternative to the purchase of a tumble drier is to resort to the driers available in launderettes. We doubt, however, given the cost and inconvenience involved, that launderette drying facilities represent a realistic option for many consumers. Moreover, for much the same reasons as those put forward in the case of washing machines (see paragraphs 7.22 and 7.23), we do not think that tumble drier rental, or second-hand or used tumble driers, can sensibly be regarded as economic substitutes for the purchase of new tumble driers.

7.61. Turning to possible market segmentation, we do not regard condenser and vented models (nor free-standing and built-in variants) as forming separate markets, essentially because suppliers generally produce both and can readily shift output between them. For reasons given earlier (see paragraphs 7.29 to 7.32), which again included supply-side substitution, we do not consider different value segments to be distinct economic markets.

7.62. Taking the tumble drier market as unified and distinct for the purposes of our inquiry (and neither suppliers nor retailers suggested otherwise), we consider that the overall demand for the products is likely to be influenced mainly by macro-economic factors, such as consumers' incomes, the level of interest rates, consumer confidence, the age distribution of the existing stock of tumble driers in use and the state of the housing market, as evidenced by the slump in demand during the recent recession (see paragraph 7.63).

Sales and suppliers' market shares

7.63. Table 7.1 shows the quantity of sales of tumble driers in the period 1985 to 1995, expressed as an index (with 1985 as the base year). The figures indicate that sales of tumble driers have not shown marked trend growth over this period, but they have been volatile and pro-cyclical. After 1985 sales increased sharply, and at their peak (1987) were about 20 per cent above the 1985 level. But demand subsequently slumped by over 30 per cent, with a trough in sales in 1991. As the economy recovered, demand for tumble driers revived and by 1995 sales quantities were back to their 1989 level, though still well below the pre-recession peak.

7.64. As shown in Table 7.3, total UK sales of tumble driers in 1995 were about 0.56 million units, at a retail value (including VAT) of £93 million (giving an average unit value across all the different types and models of tumble drier of about £170). Demand has grown by about 7 per cent over the years 1993 to 1995; the average unit value of sales has been broadly constant.

7.65. Also shown in Table 7.3 are the market shares (by quantity and value of retail sales) of the various brands and suppliers of tumble driers, and also those of retailers' own-label products. As with the other reference goods, we have measured suppliers' sales and market shares at the retail rather than supplier level (see paragraph 7.36), and market shares by value rather than volume (see paragraph 7.37). These figures do not separately identify sales to retailers by wholesalers, but such sales are limited and appear to account for less than 5 per cent of the total. The wholesale sector is considered further in Chapter 8, which also includes a fuller description of suppliers and brands.

7.66. As shown in Table 7.3, the ten largest suppliers and retailers' own-label brands (comprising about 20 separate brands in total) together accounted in 1995 for all but 1 per cent of sales, the rest being made by a further three smaller brands. Apart from Crosslee and Miele, most of the larger suppliers market their products under more than one brand. In 1995 the largest-selling brands with shares by value of more than 5 per cent were Hotpoint and Creda (both made by GDA), each with just over 20 per cent, White Knight (Crosslee) with about 23 per cent and Zanussi (Emaco) with 14.1 per cent. In addition, the Electra own-label brand (offered by the RECs) had a 6.8 per cent market share.

7.67. In the same year, GDA (Creda, Hotpoint and Parnall) was the largest supplier of tumble driers, with a market share of 44.1 per cent (by value), which was 2.1 percentage points less than in 1993. Crosslee (-White Knight) was the second largest with a share of 22.7 per cent, which was 6.6 percentage points up on 1993. These two suppliers together accounted for two-thirds of sales. The third largest supplier was Emaco (Zanussi, AEG, Tricity Bendix and Electrolux) with 16.2 per cent of sales, which was 1.2 percentage points up on 1993. Next was the Electra own-label brand with 6.8 per cent of sales, down 2.9 percentage points compared with 1993. In 1995 these four together accounted for 89.8 per cent of UK sales. Other suppliers included Candy with 2.6 per cent of sales; and BSDA, Miele, Whirlpool, Merloni and Servis, each with market shares of under 2 per cent.

7.68. As regards manufacture, three domestic suppliers together make about 85 per cent of the tumble driers sold in the UK market. In addition to its own brands, GDA makes most of the Electra brand products, so that its share in manufacture (rather then supply) is about 52 per cent. Similarly, Crosslee also makes tumble driers for other brands, including Zanussi (for part of its range), Whirlpool and Indesit: its share in manufacture is about 30 per cent. The third UK manufacturer, Hoover, accounts for a further 2.5 per cent.

TABLE 7.3 **Tumble driers: UK market shares* of suppliers' brands and retailers' own-label brands, by quantity and value, in 1993, 1994 and 1995**

per cent

	1993		*1994*		*1995*	
Supplier/brand#	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
GDA						
Creda	23.3	22.8	22.8	22.5	23.3	22.8
Hotpoint	20.1	22.1	21.8	22.6	19.7	21.0

Parnall	1.9	1.3	1.0	0.8	0.5	0.4
Total	45.3	46.2	45.6	45.8	43.5	44.1
Crosslee (White Knight)	19.6	16.1	20.3	17.6	27.3	22.7
Emaco						
Zanussi	11.8	12.6	11.4	12.7	12.1	14.1
AEG ~	0.6	1.5	0.6	1.4	0.7	1.5
Tricity Bendix	0.6	0.6	0.3	0.3	0.5	0.4
Electrolux	0.2	0.2	0.3	0.3	0.2	0.2
Total	13.3	15.0	12.6	14.7	13.4	16.2
*Electra*Ð	11.4	9.7	10.5	8.7	8.3	6.8
*Candy*ð						
Hooverß	3.0	3.9	2.6	3.3	2.3	2.6
Candy	0.8	0.5	0.3	0.2	0.1	0.1
Total	3.8	4.4	2.9	3.5	2.4	2.6
BSDA						
Bosch	0.6	1.2	1.0	2.0	1.0	1.9
Siemens	0.0	0.0	0.0	0.1	0.0	0.0
Total	0.6	1.2	1.0	2.1	1.0	1.9
Miele	0.5	1.9	0.4	1.3	0.5	1.9
Whirlpool (Whirlpool/Bauknecht)	1.7	1.9	1.1	1.2	0.8	1.0
*Merloni***						
Philco##	0.4	0.3	0.7	0.6	0.5	0.5
Indesit	1.0	1.0	0.4	0.4	0.2	0.2
Ariston	0.5	0.4	1.1	0.9	0.3	0.2
Total	1.9	1.7	2.2	1.9	0.9	0.9
Servis	0.5	0.5	1.0	0.7	0.9	0.8
Others ~ ~	1.4	1.5	2.4	2.3	1.0	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total salesÐÐ ('000/£m)	515.6	86.9	548.1	92.2	555.8	92.6
Average unit value (£)		168		168		167

Source: GfK, suppliers and MMC.

*Individual brand shares are subject to rounding effects and may not sum exactly to the total figures given.
#Suppliers and brands are ranked by market share by value in 1995.
~ Acquired in 1994-see paragraph 8.14
ÐElectra is an own-label brand offered by the RECs-see paragraph 7.66.
ðIncluding CDA-see paragraphs 8.18 to 8.23.
ßAcquired in 1995-see paragraph 8.19.
**Including MDA-see paragraph 8.24.
##See paragraph 8.26.
~ ~ Includes Thorn (Whirlpool) with market shares by value in 1995 of about 0.2 per cent or more, including Asko, Eurotech, Homark, Hygena (MFI's own-label brand), Ocean (Groupe Brandt), Philco GB, Tefal and Zerowatt (Candy).
ÐÐGfK data exclude Northern Ireland. The sales figures shown have been rounded up by 2.5 per cent to give an estimate for the UK as a whole. Sales value is inclusive of VAT; quantity figures refer to the number of units sold.

7.69. As indicated above, in 1995 the top four brands together accounted for 81 per cent of sales of tumble driers by value, and the top three suppliers plus the Electra own-label brand for 90 per cent. The HHI value, which as explained earlier (see paragraph 7.41) is a measure of market concentration based on the market shares of all suppliers, was 2,786, well above the high concentration threshold of 1,800 suggested by the US competition authorities.

Market dynamics: innovation, new entry and price trends

7.70. As mentioned earlier, consumer demand and the rate of household ownership of tumble driers in the UK have increased over the past decade, and may be expected to grow further in the future. The products themselves are less complex than, say, washing machines, and the technology is relatively mature. Whilst suppliers continue to make incremental improvements, particularly in machine reliability and programming sophistication, today's machines are technically much the same as, say, ten years ago; suppliers told us that they did not envisage any major product innovations in the foreseeable future. As a result, the model life of tumble driers can be quite long-sometimes eight years or even longer. As with the other reference white goods, new or replacement models usually incorporate relatively minor improvements, together with an updating or restyling of the external appearance.

7.71. On the manufacturing side, there are significant economies of both scale and scope, we were told, as with the other reference goods (see paragraph 7.43). As a result, several of the largest suppliers in the UK market are both multi-product suppliers and operate throughout the wider EU market. Bosch-Siemens, for example, accounts for around 11 per cent of tumble drier sales in the EU, AB Electrolux (the parent of Emaco) for 20 to 24 per cent of sales, Whirlpool (WEBV) for around 13 per cent, and Miele about 9 per cent (mainly in Germany). GDA, on other hand, has traditionally operated primarily in the UK market, which in 1995 took about 90 per cent of its sales. Groupe Brandt is particularly strong in the French market and accounts for about 7 per cent of tumble drier sales in the EU, though at present it is not well-represented in the UK market.

7.72. However, tumble driers differ in some respects from the other reference goods. About 85 per cent of UK supplies are domestically produced, by GDA, Crosslee and Hoover. Crosslee (a management buy-out from Philips-see paragraph 8.37) is the largest UK producer, with over one-half of its output being exported. Moreover, as far as reference goods are concerned, Crosslee only produces tumble driers, unlike other manufacturers.

7.73. Scale economies and excess capacity appear to represent a significant barrier to entry by new producers both in the UK and also at the wider EU level. But as with the other reference white goods (see paragraph 7.45), a new supplier entering the UK market would not necessarily need to establish new production capacity. It is likely that a new supplier would be able to obtain supplies from existing UK manufacturers, most probably GDA or Crosslee. Alternatively, supplies might come from unbranded, third party suppliers, the largest of which appears to be AMS-see paragraph 7.40 (which supplies Servis).

7.74. Were entry to be attempted, existing suppliers in the EU which are not represented (or not well-represented) in the UK, such as Groupe Brandt, would be possible new entrants to the UK market. Crosslee (and perhaps also Whirlpool-see paragraph 7.47) provides the obvious example of successful past entry by a new brand (albeit based on existing production capacity and an existing business organization); there do not appear to have been any exits. As with the other reference goods (see paragraph 7.47), new entrants face the difficulty of introducing their brands and building reputations in a market served by established and well-promoted makes such as Hotpoint, Creda, Zanussi, Bosch and (by now) White Knight. As mentioned earlier, both Whirlpool and Ariston (MDA) told us that consumers' brand loyalty had proved to be the main difficulty in establishing their brands and expanding their market shares in the UK; Whirlpool also referred to other entry barriers (see paragraph 13.409). The experience of Crosslee (White Knight) appears to indicate, however, that new brands can enter and compete successfully.

7.75. As regards price trends, some suppliers (for example, GDA) told us that there was `price deflation' in this market, in the sense that tumble drier prices were increasing at a slower rate than the RPI, as discussed previously and more fully in relation to washing machines (see paragraphs 7.48 to 7.51). Our own evidence on the price histories of specific models of tumble driers (see Chapter 11) indicates that suppliers' RRPs may go up as well as down during the life of any particular model, though the trend values appear to have been broadly stable in cash terms over the past two or three years. With general inflation in the UK economy (as measured by the RPI) running at 2 to 3 per cent a year over that period, this suggests that tumble drier prices will have declined somewhat in real terms.

7.76. The ONS provided us with a separate price index for tumble driers, based on data which it collects for the purposes of compiling the general RPI index (see paragraph 7.51). The ONS told us that the index should be interpreted with caution, because it is based on relatively small samples. It reflects retailers' displayed prices rather than transaction prices, and it does not fully overcome the difficulties arising from changes in features, models and the sales mix. Subject to these caveats, the price index for tumble driers confirms that tumble drier prices have declined somewhat in real terms in recent years.

Dishwashers

The products, consumer demand and market characteristics

7.77. For the purposes of the dishwasher inquiry, the products are taken to be machines designed for domestic use to wash cutlery, crockery, cooking equipment and similar items: dishwasher products intended for non-domestic use (in restaurants, institutions etc) are excluded. Domestic dishwashers are long-established consumer durable products which operate by means of spraying jets of heated water on to soiled utensils arranged in racks inside the machine. Different models offer different specifications, features (such as load capacity) and build quality, but perform basically the same function. All models have a pull-down door at the front and are available with a series of alternative programmes which are suitable for washing different types of utensil-load, together with a drying programme. Most models (we estimate around 85 per cent by volume) purchased in the UK market are standard-sized, free-standing appliances for use either as a stand-alone unit with its own work-top, or for locating beneath an existing kitchen work-top. Others are built-in units, for use in fitted kitchens. As explained later, the retail price of most popular dishwashers is in the range £250 to £500, though some up-market models can cost significantly more (up to £1,000).

7.78. Around 20 per cent of households in the UK currently own a dishwasher, compared with about 7 per cent ten years ago (albeit that the number of households has also increased). It follows that, whilst some purchases are made in order to replace an existing machine, a majority are likely to be by first-time buyers. An average household is likely to own only a single dishwasher. Usage rates inevitably vary depending on domestic circumstances (for example, as between large and small families), and the frequency of use will largely determine the operational life of the machine, which is typically about seven to ten years. Given the relatively low rate of ownership, dishwashers appear not to be regarded as essential items in the same way as are refrigerators, washing machines and televisions. But where consumers are replacing an existing machine which has gone wrong (and is judged to be `beyond repair'), they may regard replacement as a matter of urgency.

7.79. When buying a dishwasher, many consumers will no doubt first consider broadly how much they wish to spend, because the total outlay (an average of about £350) involved is quite large for most households. For replacement purchases, some consumers may simply opt for the same brand and type of machine that they own already, though there is a wide range of different brands and models from which to choose, available from a variety of alternative retailers (though Dixons, Comet, MFI, JLP and the RECs are by far the leading retailers-see Table 7.7). As with washing machines (see paragraph 7.12), consumers are likely to be interested in the functional performance of different models on offer, their reliability in use and product durability. In common with most electrical/mechanical products, these quality attributes are not necessarily readily discernible in most cases, however, which increases the difficulties of making comparisons of value for money between different models and brands (see also paragraphs 9.87 to 9.90, for our evaluation of model prolifer-ation and range differentiation).

7.80. Views and evidence bearing on the extent to which consumers are willing to shop around for white goods were set out earlier (see paragraphs 7.13 and 7.14). Whirlpool provided details of its own market research report on dishwashers (carried out by Research International in 1992, based on a sample of about 225 consumers) in support of its views. This suggested that around three-quarters of all consumers decided which model to purchase either in, or as a result of visiting, a single shop.

7.81. The role of consumer magazines and the importance of brand loyalty for dishwashers were explained in paragraphs 7.15 and 7.16 to 7.18 respectively. Whirlpool's survey (see paragraph 7.80) indicated that only about 10 to 15 per cent of consumers refer to consumer guides and magazines before buying dishwashers (but 70 per cent of consumers regarded brand names as either very important or fairly important in making their choice of purchase). Within retail outlets, the sales staff are also a source of comparative information, though the quality of advice (and its objectivity) appears to be highly variable (see paragraphs 8.67 and 8.68).

7.82. Retailers' own-label brands (see paragraphs 9.80 to 9.86) are not well represented in this market. Comet's Blomberg brand and the Electra brand offered by the RECs are the chief own-label brands, but taken together their market share by value for dishwashers in 1995 was only around 2 per cent (see paragraph 7.93).

7.83. As with the other reference goods, we considered whether there are alternative products which are effective economic substitutes for dishwashers, and which might therefore influence pricing behaviour in the UK market; and also whether they represent a single economic market, or whether they are segmented into distinct sub-markets.

7.84. As regards the wider market question, the relatively low rate of household ownership in the UK suggests that hand-washing of dishes and cooking utensils is still very widely regarded as an effective alternative to owning a domestic dishwasher. A growing proportion of consumers, however, particularly perhaps the younger age groups, appear to regard hand-washing as inconvenient or as consuming too much leisure time, and therefore find it worthwhile to buy a dishwasher. For these consumers, however, there are no substitute machines as such which perform the same functions. Moreover, as with the other reference white goods, we do not consider either rented or used equipment to be close economic substitutes (see paragraphs 7.22 and 7.23).

7.85. Turning to possible market segmentation, as explained earlier in respect of washing machines (see paragraph 7.27), for many consumers free-standing and built-in products will not be effective substitutes for each other (unless consumers are refurbishing an existing kitchen or setting up a new home). More importantly, producers of free-standing models can be expected to be able to switch production without difficulty to that of built-in equipment, and vice versa (indeed, many manufacturers make both at present), and supply-side substitution is therefore likely to be high. Overall, we do not regard these as distinct economic sub-markets.

7.86. Similarly, because of the potential for both demand and supply side substitution (see paragraphs 7.29 to 7.32), we do not consider different value segments to be distinct economic markets. Nor are there any other features which seem likely to give rise to separate sub-markets.

7.87. Taking the dishwasher market as unified and distinct for the purposes of our inquiry (and parties to this inquiry did not suggest that we should do otherwise), we consider that the overall demand for dishwashers is likely to be influenced mainly by macro-economic factors, such as consumers' incomes, the level of interest rates, consumer confidence, the age distribution of the existing stock of dishwashers in use and the state of the housing market, as evidenced by the slump in demand during the recent recession (see paragraph 7.88).

Sales and suppliers' market shares

7.88. Table 7.1 shows the quantity of sales of dishwashers in the period 1985 to 1995, expressed as an index (with 1985 as the base year). As shown in the table, unit sales have grown strongly over time, but they have also been volatile. In the late 1980s and during the height of the housing boom, sales increased sharply; at the peak in 1989, sales were double the 1985 level. Volumes subsequently slumped by about 20 per cent during the recent economic recession (the low point being 1991). As the economy recovered, sales for dishwashers revived, with a new peak being reached in 1994. Sales fell back in 1995, but were still about double the level of ten years earlier.

7.89. As shown in Table 7.4, total UK sales of dishwashers in 1995 were about 0.42 million units, at a retail value (including VAT) of £145 million (giving an average unit value across all the different models of about £350). Volume in 1995 was much the same as in 1993, and the average unit value of sales little changed.

7.90. Also shown in Table 7.4 are the market shares (by quantity and value of retail sales) of the various brands and suppliers of dishwashers, and also those of retailers' own-label products. As with the other reference white goods, we have chosen to measure suppliers' sales and market shares at the retail rather than supplier level (see paragraph 7.36), and market shares by value rather than quantity (see paragraph 7.37). The statistics do not separately identify sales to retailers by wholesalers, but such sales are limited and appear to account for less than 5 per cent of the total. The wholesale sector is considered further in Chapter 8 (see paragraphs 8.47 to 8.50), which also includes details of suppliers and brands.

7.91. As shown in Table 7.4, the 12 largest suppliers and retailers' own-label brands (about 20 separate brands in total) together accounted for 96 per cent of sales in 1995, with the other 4 per cent being made by a further nine smaller brands. Each of the top six suppliers markets its products under more than one brand. In 1995 the largest-selling brands with shares by value of more than 5 per cent were Hotpoint (GDA) with 19.9 per cent, Zanussi (Emaco) with 19.0 per cent, Bosch (BSDA) (15.3 per cent), Indesit (MDA) (5.3 per cent), and AEG (Emaco) (5.0 per cent).

7.92. In the same year, Emaco (Zanussi, AEG, Tricity Bendix and Electrolux) was the largest supplier, with a market share of 27.6 per cent (by value), which was 2.0 percentage points greater than in 1993. GDA (Hotpoint and Creda) was the second largest with 21.6 per cent, 4.7 percentage points down on 1993. These two suppliers together accounted for 49.2 per cent of sales. The third largest supplier was Bosch-Siemens with 20.6 per cent of sales, 5.9 percentage points up on 1993. Next was Merloni (Indesit, Ariston and Philco), with 8.2 per cent of sales, down 1.7 percentage points compared with 1993. In 1995 these top four suppliers together accounted for 78.0 per cent of UK dishwasher sales. Candy (CDA and Hoover) was the next largest with 5.1 per cent of sales, 0.4 percentage points down on 1993: Hoover lost market share during this period, whilst CDA Candy brand increased by 1.8 percentage points. Other significant suppliers were Whirlpool (4.2 per cent), Miele (2.9 per cent) and Servis (2.7 per cent).

7.93. As already mentioned, some dishwashers available in the UK are sold under retailers' own-label brands. Comet's own-label brands-Blomberg and Proline (made by Groupe Brandt)-were the largest but together accounted for only 1.1 per cent of sales. The Electra brand, owned by the RECs, had a similar market share (0.9 per cent): most Electra dishwashers were manufactured by AMS (see paragraph 7.40) during the period 1993 to 1995. Taken together, these own-label brands accounted for only 2 per cent of sales, though this was 1.4 percentage points up on 1993. The other smaller brands (each with market shares of less than 0.5 per cent) also increased their collective share of sales to 3.8 per cent in 1995, compared with 0.6 per cent in 1993.

7.94. In 1995, the top four brands together accounted for 61 per cent of sales of dishwashers by value, and the top four suppliers for 78 per cent. The HHI, which as explained earlier (see paragraph 7.41) is a measure of market concentration based on the market shares of all suppliers, was 1,782.

Market dynamics: innovation, new entry and price trends

7.95. As mentioned earlier, consumer demand and the rate of household ownership of dishwashers in the UK have doubled over the past decade, and may be expected to increase further in the future. The products themselves are nonetheless relatively mature. Whilst suppliers continue to make incremental improvements, particularly in machine reliability, today's appliances are technically much the same as, say, ten years ago, and suppliers told us that they did not envisage any major product innovations in the foreseeable future. As a result, the model life of dishwashers is often around three to four years (though sometimes less). New or replacement models typically incorporate relatively minor improvements, together with an updating or restyling of the external appearance.

TABLE 7.4 **Dishwashers: UK market shares* of suppliers' brands and own-label brands, by quantity and value, in 1993, 1994, 1995**

per cent

	1993		*1994*		*1995*	
Supplier/brand#	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
Emaco						
Zanussi	18.1	19.0	17.3	18.3	18.7	19.0
AEG ~	3.5	4.1	5.5	6.2	4.1	5.0
Tricity Bendix	2.1	1.7	1.1	1.0	3.9	3.2

Electrolux	0.8	0.7	0.4	0.4	0.2	0.3
Total	24.4	25.6	24.3	25.9	27.0	27.6
GDA						
Hotpoint	24.2	24.2	21.2	21.2	20.1	19.9
Creda	2.3	2.1	2.1	2.1	1.7	1.8
Total	26.5	26.3	23.3	23.3	21.8	21.6
*Bosch-Siemens*Ð						
Bosch	10.7	11.7	12.9	14.6	13.3	15.3
Siemens	1.1	1.1	1.5	1.5	1.6	1.7
Neff	1.1	1.9	1.6	2.5	2.3	3.6
Total	12.8	14.7	16.0	18.6	17.2	20.6
*Merloni*ð						
Indesit	8.6	5.9	8.7	6.0	7.6	5.3
Ariston	3.3	2.7	4.8	4.1	2.7	2.4
Philcoß	1.6	1.2	1.4	1.0	0.8	0.6
Total	13.5	9.9	14.8	11.1	11.0	8.2
*Candy***						
Candy	1.6	1.2	1.9	1.5	3.8	3.0
Hoover##	4.0	4.3	2.7	2.9	2.1	2.1
Total	5.5	5.5	4.6	4.4	5.9	5.1
Whirlpool						
Whirlpool	11.4	11.2	7.7	7.1	4.0	3.8
Bauknecht	1.1	1.4	0.5	0.7	0.1	0.2
Ignis	0.0	0.0	0.1	0.1	0.2	0.2
Total	12.5	12.6	8.4	8.0	4.4	4.2
Miele	1.1	2.1	1.2	2.5	1.3	2.9
Servis	1.4	1.0	3.3	2.4	3.7	2.7
Comet ~ ~	0.0	0.0	0.1	0.1	1.6	1.1
*Electra*ÐÐ	0.8	0.6	1.2	0.9	1.3	0.9
Homark	0.6	0.7	0.8	0.9	0.9	0.8
Asko	0.3	0.4	0.3	0.4	0.4	0.5
Othersðð	0.5	0.6	1.8	1.6	3.5	3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total salesßß ('000/£m)	421.7	150.5	454.5	158.6	419.4	145.0
Average unit value (£)		357		350		346

Source: GfK, suppliers and MMC.

*Individual brand shares are subject to rounding effects and may not sum exactly to the total figures given.
#Suppliers and brands are ranked by market share by value in 1995.
~ Acquired in 1994-see paragraph 8.14
ÐIncluding BSDA-see paragraphs 8.28 and 8.29.
ðIncluding MDA-see paragraph 8.24.
ßSee paragraph 8.26.
**Including CDA-see paragraphs 8.18 to 8.23.
##Acquired in 1995-see paragraph 8.19.
~ ~ Comet's own-label brands. Proline's market share was less than 0.1 per cent.
ÐÐElectra is the own-label brand owned by the RECs-see paragraph 7.93.
ððIncludes De Dietrich (Groupe Brandt), Thorn (Whirlpool) and Smeg, each of which had market shares of around 0.2 per cent. Other small brands (with market shares of 0.01 per cent or more) were Atag, Balay, Gaggenau (Bosch-Siemens), Hygena (MFI's own-label brand), Stoves and Tecnik.
ßßGfK data exclude Northern Ireland. The sales figures shown have been rounded up by 2.5 per cent to give an estimate for the UK as a whole. Sales value is inclusive of VAT; quantity figures refer to the number of units sold.

7.96. On the manufacturing side, there are significant economies of both scale and scope, we were told, in common with the other reference goods (see paragraph 7.43). As a result, many of the larger suppliers in the UK market (Emaco/AB Electrolux, Whirlpool, Bosch-Siemens, Merloni and Candy) are suppliers of the other reference white goods and they also operate throughout the wider EU market. AB Electrolux (the parent of Emaco) is the largest and accounts for 20 to 24 per cent of sales, Whirlpool (WEBV) for around 13 per cent, Bosch-Siemens for 12 per cent, Miele about 8 per cent (mainly in Germany) and Merloni about 5 per cent. GDA, on the other hand, has traditionally operated primarily in the UK market, which in 1995 took about

90 per cent of its sales. Groupe Brandt is particularly strong in the French market and accounts for about 7 per cent of dishwasher sales in the EU, though at present it is not well-represented in the UK market.

7.97. Scale economies and excess capacity appear to represent a significant barrier to new entry by new producers both in the UK and also at the wider EU level. Nonetheless, in common with the other reference white goods (see paragraph 7.45), a new supplier entering the UK market would not necessarily need to establish new production capacity. A new supplier would almost certainly be able to obtain supplies either from existing manufacturers (for example, Whirlpool supplies dishwashers under the Ram and Magnet brand names, and Groupe Brandt supplies Comet's Proline own-label brand) or from unbranded, third party suppliers, the largest of which appears to be AMS (which supplies all Servis brand products and most Electra brand dishwashers).

7.98. Existing suppliers in the EU which are not represented (or not well-represented) in the UK, such as Groupe Brandt, would be possible new entrants to the UK market. At present, imports account for well over one-half of all sales in the UK market. In practice, apart from Whirlpool (see paragraph 7.47), there appears to have been no new entry into the UK market on any scale in recent years, nor any exit. New entrants face the difficulty of introducing their brands (and building reputations) in a market served by long-established brands such as Zanussi, Hotpoint and Bosch. As mentioned earlier (see paragraph 7.47), both Whirlpool and Ariston (MDA) told us, for example, that consumers' brand loyalty had proved to be the main obstacle to be overcome in establishing their brands and expanding their market shares in the UK. Whirlpool also told us that other barriers included the `brand conservatism' and high concentration of UK retailers, and the discount structures offered to retailers by the established brands and suppliers (for example, the availability of retrospective `loyalty' rebates-see paragraphs 10.101 to 10.104).

7.99. As regards retail price trends in the UK market for dishwashers, some suppliers told us that there had been `price deflation', in the sense that dishwasher prices were declining in real terms, as with the other reference white goods. We discuss the difficulties in comparing prices over time more fully in relation to washing machines in paragraphs 7.48 to 7.51. Our own evidence on the price histories of specific models of dishwashers (see Chapter 11) indicates that suppliers' RRPs may go up as well as down during the life of any particular model, though the trend values appear to have been broadly stable in cash terms over the past two or three years. With general inflation in the UK economy running at 2 to 3 per cent a year over that period, this suggests that dishwasher prices will have declined somewhat in real terms.

7.100. The ONS provided a separate index of dishwasher prices, based on data which it collects for the purposes of compiling the general RPI index (see paragraph 7.51). The ONS told us that this index should be used with caution, because it is based on relatively small samples. It reflects retailers' displayed prices rather than transaction prices, and does not fully overcome the difficulties arising from changes in technology, models and the sales mix. Subject to these caveats, the price index for dishwashers confirms that dishwasher prices have declined in real terms in recent years.

Cold food storage equipment

The products, consumer demand and market characteristics

7.101. For the CFS equipment inquiry, the products are taken to be appliances (refrigerators and freezers) designed for domestic use for the purpose of keeping food cool or frozen: CFS products intended for non-domestic use (in restaurants, shops, institutions etc) are excluded. Domestic CFS products are long-established consumer durables and probably the least technically complicated of the reference white goods. They operate by using a compressor to liquefy a refrigerant gas, which then cools the air within the unit. Different models offer different specifications and build quality, and a variety of features (such as movable shelves, self-defrosting refrigeration, frost-free freezing etc), but perform basically the same function. The main alternative types of machine are single-door refrigerators, with or without a freezer compartment; a combined fridge-freezer (with separate doors for each); and separate freezer units (either upright or chest freezers, where the door is on top of the unit).

7.102. Most models (we estimate around 95 per cent by volume) purchased in the UK market are free-standing for use either as a stand-alone unit, or for locating beneath an existing kitchen work-top. They are available in a wide range of sizes. Others are built-in models, for use in fitted kitchens. As explained later, the retail price of most popular refrigerators and freezers is in the range £125 to £250 (though some up-market models can be significantly more expensive). Prices for combined fridge-freezers are typically in the range £200 to £350.

7.103. Almost all (99 per cent) of households in the UK currently own or have ready access to a CFS product (refrigerator), which is only marginally higher than ten years ago. As a result, many purchases are likely to be made in order to replace an existing machine, though some will also be by first-time buyers. Many households are likely to own more than one CFS product: they may often own a fridge and a separate freezer, for example. Usage of CFS products is likely to be continuous, unlike that of the other reference white goods: the operational life of the appliance is typically about 10 to 15 years. Given the high rate of ownership, CFS products appear to be regarded as essential items in the same way as are telephones, washing machines and televisions. Where consumers are replacing an existing machine which has gone wrong (and is judged to be beyond repair), they may regard replacement as a matter of urgency (a distress purchase), given the continuous demand for the services of refrigeration in most households.

7.104. When buying a CFS product (whether or not as a distress purchase), many consumers will no doubt first consider what type of fridge and freezer combination they want; the desired size and features; and broadly how much they wish to spend, because the total outlay (an average of about £245) involved is not insignificant for most households. For replacement purchases, some consumers may simply opt for the same brand and type of appliance that they own already, though there is a wide range of different brands and models from which to choose, available from a variety of alternative retailers (though Dixons, Comet, Iceland, JLP and the RECs are the leading retailers-see Table 7.7). In common with the other reference white goods, when making a purchase, consumers will commonly be concerned with the functional efficiency, reliability and durability of different models, though CFS products are technically simpler and generally more reliable than other reference goods, as indicated above (see paragraph 7.101). Nonetheless, as with other electrical/mechanical products, these quality attributes are not necessarily readily discernible, which increases the difficulties of making comparisons of value for money (see also paragraphs 7.12, and 9.87 to 9.90 for an evaluation of model proliferation and range differentiation).

7.105. Views and evidence bearing on the extent to which consumers are willing to shop around for white goods, including new CFS products, were considered in paragraphs 7.13 and 7.14, and the role of consumer magazines in paragraph 7.15.

7.106. The importance of brand loyalty for white goods generally was dealt with in paragraphs 7.16 to 7.18. Some of the major white goods brands (Hotpoint, Zanussi, Candy and Bosch) are well represented in the market for CFS products, but other brands are also important, as explained further in paragraphs 7.115 to 7.117, and brand loyalty is somewhat less important, we were told, than for other reference white goods. Beko, for example, which sources its products from Turkey, is a relatively recent entrant and a new brand to the UK market, but its market share has grown to 3 per cent. Retailers' own-label products (see paragraphs 9.80 to 9,86) are also better established in this market than in those for the other reference white goods. Comet's Scandinova Blomberg and Proline brands, Electra (offered by the RECs) and Iceland's Iceline are the main such own-label brands, and taken together their market share by value for CFS products in 1995 was around 12.8 per cent (see paragraph 7.117).

7.107. As with the other reference goods, we considered whether there are alternative products which are effective economic substitutes for CFS products, and which might therefore influence pricing behaviour in the UK market; and also whether CFS products as described above represent a single economic market, or whether they are segmented into distinct sub-markets.

7.108. As regards the wider market question, the relatively high rate of household ownership of CFS products in the UK of itself suggests that there are few if any effective alternatives to owning a refrigerator and a freezer, and there are no substitute machines as such which perform the same functions. As with the other reference white goods, we do not consider either rented or used equipment to be close economic substitutes (see paragraphs 7.22 and 7.23).

7.109. Turning to possible market segmentation, for the reasons given earlier, in paragraphs 7.29 to 7.32, we do not consider different value segments as such to constitute distinct economic markets. Nor do we regard free-standing and built-in models as separate sub-markets for the purposes of this inquiry (see paragraph 7.27).

7.110. Refrigerators and freezers, on the other hand, appear at first sight to serve rather different functions, and whilst about one-half of all refrigerators incorporate a small freezer compartment, freezers on their own cannot be used as refrigerators. That said, these are essentially complementary products which can reasonably be argued to come within the same broad market for refrigeration. Parties to this inquiry did not suggest otherwise. Moreover, there is much commonality in supply. The technology, for example, is the same for both, and there is considerable potential for supply-side substitution: most suppliers and brands market both types of products, and indeed combine them in the case of fridge-freezers.

7.111. Taking CFS equipment as a unified and distinct market for the purposes of our inquiry, we consider that the overall demand for the products is likely to be influenced mainly by macro-economic factors, such as consumers' incomes, interest rates, consumer confidence, the age distribution of the existing stock of CFS equipment in use and the state of the housing market, as evidenced by the reduction in demand growth during the recent recession (see paragraph 7.112). However, demand is likely to be far less sensitive to price factors.

Sales and suppliers' market shares

7.112. Table 7.1 shows the quantity of sales of CFS products in the period 1985 to 1995, expressed as an index (with 1985 as the base year). As shown in the table, sales grew steadily during the late 1980s, to reach a peak in 1989. Sales fell back somewhat over the following two years, during the recession. But demand has since recovered strongly, and by 1995 unit sales were well above the pre-recession peak, and about 27 per cent greater than in 1985.

7.113. As shown in Table 7.5, total sales in 1995 were about 2.56 million units, at a retail value (including VAT) of £627 million (giving an average unit value across all the different models of about £245). Overall demand grew by around 13 per cent over the two years 1993 to 1995, with the average unit value of sales remaining broadly constant.

7.114. Also shown in Table 7.5 are the market shares (by quantity and value of retail sales) of the various brands and suppliers of CFS products, and also those of retailers' own-label products. As with the other reference white goods, we have chosen to measure suppliers' sales and market shares at the retail rather than supplier level (see paragraph 7.36), and market shares by value rather than quantity (see paragraph 7.37). The statistics do not separately identify sales to retailers by wholesalers but, as with the other reference white goods, such sales are limited and account for less than 5 per cent of the total. The wholesale sector is considered further in Chapter 8, which also gives details of suppliers and brands.

7.115. As shown in Table 7.5, the 15 largest suppliers and retailers' own-label brands (which between them sell 20 or so separate brands) together accounted for 95 per cent of sales in 1995, the other 5 per cent being divided among 25 or so smaller brands (some of which are owned by the larger suppliers). In 1995 the largest-selling brands with shares by value of more than 5 per cent were Hotpoint (GDA) with 19.9 per cent, Zanussi (Emaco) with 11.6 per cent, Lec (10.9 per cent) and Candy (6.2 per cent).

TABLE 7.5 **CFS products: UK market shares* of suppliers' brands and own-label brands, by quantity and value, in 1993, 1994 and 1995**

per cent

	1993		*1994*		*1995*	
Supplier/brand#	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
GDA						
Hotpoint	16.9	20.2	15.3	18.4	15.9	19.9
Creda	1.3	1.7	1.6	2.1	1.7	2.2
Total	18.2	21.9	17.0	20.6	17.6	22.1
Emaco						
Zanussi	11.9	14.6	12.0	14.6	9.4	11.6
Electrolux	4.6	6.2	3.8	4.9	4.2	4.9
Tricity Bendix	3.5	2.6	3.4	2.6	3.3	2.9
AEG ~	1.0	1.6	0.9	1.5	1.0	1.7
TotalÐ	21.8	25.8	21.2	24.8	18.2	21.4

Lec	10.3	6.7	11.5	8.5	15.1	10.9
Comet						
Scandinova	2.5	2.9	2.8	3.3	2.5	2.8
Blomberg	1.0	1.2	2.1	2.6	1.5	1.9
Proline	2.8	2.8	1.4	0.9	2.0	1.4
Totalð	6.6	7.2	6.5	6.8	6.6	6.7
Candy	4.8	5.0	5.6	5.5	6.1	6.2
*Bosch-Siemens*ß	1.5	3.3	1.6	5.7	2.7	5.1
of which Neff	0.3	0.7	0.4	0.9	0.6	1.2
Electra¥	5.1	5.2	4.5	4.4	3.7	3.6
Frigidaire	5.1	3.7	4.7	2.3	4.7	3.4
Beko	4.4	2.2	4.6	2.4	5.5	3.2
*Whirlpool***	4.0	5.5	3.7	4.4	2.8	3.2
Merloni##						
Indesit	3.5	2.7	2.6	2.0	1.8	1.3
Ariston	0.9	0.8	0.9	0.9	0.7	0.8
Total ~ ~	4.4	3.5	4.1	3.2	3.3	2.6
*Iceline*ÐÐ	6.0	4.3	6.4	4.4	3.3	2.5
Servis	0.6	0.6	1.4	1.2	2.1	1.7
*TSM/Groupe Brandt (Ocean)*ðð	0.2	0.3	0.7	1.1	1.2	1.7
Norfrost	3.1	1.5	3.0	1.5	2.8	1.4
Othersßß	3.7	3.3	3.6	3.2	4.1	4.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total sales¥¥ ('000/£m)	2,253.5	538.6	2,466.7	602.2	2,556.7	627.1
Average unit value (£)		239		246		245

Source: GfK, suppliers and MMC.

*Individual brand shares are subject to rounding effects and may not sum exactly to the total figures given.
#Suppliers and brands are ranked by market share by value in 1995.
~ Acquired in 1994-see paragraph 8.14
ÐIncludes sales by Vestfrost which is 50 per cent owned by AB Electrolux (the parent of Emaco)-see paragraph 8.14.
ðIncluding Kelvinator.
ßIncluding BSDA.
¥Electra is the own-label brand owned by the RECs-see paragraph 7.106.
**Including Whirlpool Bauknecht/Ignis.
##Including MDA.
~ ~ Including Philco.
ÐÐIceline is the own-label brand of Iceland.
ððSee paragraphs 8.40 to 8.42.
ßßIncludes Hygena (MFI's own-label brand; 0.9 per cent), Skandilux (0.6 per cent) and 23 other brands with shares of 0.01 to 0.5 per cent, such as Admiral, Asko, De Dietrich (Groupe Brandt), Eurotech, Goldstar, Homark, Liebherr, Miele, NEI, Nova Scotia (Dixons' own-label brand), Osprey and Onyx (AB Electrolux), Smeg, Snowcap and Thorn.
¥¥GfK data exclude Northern Ireland. The sales figures shown have been rounded up by 2.5 per cent to give an estimate for the UK as a whole. Sales value includes VAT, and quantity figures refer to the number of units sold.

7.116. In the same year, GDA (Hotpoint and Creda) was the largest supplier of CFS products, with a market share of 22.1 per cent (by value), 0.2 percentage points up on 1993. Emaco (Zanussi, Electrolux, Tricity Bendix and AEG) was the second largest with 21.4 per cent, which was 4.4 percentage points down on 1993. These two together accounted for 43.5 per cent of CFS product sales. Lec, which supplies CFS products only, was the third largest, with 10.9 per cent of sales, 4.2 percentage points up on 1993. Comet (with its Scandinova, Blomberg and Proline own-label products) was fourth with 6.7 per cent of sales, down 0.5 percentage points compared with 1993. In 1995 these four together accounted for 61.1 per cent of CFS product sales. Candy was the next largest supplier with 6.2 per cent of sales, 1.2 percentage points up on 1993. Others with more than a 1 per cent share were Bosch-Siemens (5.1 per cent, of which Neff accounted for 1.2 percentage points), Electra (own-label: 3.6 per cent), Frigidaire (3.4 per cent), Beko (3.2 per cent), Whirlpool (3.2 per cent), Merloni (2.6 per cent), Iceline (Iceland's own-label: 2.5 per cent), Servis (1.7 per cent) and Norfrost (1.4 per cent).

7.117. As mentioned earlier (see paragraph 7.106), retailers' own-label brands are of greater importance in this market than for other reference white goods. Comet's own-label brands (made by Groupe Brandt and Vestfrost (AB Electrolux)), the Electra brand, and Iceline brand (the latter two were both made largely by Candy) together accounted for about 12.8 per cent of sales of CFS products, though this was nearly six percentage points down on 1993. There are also many other smaller brands, often up-market and specializing in built-in models. Their individual market shares are tiny (0.2 per cent or less), though they maintained their collective share of sales between 1993 and 1995 at 6.2 per cent.

7.118. As indicated above, in the UK market for CFS products in 1995, the top three brands together accounted for 42 per cent of sales and the top four suppliers for 61 per cent, though there are also many smaller brands. The HHI, which is a measure of market concentration based on the market shares of all suppliers (see paragraph 7.41), was 1,235. We note that the merger guidelines currently used by the US competition authorities regard a market with an HHI of between 1,000 and 1,800 as `moderately concentrated'.

Market dynamics: innovation, new entry and price trends

7.119. As mentioned earlier, consumer demand and the rate of household ownership of CFS products in the UK is extremely high. The products themselves are not complex and the technology is relatively mature. Whilst suppliers continue to make incremental improvements (in energy efficiency and frost-free operation, for example), today's machines are technically much the same as say ten years ago (though CFCs[1] are no longer used), and suppliers told us that they did not envisage any major product innovations in the foreseeable future. As a result, the model life of CFS products is often around three to four years (though sometimes less). In common with the other reference white goods, new or replacement models incorporate relatively minor improvements, together with an updating or restyling of the external appearance.

7.120. On the manufacturing side, there are significant economies of both scope and scale, we were told, as with the other reference goods (see paragraph 7.43). As a result, some of the main suppliers in the UK market (Emaco/AB Electrolux in particular, but also Candy, Bosch-Siemens, Whirlpool and Merloni) are both multi-product suppliers and operate throughout the wider EU market. AB Electrolux (the parent of Emaco), for example, is the largest and accounts for around 20 to 24 per cent of CFS product sales in the EU, Bosch-Siemens for about 14 per cent, Whirlpool (WEBV) for around 12 per cent (having acquired Philips' white goods business in 1989-see paragraph 7.47), and Merloni about 5 per cent. GDA, on the other hand, has traditionally operated primarily in the UK market, and Lec makes only CFS products. Groupe Brandt is particularly strong in the French market and accounts for about 5 per cent of CFS product sales in the EU, though at present it is not well-represented in the UK market.

7.121. Scale economies and excess capacity appear to represent a significant barrier to entry by new producers both in the UK and also at the wider EU level. Nonetheless, as with the other reference goods (see paragraph 7.45), a new supplier entering the UK market would not necessarily need to establish additional production capacity. As with retailers' own-label products, a new supplier would almost certainly be able to obtain supplies either from existing manufacturers of branded products (for example, Candy manufactures for the Iceline and Electra brands, Vestfrost makes Comet's Scandinova own-label brand and Groupe Brandt and Vestfrost supply Comet's Proline brand) or unbranded, third party suppliers, the largest of which appears to be AMS (which supplies all Servis brand products).

7.122. Were entry to be attempted, existing suppliers in the EU which are not represented (or not well-represented) in the UK, such as Groupe Brandt, would be possible new entrants to the UK market. There is also a prospect, we were told, of more direct imports from low-cost European countries (Beko, for example, manufactures CFS products in Turkey; it entered the UK market in 1991 and now accounts for 3 per cent of sales by value, and over 5 per cent by volume), and also of new production investment in the UK from Far Eastern suppliers (for example, Daewoo), which at present face relatively high transport costs.

[1]Chemicals formerly widely used as refrigerants in CFS products but now replaced by other chemicals because of their effect on the ozone layer of the upper atmosphere.

7.123. As indicated earlier (see paragraph 7.106), we were told that in the CFS product market brand loyalty is not strong. Nonetheless, as also mentioned earlier (see paragraph 7.47), both Whirlpool and Ariston (MDA) told us that consumers' brand loyalty had proved to be the main difficulty in establishing their brands and expanding their market shares in the UK for white goods. Whirlpool further stated that other barriers included the `brand conservatism' and high concentration of UK retailers, and the discount structures offered to retailers by the established brands and suppliers (for example, the availability of retrospective `loyalty' rebates-see paragraphs 10.101 to 10.104).

7.124. As regards retail price trends for CFS products, some suppliers referred to `price deflation', in the sense that CFS product prices were declining in real terms, as with the other reference white goods. We considered the difficulties in comparing prices over time more fully in relation to washing machines in paragraphs 7.48 to 7.51. Our own evidence on the price histories of specific models of CFS products (see Chapter 11) indicates that suppliers' RRPs may go up as well as down during the life of any particular model, though the trend values appear to have been broadly stable in cash terms over the past two or three years. With general inflation in the UK economy running at 2 to 3 per cent a year over that period, this suggests that CFS product prices will have declined somewhat in real terms.

7.125. The ONS provided us with a separate index on CFS product prices, based on data (displayed rather than transaction prices) which it collects for the purposes of compiling the general RPI index (see paragraph 7.51). The ONS stated that this index should be used with caution, in part because it is based on relatively small samples. The index confirms that prices of CFS products have declined in real terms in recent years.

Retail markets

7.126. In this section, we examine the structure of UK retail markets for the four reference white goods. First, we provide estimates of the number of retail businesses and outlets which sold one or more of the reference white goods in 1995. This is followed by a description of the value and quantity of retail sales in 1995 handled by the larger individual retailers (for which data were available) and their market shares; the retailers concerned are described more fully in Chapter 9 and retailers' practices in relation to RRPs are dealt with in Chapter 10. Sales figures and market shares are also given for each retailer group or category, for example national multiples and the RECs. We then give an account of concentration in retailing at the national level, for both reference and other goods.

7.127. The reference goods are normally bought by consumers from retail outlets, including those which specialize in selling electrical goods and those which offer a variety of other goods, such as department stores, mail order companies, and other general retailers. We identified nearly 50 multiple retailers (both specialist and non-specialist chains, with five outlets or more) which sold at least one, and mostly all four, of the reference white goods in 1995 and about 3,600 small retailers.

7.128. Table 7.6 shows the number of businesses retailing one or more of the reference white goods in 1995, as well as the associated number of outlets. The data for multiple retailers are based on their responses to our postal questionnaires, while the figure for small retailers is an estimate based on the information obtained from our interviews of a sample of small retailers-see paragraphs 9.39 to 9.42. In all, we think that there were around 7,600 outlets run by specialist electrical retailers which sold one or more of the reference white goods. Of these, nearly one-fifth (1,478 outlets, including superstores) were operated by Dixons (trading under the name of Currys), Comet and the RECs (see Chapter 9) taken together. Other electrical specialist multiples accounted for 1,047 outlets (14 per cent), while we estimate that small retailers had around 5,100 outlets (many of which are small in terms of floor space). Non-specialist multiple retailers selling one or more of the reference goods, such as department stores, had 853 outlets in 1995, making the total number of outlets for reference goods nearly 8,500,

TABLE 7.6 **Number of retail businesses and outlets in the UK selling reference white goods in 1995**

	Number of businesses	*Outlets selling one or more of the reference white goods*
Multiple retailers		
Dixons	1	386
Comet	1	229
RECs	8	863
Other specialist multiples	22	1,047
Non-specialist multiple retailers	16	853
Total multiples	48	3,378
Small retailers (estimate)	3,600	5,100

Source: Retailers and MMC estimates.

Retailers' sales and market shares

7.129. UK market shares in 1995 of the larger individual retailers for which data were available are set out in Tables 7.7 (by value) and Table 7.8 (by quantity). In the following paragraphs, we describe briefly some of the features of the main retailers and the sectors within which they operate, including their sales of reference goods and market shares.

National multiples

7.130. During the course of our inquiries, there were two major electrical multiples, Dixons and Comet (see paragraphs 9.7 to 9.24), operating at a national level (albeit that Comet did not trade in Northern Ireland). As shown in Table 7.7, Dixons was by far the largest retailer, in terms of sales value, for each of the four reference white goods (with market shares up on 1993-see below), while Comet was the second largest. Dixons' and Comet's respective market shares by volume or quantity (see Table 7.8) were somewhat higher than by value. This means that the average sales value per unit (ie sales revenues divided by the number of units sold) was lower than that for the market as a whole, in part reflecting differences in the brand and product mix of the appliances sold. To an extent, this may also reflect sales of lower priced, retailers' own-label products. As explained earlier in this chapter and also below, Comet uses own-label brands for each of the four reference white goods. For CFS equipment, its own-label branded goods accounted for a substantial proportion of Comet's sales. Of the four reference white goods Dixons, by contrast, sells only CFS products under an own-label brand (Nova Scotia); these products accounted for only a relatively small proportion of its total sales of CFS equipment: As shown in Table 7.7:

- *Washing machines*. Dixons' market share (by value) of washing machine sales in the UK in 1995 was 18.4 per cent (up from 15.6 per cent in 1993); Comet had 10.3 per cent of the market-giving a combined figure for the two retailers of 28.7 per cent. The average value per unit sold was £317 for Comet and £343 for Dixons, both of which were lower than the average of £357 for the market as a whole. Comet's own-label brands, Blomberg and Proline, accounted for nearly 8 per cent by value of its total sales of washing machines.

TABLE 7.7 **Retailers' sales of reference white goods, and market shares by value, in 1995**

	Washing machines		*Tumble driers*		*Dishwashers*		*CFS equipment*	
*Retailers**	*Sales £m*	*Market share %*	*Sales £m*	*Market share %*	*Sales £m*	*Market share %*	*Sales £m*	*Market share %*
National multiples								
Dixons	115.1	18.4	18.2	19.7	26.7	18.4	104.7	16.7
Comet	64.7	10.3	10.1	10.9	14.7	10.2	80.2	12.8
Total	179.8	28.7	28.3	30.6	41.4	28.6	184.9	29.5
RECs								
Powerhouse	43.1	6.9	5.1	5.5	6.9	4.7	35.4	5.6
ScottishPower	41.0	6.5	6.5	7.1	6.5	4.5	37.0	5.9
NORWEB	35.8	5.7	5.1	5.5	5.3	3.7	30.6	4.9

Powerstore#	21.4	3.4	2.2	2.4	2.4	1.6	10.1	1.6
SEEBOARD	12.3	2.0	1.3	1.4	1.9	1.3	10.2	1.6
Northern Electric	7.5	1.2	1.2	1.3	0.9	0.6	7.3	1.2
SHE	5.3	0.8	0.9	1.0	0.8	0.5	3.7	0.6
NIER ~	3.2	0.5	0.8	0.8	0.8	0.6	3.2	0.5
Total	170.0	27.1	23.2	25.1	25.4	17.5	137.6	21.9
*Department stores and co-operatives*Ð								
JLP	22.4	3.6	3.5	3.8	7.6	5.2	21.9	3.5
Co-operatives	20.4	3.3	2.0	2.2	2.2	1.5	16.8	2.7
Allders	7.1	1.1	0.5	0.5	2.5	1.7	7.2	1.2
HoF	5.2	0.8	0.6	0.6	1.7	1.2	4.4	0.7
Total	55.1	8.8	6.6	7.1	14.0	9.6	50.3	8.0
Other electrical multiples								
Thorn-EMIð	6.3	1.0	0.9	0.9	0.9	0.6	2.7	0.4
Tempo	6.0	1.0	0.9	1.0	1.2	0.8	6.9	1.1
Other	3.3	0.6	0.8	1.0	1.0	0.6	2.9	0.5
Total	15.6	2.5	2.6	2.9	3.1	2.1	12.5	2.0
Mail order companies								
GUS	21.9	3.5	4.6	5.0	2.5	1.7	13.5	2.2
Littlewoods	17.0	2.7	3.0	3.3	1.1	0.8	8.7	1.4
Freemans	5.2	0.8	1.1	1.2	0.4	0.3	3.0	0.5
Empire	3.3	0.5	0.8	0.9	0.3	0.2	2.5	0.4
Grattan	3.2	0.5	0.6	0.6	0.3	0.2	1.9	0.3
Total	50.6	8.1	10.1	10.9	4.6	3.1	29.7	4.7
Non-electrical multiples								
MFI	3.3	0.5	0.2	0.2	10.3	7.1	13.8	2.2
Moben	0.4	0.1	0.0	0.0	1.6	1.1	1.5	0.2
Iceland	0.0	0.0	0.0	0.0	0.0	0.0	41.9	6.7
Total (including other non-electrical multiple retailers)	3.8	0.6	0.3	0.3	11.9	8.2	57.3	9.1
*Other retailers*ß	151.7	24.2	19.4	22.9	44.7	30.8	154.8	24.7
Total (£m/%)**	626.7	100.0	92.6	100.0	145.0	100.0	627.1	100.0

Source: MMC, based on data from multiple retailers, GfK and MMC's own estimates.

*Ranked within each category by the value of sales (including VAT) of washing machines and market share. Individual retailers' shares are subject to rounding and may not sum to the total figures given.

#MMC estimates, based on the number of units sold.

~ MMC estimates, based on sales for the first half of 1995, scaled up.

ÐIncludes CWS, CRS and other co-operatives-see paragraphs 9.50 and 9.51.

ðMainly sales by Rumbelows, which ceased trading in March 1995-see paragraph 9.24.

ßMainly small retailers, but including multiples not otherwise included and any other retail outlets not separately identified. Sales and market shares have been calculated as a residual, ie total market sales less those of the individual retailers and groups of retailers set out above.

**Based on GfK data-see Tables 7.2, 7.3, 7.4 and 7.5.

TABLE 7.8 **Retailers' sales (units sold) of reference goods, and market shares by quantity, in 1995**

Retailers*	*Washing machines* Sales '000	Market share %	*Tumble driers* Sales '000	Market share %	*Dishwashers* Sales '000	Market share %	*CFS equipment* Sales '000	Market share %
National multiples								
Dixons	336.0	19.2	119.0	21.4	84.5	20.1	454.1	17.8
Comet	203.8	11.6	66.4	11.9	50.6	12.1	478.2	18.7
Total	539.8	30.8	185.4	33.4	135.1	32.2	932.3	36.5
RECs								
Powerhouse	130.6	7.4	32.2	5.8	22.4	5.3	150.2	5.9
ScottishPower	112.0	6.4	40.0	7.2	19.9	4.7	138.0	5.4
NORWEB	109.7	6.3	35.2	6.3	17.7	4.2	128.0	5.0
Powerstore	57.0	3.2	11.4	2.1	7.1	1.7	39.5	1.5
SEEBOARD	36.4	2.1	8.0	1.4	5.7	1.4	41.3	1.6
Northern Electric	20.7	1.2	7.4	1.3	2.6	0.6	28.0	1.1
SHE	14.9	0.8	6.2	1.1	2.5	0.6	15.6	0.6
NIER#	11.5	0.7	5.6	1.0	3.5	0.8	16.4	0.6
Total	492.8	28.1	146.0	26.3	81.3	19.4	557.1	21.8
Department stores and co-operatives ~								
Co-operatives	57.9	3.3	12.4	2.2	6.9	1.6	72.7	2.8
JLP	50.9	2.9	14.1	2.5	19.7	4.7	72.7	2.8
Allders	19.9	1.1	3.2	0.6	7.1	1.7	22.4	0.9
HoF	11.0	0.6	2.2	0.4	4.4	1.0	12.0	0.5
Total	139.7	8.0	31.9	5.7	38.1	9.1	179.8	7.0
Other electrical multiples								
Thorn-EMIÐ	30.0	1.3	6.8	1.2	4.2	1.1	14.8	0.6
Tempo	17.9	1.0	6.0	1.1	3.6	0.9	31.0	1.2
Other	8.7	0.5	6.4	1.1	2.5	0.5	10.5	0.4
Total	56.6	2.8	19.2	3.4	10.3	2.5	56.3	2.2
Mail order companies								
GUS	61.2	3.5	24.8	4.5	7.4	1.8	49.3	1.9
Littlewoods	48.8	2.8	17.2	3.1	3.1	0.7	31.1	1.2
Freemans	14.2	0.8	6.4	1.2	1.1	0.3	11.4	0.4
Empire	9.3	0.5	4.8	0.9	0.9	0.2	9.5	0.4
Grattan	8.8	0.5	3.2	0.6	0.7	0.2	7.1	0.3
Total	142.3	8.1	56.5	10.2	13.3	3.2	108.4	4.2
Non-electrical multiples								
MFI	9.9	0.6	1.2	0.2	26.9	6.4	68.3	2.7
Moben	0.8	0.0Ð	0.0	0.0	6.4	1.5	6.2	0.2
Iceland	0.0	0.0	0.0	0.0	0.0	0.0	224.9	8.8
Total (including other non-electrical multiple retailers)	10.8	0.7	2.1	0.4	33.3	7.9	299.6	11.7
*Other retailers*ð	372.1	21.6	114.6	20.6	107.9	25.7	423.2	16.5
Total (`000/%)ß	1,754.1	100.0	555.7	100.0	419.4	100.0	2,556.7	100.0

Source: MMC, based on data from multiple retailers, GfK and MMC's own estimates.

*Ranked within each category by the quantity of sales of washing machines and market share. Individual retailers' shares are subject to rounding and may not sum to the total figures given.

#MMC estimates, based on sales for the first half of 1995, scaled up.

~ Includes CWS, CRS and other co-operatives-see paragraphs 9.50 and 9.51.

ÐMainly sales by Rumbelows, which ceased trading in March 1995-see paragraph 9.24.

ðMainly small retailers, but including multiples not otherwise included and any other retail outlets not separately identified. Sales and market shares have been calculated as a residual, ie total market sales less those of the individual retailers and groups of retailers set out above.

ßBased on GfK data-see Tables 7.2, 7.3, 7.4 and 7.5.

- *Tumble driers*. Dixons' share by value of retail sales of tumble driers in the UK in 1995 was 19.7 per cent (compared with 16.9 per cent in 1993); Comet had 10.9 per cent of the market, giving a combined figure for the two of just over 30 per cent. The average unit value was £153 for both Comet and

Dixons, 8 per cent lower than the market average of £167. Blomberg, Comet's own-label brand, accounted for a relatively small proportion (1 to 2 per cent) of its sales of tumble driers.

- *Dishwashers*. Dixons' 1995 share by value of dishwashers in the UK was 18.4 per cent (up from 10.8 per cent in 1993); Comet's share was 10.2 per cent. The combined figure for the two retailers nearly 29 per cent. The average unit value was £292 for Comet and £316 for Dixons, in both cases lower than the market average of £346. Comet's own-label brands, Blomberg and Proline, accounted for about 11 per cent (by value) of its 1995 dishwasher sales.

- *CFS equipment*. Dixons' 1995 share by value of UK sales of CFS equipment was 16.7 per cent (up from 11.1 per cent in 1993); Comet's share was 12.8 per cent-a combined figure for the two retailers of nearly 30 per cent. The average unit value was £168 for Comet and £231 for Dixons-both lower than the market average of £245. Comet's own-label brands (Scandinova, Blomberg, Proline and Kelvinator) together accounted for just over one-half (52 per cent by value) of its 1995 sales of CFS products; by contrast, sales of Nova Scotia, Dixons' own-label brand, accounted for 1 to 2 per cent of Dixons' CFS products.

The RECs

7.131. The RECs have been undergoing a continuing process of consolidation and closures in the past few years, as described more fully in paragraphs 9.25 to 9.34. In 1995, there were eight RECs in the UK (down from 15 in 1990), each of which sold all of the reference white goods. Four of these-Northern Electric, SEEBOARD plc (SEEBOARD), Powerhouse and Powerstore (now in administration)-operated stores in England only. All of the outlets of NIE were located in Northern Ireland, while ScottishPower and SHE outlets were mainly in Scotland, though ScottishPower also owned and operated electrical stores in England. NORWEB, which was taken over by Comet in 1996, operated in England and Wales. The three largest RECs-NORWEB, Powerhouse and ScottishPower-between them accounted for over 70 per cent (by value) of all REC sales of the reference white goods in 1995. As shown in Table 7.7, the RECs, Comet and Dixons taken together handled about one-half of all sales of each of the reference white goods, and also, therefore, made a comparable proportion of purchases from suppliers:

- *Washing machines*. In 1995 over one-quarter of washing machine sales by value (27.1 per cent) were handled by the RECs. Powerhouse was the third largest retailer of washing machines overall, with a market share of 6.9 per cent, while ScottishPower (6.5 per cent) was fourth largest, and NORWEB was fifth, with 5.7 per cent. The RECs' Electra own-label brand (see paragraph 7.40) accounted for about 20 per cent of the RECs' sales of washing machines in 1995.

- *Tumble driers*. The RECs in aggregate had one-quarter of the tumble drier market by value in 1995. ScottishPower was the third largest retailer overall of tumble driers, with a market share of 7.1 per cent. Powerhouse and NORWEB were equal fourth, each with a market share of 5.5 per cent. A relatively large proportion of the RECs' sales of tumble driers in 1995 (about 30 per cent) were of the Electra brand.

- *Dishwashers*. Some 17.5 per cent of sales by value of dishwashers were accounted for by the RECs in 1995. Powerhouse was the fifth largest retailer of dishwashers, with a market share of 4.7 per cent. Next was ScottishPower with 4.5 per cent and NORWEB with 3.7 per cent. The Electra brand accounted for about 5 per cent of the RECs' dishwasher sales.

- *CFS equipment*. About one-fifth (21.9 per cent) of CFS products were sold by the RECs in 1995. ScottishPower was the fourth largest retailer of these goods, with a share of 5.9 per cent, while Powerhouse (5.6 per cent) was next largest, followed by NORWEB with 4.9 per cent. For the RECs as a whole, their Electra brand was responsible for about 16 per cent of their total sales of CFS products.

Department stores and co-operatives

7.132. As shown in Table 7.7, the principal retailers in this category were the co-operatives (ie, retailer co-operatives, including the CWS and CRS) and department stores JLP, Allders and House of Fraser (HoF) (Debenhams no longer sells reference goods-see paragraph 9.46):

- *Washing machines*. The retailers in this category collectively had 8.8 per cent of the UK market by value in 1995; JLP's sales (3.6 per cent) were the largest of the group, followed by the co-operatives (3.3 per cent), Allders (1.1 per cent) and HoF (0.8 per cent). The average unit value of sales by HoF (£473) was almost one-third higher than for the market as a whole (£357); JLP's average unit value (£440) was nearly one-quarter higher than the market average.

- *Tumble driers*. The department stores and the co-operatives in this category together had 7.1 per cent of the market in 1995, with JLP accounting for 3.8 per cent, the co-operatives for 2.2 per cent, HoF for 0.6 per cent and Allders 0.5 per cent. The average value per unit sold for both HoF (£273) and JLP (£248) was higher (by 63 per cent and 49 per cent respectively) than the market average (£167). For Allders, the average unit value (£156) was 7 per cent below the average.

- *Dishwashers*. The combined market share of the three department stores and the co-operatives was to 9.6 per cent in 1995. The largest of these was JLP (5.2 per cent-fourth largest market share overall), followed by Allders (1.7 per cent), the co-operatives (1.5 per cent) and HoF (1.2 per cent). The average unit value of sales was £386 for both HoF and JLP, over one-tenth higher than for the market as a whole (£346).

- *CFS equipment*. The three department stores and the co-operatives accounted for 8.0 per cent of the market in 1995, with JLP at 3.5 per cent, the co-operatives at 2.7 per cent, Allders at 1.2 per cent and HoF at 0.7 per cent. The average unit value of sales at Allders (£321), HoF (£367) and JLP (£301) were between one-quarter and one-half higher than the market average (£245).

Other electrical multiples

7.133. This category is made up of electrical (specialist) multiple retailers which sold one or more of the reference white goods in 1995, and for which relevant data were available. As well as smaller regional multiples, it includes Tempo and Thorn-EMI (whose sales were mainly by Rumbelows, which ceased trading early 1995-see paragraph 9.24-but which appears in Tables 7.7 and 7.8 because it made sales in the first quarter of 1995). A high proportion of Thorn-EMI's sales of tumble driers and dishwashers were under its Thorn own-label brand as shown in Table 7.7:

- *Washing machines*. The category, `other electrical multiples' accounted for 2.5 per cent (by value) of the market for washing machines in 1995. Thorn-EMI and Tempo each had 1.0 per cent of the market, followed by a group of other smaller multiple retailers which together were responsible for 0.6 per cent of sales. Thorn-EMI's own-label brand of washing machines (Thorn) accounted for about 7 per cent of its sales by value in 1995.

- *Tumble driers*. The market share (by value) of sales of tumble driers of this category in 1995 was 2.9 per cent. Tempo (1.0 per cent) had the largest market share, followed closely by Thorn-EMI (0.9 per cent). Own-label products amounted to about 48 per cent of Thorn-EMI's sales of tumble driers in 1995.

- *Dishwashers*. The `other electrical multiples' category had a market share of 2.1 per cent of sales by value of dishwashers in 1995. The largest retailer in the group was Tempo (0.8 per cent), followed by Thorn-EMI (0.6 per cent). About 40 per cent of Thorn-EMI's sales were own-label products.

- *CFS equipment*. The market share of sales by value of CFS products of the category in 1995 was 2.0 per cent. Tempo had a share of 1.1 per cent, followed by Thorn-EMI (0.4 per cent). A small proportion of Thorn-EMI's sales (4 per cent) were its own-label products.

Mail order companies

7.134. Sales and market shares for these retailers (see Table 7.7) were as follows:

- *Washing machines*. The five mail order companies described in paragraph 9.60 together accounted for 8.1 per cent of the market for washing machines in 1995. GUS had the largest share with 3.5 per cent by value, followed by Littlewoods (2.7 per cent), Freemans (0.8 per cent), Empire (0.5 per cent) and Grattan (0.5 per cent).

- *Tumble driers*. The 1995 market share of the five mail order companies was 10.9 per cent. GUS with 5 per cent was the fifth largest retailer of tumble driers overall. Littlewoods' share was 3.3 per cent, followed by Freemans at 1.2 per cent, Empire at 0.9 per cent and Grattan at 0.6 per cent.

- *Dishwashers*. The five mail order companies together accounted for 3.1 per cent of the market for dishwashers in 1995. GUS was the largest mail order company with 1.7 per cent, followed by Littlewoods (0.8 per cent), Freemans (0.3 per cent), Grattan and Empire (0.2 per cent each).

- *CFS equipment*. The combined market shares of the five mail order companies for CFS products came to 4.7 per cent in 1995. GUS had the largest share at 2.2 per cent, followed by Littlewoods (1.4 per cent), Freemans (0.5 per cent), Empire (0.4 per cent) and Grattan (0.3 per cent).

Non-electrical multiples

7.135. This category contains other retailers with multiple outlets which are not electrical specialists but which stock one or more of the reference white goods, the main such retailers being Magnet, MFI and Moben, which offer electrical appliances as part of their fitted kitchen furniture range. In addition, the category includes Savacentre and Iceland, which is mainly a frozen-food retailer but has for many years sold CFS equipment (mainly freezers and fridge-freezers). The collective shares of sales by value in 1995 for this category (see Table 7.7) were 0.6 per cent of washing machines and 0.3 per cent for tumble driers. The share of dishwasher sales for this group was 8.2 per cent, with MFI accounting for 7.1 per cent (making it the third largest UK retailer of dishwashers) and Moben at 1.1 per cent. For CFS products, this category accounted for 9.1 per cent of the market in 1995. Iceland at 6.7 per cent (was the third largest UK retailer overall of CFS products; MFI's share was at 2.2 per cent. Iceline, Icelands' own-label brand (see paragraph 7.117), accounted for 37.3 per cent of its sales.

Other retailers of electrical goods

7.136. As explained in Tables 7.7 and 7.8, this group comprises:

(a) a large number of small retailers, each with four outlets or less;

(b) a small number of multiple retailers (both electrical specialists, such as Miller Bros (Doncaster) Limited (Miller Bros), and non-electrical specialists) which have either not provided sales data or which stated that they could not provide such data for the reference white goods which they sell; and

(c) any other retailers of reference white goods not otherwise identified.

7.137. In 1995, this group of retailers accounted for 24.2 per cent by value of UK sales of washing machines, 22.9 per cent of tumble drier sales, 30.8 per cent of dishwasher sales, and 24.7 per cent of CFS product sales (see Table 7.7). We estimate that the multiples in this group handled around 6 per cent of the total sales of each of the reference white goods. It follows, given the likelihood that unidentified retailers are quantitatively of little significance, that most of the sales by this group were made by small retailers.

Levels of retailer concentration

7.138. Data on levels of retailer concentration for the four reference white goods are set out in Table 7.9 (the data relate to the UK as a whole-concentration rates at local and regional levels are not available, but may be higher). As shown in the table, the market share by value of the four largest retailers taken together (CR4) was 42 per cent for washing machines and CFS equipment, 43 per cent for tumble driers and 41 per cent for dishwashers.

TABLE 7.9 **UK retailers of reference goods: 1995 concentration measures**

per cent

	Washing machines	*Tumble driers*	*Dish-washers*	*CFS equipment*
CR2	29	31	29	30
CR4	42	43	41	42
CR5	48	49	46	48
CR10	63	65	59	63

Source: GfK, retailers and MMC.

7.139. For purposes of comparison, Table 7.10 shows 1993 concentration ratios for the five largest enterprise groups (CR5) engaged in various types of retail activity. The CR5 for retailing as a whole (excluding rental) was 23 per cent, with the five individual sectors listed ranging from 21 per cent (repair activities) to 39 per cent (food, drink and tobacco). The CR5s for the four reference white goods were uniformly higher, as Table 7.9 indicates. At the more detailed level of the 39 commodity groups which go to make up these five broad sectors, nine[1] had a higher CR5 value than for washing machines, dishwashers and CFS equipment, and six a higher value than for tumble driers. Other products which share some of the characteristics of the four reference white goods (ie `big ticket' items which are purchased relatively infrequently) are domestic furniture, for which the CR5 was 21 per cent (the same as that for floor coverings) and audio/visual equipment (including home computers), where the CR5 was 32 per cent.

TABLE 7.10 **Concentration in UK retailing in 1993**

	*Total market**	*Five largest enterprise groups*		*Ten largest enterprise groups*	
Retail sectors	*£b#*	*£b*	*%*	*£b*	*%*
Food, drink and tobacco	62.8	24.6	39.3	33.1	52.8
Clothing, footwear and leather goods	22.3	7.6	34.1	10.1	45.4
Household goods retailing	29.1	6.1	20.9	8.9	30.5
Of which:					
Domestic furniture	4.1	0.9	21.3	1.3	30.8
Domestic electrical appliances ~	2.9	1.1	39.3	1.6	53.6
Audio and visual equipmentÐ	4.0	1.3	31.6	1.7	42.2
Floor coveringsð	2.1	0.5	21.0	0.6	28.8
Other, non-food retailing	33.6	8.0	23.8	11.1	33.0
Repair activities	0.3	0.1	20.7	0.1	28.4
		46.4		63.3	
Total (excluding rental)	148.0	34.5	23.3	50.1	33.9

Source: Business Monitor (ONS).

*Figures on the value of the total market *exclude* the rental sector throughout, but those on individual sectors relating to the five and ten largest enterprise groups *include* the rental sector.

#Owing to rounding, value figures in the total market column do not sum exactly to the total given, and market share figures may appear to be different from those given.

~ Includes power tools.

ÐIncludes televisions, radios and home computers.

ðIncludes carpets, rugs and tiles.

[1]Fruit and vegetables (51.2 per cent); fish (58 per cent); other food (47.9 per cent); perfumes, cosmetics and toiletries (52.2 per cent); domestic gas appliances (80.7 per cent); audio and visual tape (62.1 per cent); decorators and DIY suppliers (47.9 per cent); photographic and optical goods (48.4 per cent); and wallpaper (49.2 per cent).