

# 11 Price analyses and histories

## Contents

	<i>Page</i>
Introduction .....	122
RRPs and consumer prices .....	123
The pricing data .....	123
The sample period, models chosen and RRP data .....	124
Price distributions .....	125
Statistical measures .....	129
Pricing analysis of televisions .....	130
Price distribution data .....	130
Price history analysis .....	134
Pricing analysis of VCRs .....	136
Price distribution data .....	136
Price history analysis .....	139
Pricing analysis of hi-fi systems .....	141
Price distribution data .....	141
Price history analysis .....	144
Pricing analysis of camcorders .....	145
Price distribution data .....	145
Price history analysis .....	149
Comments by suppliers and retailers on the pricing studies .....	150

## Introduction

11.1. Drawing on evidence from both suppliers and retailers, the previous chapter set out the main influences on the pricing of the four reference brown goods, and in particular the various suppliers' practices associated with establishing and promulgating RRPs. In this chapter we explain the pricing analyses we carried out, where the primary focus was on the relationship between suppliers' RRPs and retail prices, ie the prices offered by retailers (advertised and displayed prices) and the prices actually paid by consumers in retail shops (transaction prices).

11.2. We start, in paragraphs 11.4 to 11.36, by explaining in some detail the main characteristics of the pricing data obtained and the nature of our analyses, which were largely the same for all four reference goods. We then consider, in separate sections, the data applying to each of the reference brown goods—televisions, VCRs, hi-fi systems and camcorders. More particularly, for each of the four products, we provide details and explain the main features of the price distributions obtained from a sample of 12 individual models (televisions, for example, are considered in paragraphs 11.37 to 11.53). For three models, we also set out what we have called price histories, which include details of RRPs over the life of these particular models. We have used comparable data and the same form of analysis for each of the four goods, in recognition of the fact that we have four separate references.

11.3. The RRPs referred to in this chapter are those applying to sales through retail outlets; MORPs are the subject of separate examination (see Chapter 10). The nature of the products, consumer demand, structural characteristics in both supply and retailing, and also the evidence on price trends are considered in Chapter 7. The views and comments of suppliers and dealers are summarized in Chapters 13 and 14 respectively; comments relating to our pricing analyses are included in this chapter.

## **RRPs and consumer prices**

### ***The pricing data***

11.4. Our analyses of retail prices for the reference goods and of their relationship with suppliers' RRP has been based on data provided by GfK. The data consist mostly of transaction prices, ie the net price paid by customers at the point of sale, rather than retailers' advertised or displayed prices. As explained below, these data are derived from EPOS systems used by the larger retailers. For small retailers, the data used are ticket prices observed in the store. In subsequent sections of this chapter the price information collected is considered separately for each of the four reference brown goods. In each case, the data are presented in the form of summary tables and also in bar chart or diagrammatic form (in Figures 1 to 47 in Appendix 11.1), where each chart indicates the volume of sales within given £5 price bands for a particular model and the main features of the price distribution.

11.5. Before undertaking these analyses, we considered the use of various types and sources of pricing information, including those available from market research companies. Some sources, for example Beyen (UK) Ltd (Beyen)-see paragraphs 11.46 on televisions and 11.75 on VCRs-rely on advertised prices and the model coverage is often restricted, whilst others, for example IFR (UK) Ltd, are based on retailers' displayed prices, with the data being collected for a limited number of models through a small sample of retailers. We chose to use GfK as our source because, whilst not ideal in all respects, the data best suited our purposes and were also widely used and well regarded by suppliers themselves. The GfK data are also the most comprehensive available, in that they include virtually all the different models of reference goods on sale within the UK market, with sales volumes and prices pertaining to individual models.

11.6. The GfK retailer base includes virtually all the major retailers and mail order companies operating within Great Britain (data are not collected in Northern Ireland). For these retailers, the pricing data assembled are based on actual transaction prices for each model, as recorded by the retailers themselves on their EPOS systems, though for each individual store they are passed over to GfK on a weekly average basis (the prices for individual models are calculated as total weekly sales revenues divided by the total weekly number of sales, with both sets of figures being net of returned goods). At Appendix 11.2 we list all the retailers which, we understand, provided EPOS data on the reference goods to GfK during the sample period (February/March 1995); it follows that of the four retailers/groups of retailers for which we obtained separate sales data (see Tables 11.2, 11.4, 11.6 and 11.8), the first three recorded sales through EPOS, whilst for the fourth ('other retailers'), this was partially the case (paragraph 11.8).

11.7. The EPOS price observations based on these data include and reflect sales where customers had negotiated a discount off the retailer's displayed price ('in-store' negotiated discounts); sales made at a staff discount; sales of ex-display and damaged or repaired goods; as well as sales of end-of-line products (see paragraphs 11.16 to 11.28 and 11.31 for further explanation). The consequences of the inclusion of these sales in the weekly averaged data are considered in paragraphs 11.29 and 11.30.

11.8. As mentioned in paragraph 11.6, some of the figures relating to 'other retailers' (typically department stores such as JLP and the smaller multiple retailers such as Tempo) are based on EPOS data in the same way as for the major retailers. For the smaller retailers without EPOS systems, GfK's data are collected from a representative panel of about 440 retailers (including photographic specialists), of which 415 sold reference brown goods. These data are derived from GfK's monthly manual audit of retailers' displayed prices and sales volumes estimated by GfK from retailer information on deliveries and changes in stocks. The data collected are grossed up by GfK using a series of weighting factors in order to estimate figures for the 'other retailers' sector as a whole, of which these non-EPOS retailers account for the major part. Because they are based on displayed prices, these data do not include sales made at other prices (for example, those made at staff discounts, or at prices reduced as a result of bargaining, or sales of ex-display and damaged or repaired goods).

## ***The sample period, models chosen and RRP data***

11.9. The time-span chosen for our pricing study was the five-week period between 19 February and 25 March 1995. In terms of general timing, this was considered by GfK and ourselves to be a suitable period, largely because it was close but prior to the start of our inquiries and outside retailers' traditional sales periods (January and July). It was also consistent with GfK's usual data collection periods, which was a necessary condition because we had to rely on figures already obtained by GfK for its own commercial purposes. Taking a longer period for the study would have offered some advantage through covering a larger proportion of total market sales. Against that, however, it would have been likely to exacerbate the difficulties associated with model changes and product obsolescence, difficulties which we consider further below. In any event, as already mentioned, we augmented our analysis of retail prices with separate analyses of what we have termed the price histories of selected models (see, for example, paragraphs 11.54 to 11.67 on televisions).

11.10. The product sample used was initially aimed at the top three best-selling models of each of the top four suppliers of each of the reference goods (based on GfK data on total sales). It seemed to us that there was merit in concentrating on models which were most popular with consumers, though retailers' own-label products—which are also popular, except for camcorders—were excluded because suppliers' RRPs do not apply. The models covered were also intended to be fully current models and not subject to changes in RRPs during the sample period (February/March 1995). In a few instances, the models initially selected did not satisfy these criteria and were replaced with others. In the event, however, and other than for televisions, it proved difficult to satisfy these criteria, because model lives are only about 12 months or so. Reflecting this, a significant number of the best-selling models of reference goods, especially camcorders, included in the final sample proved to be at the end of their product lives and about to be replaced.<sup>1</sup> Additionally, one model (the Technics SCCH 510 hi-fi system: see Figure 31 in Appendix 11.1) was subject to a £50 reduction in the RRP during the sample period. Nevertheless, in order to maintain the focus of the study on best-selling models, we decided not to make further changes, but have explained in the summary tables which models were affected by either product obsolescence or other special factors, and how we treated the data for the one model where the RRP was adjusted during the sample period. During the study, one model of camcorder (the Samsung VP-U10) was excluded from the pricing analysis because we were advised by GfK that the data were not sufficiently reliable for our purposes (see paragraphs 11.139 and 11.140).

11.11. The fact that we aimed only to use best-selling models was criticized by a few suppliers (for example, Aiwa) on the grounds that the retail prices for such models were likely to be highly visible and well known to both consumers and retailers and that, as a result, they would not be expected to vary much between retailers. On the other hand, it could be argued that if prices were indeed well known, price discounters might be encouraged to be particularly active, because they would be more likely to attract customers to their stores and increase their sales. In practice, and reflecting both the initial model selection process and the above exclusions, some of the models in our sample fell well outside the top 12 best-sellers (the Mitsubishi CT21M, for example, was the 22nd biggest-selling model of television at the time).

11.12. Information on the RRPs which were current during the sample period was provided by the relevant suppliers of reference goods, which in practice (as explained in Chapter 10) often use different terms, typically 'SRP' (suggested retail price) or 'MRP' (manufacturer recommended price). For all models in our analyses, we use the term 'RRP' to mean the retail selling price effectively recommended or suggested by the supplier during the sample period, whatever the description of that price used by the particular supplier concerned. In some instances, the RRP may be permanently reduced at some point during the life of the product, in order to 'reposition' the product and increase its competitiveness (an example, concerning the Mitsubishi CT21M television, is described in paragraph 11.60).

11.13. More commonly, however, the RRP may be a supplier 'promotional' price or temporary, special offer price (see Table 11.1, for example, with regard to the Mitsubishi televisions included). Such promotional prices may in some instances be shown on suppliers' general price lists (see Appendix 10.2) as a reduced RRP, or retailers may be informed separately, for example through 'update' price lists or by suppliers' sales representatives (see Chapter 10). From the evidence we have seen, suppliers' sales or price promotions commonly involve a temporary reduction (often for a month or so) in the RRP combined with

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<sup>1</sup>Only one television model was end-of-line, but four of the VCR models came into that category, as did five of the hi-fi systems and seven of the camcorders.

what many suppliers term a 'sales-out' allowance<sup>1</sup> to retailers (in the form of a lump sum per unit sold, paid retrospectively on future invoices-or sometimes, JVC told us, in the form of credit notes which dealers can exchange for cash), which at least roughly maintains the retailers' percentage gross margin. An example is described in paragraph 11.65 (a Toshiba television).

11.14. Retailers themselves may refer to suppliers' RRP's on their point-of-sale material or in advertisements. As stated in paragraph 10.37, however, many of the larger retailers, including Dixons, Comet, Miller Bros and JLP, do not mention RRP's on their point-of-sale price tickets, though Dixons and Comet agreed that in practice their ticket prices normally coincided with suppliers' RRP's.

### ***Price distributions***

11.15. Figures 1 to 47 in Appendix 11.1 show the observed retail price distributions for the models in our sample of each of the reference brown goods. The bar charts indicate the number of observations within £5 bands, where each band is designated by the lower bound. For example, the £295 band includes all price observations between £295.00 and £299.99.<sup>2</sup> The data include sales by all retailers other than mail order companies and Rumbelows, which withdrew from the market during the sample period. Mail order companies were omitted because suppliers often indicate different (and usually higher) RRP's for sales through mail order; we have carried out a separate study of this sector (see paragraphs 10.85 to 10.104). In the case of Rumbelows-the third largest multiple retailer-we were advised that Rumbelows' pricing data just prior to its withdrawal might have been less than fully reliable. Moreover, its pricing behaviour was likely to have been influenced by its imminent closure, though any indirect effects with respect to intensifying high street competition, and thus on the prices charged by other retailers, are reflected in the data. (As mentioned in paragraph 9.24, the intended closure of Rumbelows was announced on 7 February 1995. Branch closures began soon afterwards and most had ceased operating by 31 March 1995.)

11.16. The price distributions show a range of prices around RRP's, though typically there are many more observations below than above RRP's. The observations below RRP's include sales where the retailer's display price was lower than the RRP (possibly as a result of an explicit discount from the RRP) and also, for the EPOS-based data, where there were in-store, one-off discounts. The latter may arise for a number of reasons, for example as a result of a retailer 'price matching' other local retailers at the request of would-be buyers; or because the buyer haggled with the retailer on other grounds and successfully bargained down the price.

11.17. Some suppliers (for example, Sony, JVC and Panasonic) claimed that the granting of such discounts was widespread, particularly among smaller retailers. A consumer survey commissioned from GfK by Sony (see paragraph 7.17) asked a sample of about 300 actual and prospective consumers 'Would you try or have you ever tried to secure additional discount when buying an electrical product?' In response, 44 per cent of the sample said that they had tried and had been successful, 13 per cent said that they would try, 10 per cent said that they had tried but were unsuccessful and 33 per cent said that they either would not or had not tried to get a discount. In the same survey, in response to the statement 'There is very little real competition between electrical retailers', 41 per cent said that they agreed and 58 per cent said that they disagreed.

11.18. Panasonic told us that in-store bargaining by consumers and the subsequent granting of discounts by small retailers was commonplace. We asked Panasonic for any evidence it might have in support of its view. Panasonic said that although it did not normally receive indications of transaction prices, ie the prices paid by consumers to dealers, it was able to provide details of some of the recorded transaction prices on Panasonic models of reference brown goods obtained as part of a sales promotion it had undertaken in October to December 1992. Using these data, we examined the recorded transaction prices of a sample of ten models (two or three models of each of the four reference goods). In most instances, the prices recorded were

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<sup>1</sup>Increasingly less common are 'cash-back' promotions where the RRP at the point of sale is not changed but the purchaser may claim back a cash sum from the supplier. Effectively, therefore, the RRP is reduced by that amount when the claim is met but the retailer's buying price and gross margin are unaffected. We were told that such promotions were costly to administer and that purchasers often did not claim if the cash-back sum was below £30.

<sup>2</sup>RRP's and displayed prices are usually set 1p below a multiple of £50 or £100 for televisions, VCRs and camcorders, or £10 for hi-fi systems. These are called 'price points' or 'charm prices'. Dixons said that retailers adopt them because 'emotion transcends intellect', so that the charm price is felt to be significantly less than the neighbouring round sum.

relatively highly clustered (their covars-see paragraph 11.36-were mostly below 5.0) and modal price bands (see paragraph 11.33) were at the RRP. In relatively few cases, prices were below the RRP, whilst for others they were above. Commenting on these findings, Panasonic stated that 'The information was not submitted, and cannot be validly used, to show the *scale* of consumer price negotiations (as the MMC has attempted to do in this paragraph). The information was submitted merely to show (which it does) that in-store negotiations do take place.'

11.19. The evidence from major retailers (see Chapter 10) appears to suggest that in-store, negotiated discounts are in practice not common for individual product purchases, and together with other types of discounts amounted to 1 to 2 per cent of total sales revenue (see paragraph 11.28(b)). Verdict also commented on consumer haggling and the granting of in-store discounts, and told us that, in its own experience, such activity was on such a small scale as to be relatively irrelevant. In its September 1994 report 'Television and VCR Prices', Verdict stated that: 'A main conclusion of our report is that prices between retailers for televisions and VCRs vary very little for those products most recently manufactured. On commonly available models, retail prices are generally universal. Even in cases where a retailer diverges from the market norm, the saving to the customer is usually marginal.'

11.20. Similarly, CA told us that its own surveys, as published in the *Which?* magazines of May 1995 and June 1996 (CA also collected price information for its 'best buy' evaluation of camcorders published in the December 1996 issue of *Which?*), indicated that displayed prices for reference goods varied little between retailers (see paragraphs 11.45 with regard to television prices, 11.74 on VCR prices, 11.99 on hi-fi systems and 11.123 on camcorders). It added that, although offers by retailers to 'price-match' others were common, its evidence suggested that consumers tended to pay the displayed (ticket) price and generally did not haggle with retailers for additional, in-store discounts.

11.21. Price competition may also take the form of a discount on multiple or combined purchases of the reference goods. By way of example, retailers may offer (or be willing to grant) a discount, reflecting the relatively high value of sales involved, for combined (or package) purchases: a television combined with a VCR is a common example. Where the package includes products from different suppliers, any such discount is likely to reflect retailer-initiated price competition. Where the goods are those from a single supplier, however, the discount offered may be, and often is, initiated and determined by the supplier. In these cases, the after-discount offer price is essentially the supplier's RRP for the television/VCR package and the offer is therefore likely to be available in all retail outlets stocking the relevant ranges (an example is given in paragraph 11.61-a Mitsubishi television/VCR package).

11.22. In the GfK data based on EPOS, some of the sales of individual products (for example, televisions) will reflect the discounts provided on such package sales, though it is not possible to determine how the discount has been apportioned by the retailer to each of the products concerned. For example, when the price of the package deal is entered into the till, there are three main ways in which the sale may be recorded, each of which has the effect of creating additional errors, or at any rate 'noise', in the data:

- (a) it may be entered as a single purchase of a high-priced television (or VCR), giving rise to a high-price outlier in the distribution (for example, a television apparently sold at £100 or more above the RRP);
- (b) the reduction in cost for the two products may have been allocated to just one of them, resulting in a low-price outlier (for example, £50 or more below the RRP); or
- (c) the discount may be divided (evenly or otherwise) between the two products.

11.23. GfK advised that the data on television/VCR package sales which it received from Comet and Dixons was already split between televisions and VCRs and that it was not aware of the allocation basis adopted. If, for other EPOS data, GfK receives such a package price, it allocates the price reduction between the television and VCR pro rata with what GfK considers the usual prices to be when the two items are sold separately. Because the retail prices of the televisions in such packages are generally substantially more than those for VCRs, the bulk of the discount would usually be applied to the recorded price of the television.

11.24. Comet told us that, at the time of the sample (February/March 1995), each of its stores had discretion to decide how to allocate, and record on the EPOS data, the discount given on a television/VCR package. In practice, it said, the individual store-in nine out of ten cases-would have allocated the full discount

to the television sale, because this was the higher-priced product of the two. Similarly, for sales under a 'buy a large-screen television, get a free portable (small-screen) television' offer, the small television would have been recorded as having been sold at whatever was the normal price, and the large television at its normal price less that for the small television, ie the discount on the combined purchase would be allocated in full to the large television transaction price. In addition, where a discount on an extended warranty was given, Comet advised that, as a matter of policy, this would always be recorded as a discount on the price of the product purchased, whether that was a television, VCR, hi-fi system, camcorder or a non-reference product, rather than as a reduction on the price of the warranty.

11.25. Dixons told us that about 20 per cent of its sales of 51 cm (21 inch) and larger televisions were in the form of television/VCR packages. When recording the prices for EPOS purposes, the discount on the package would be split between the two products pro rata by value. Because the television is typically the higher-priced product of the two, it would inevitably attract more of the discount. For sales under a 'buy a large-screen television, get a free portable (small-screen) television' offer, the small television would have been recorded as having been sold at whatever was the cost price to Dixons, and the large television at its normal price less the cost price of the small television, ie the discount on the combined purchase would be applied largely to the large television transaction price. In addition, where a discount on an extended warranty was given, Dixons said, this would always be recorded as a discount on the price of the product purchased.

11.26. Fully exclusive models of the reference goods were omitted from our sample, but in some instances one or perhaps several of the largest retailers (Dixons, Comet and the RECs) accounted for a major proportion of total sales of a particular model, ie the product was 'semi-exclusive' to those retailers.<sup>1</sup> In these cases, the retail price may have reflected reduced net buying prices negotiated with the suppliers, and these retail prices will have largely determined the observed price distribution, particularly as such retailers generally aim to charge a uniform price for given models in each of their stores (see paragraph 10.60).

11.27. As mentioned in Chapter 10, both Dixons and Comet sometimes selectively adjust prices either locally (special offers in individual shops) or in particular regions. The price reduction is sometimes implemented by means of so-called 'voucher' promotions; in exchange for vouchers (or coupons) cut out from press advertisements (they can also sometimes be collected on entering the store), purchasers claim a lump sum off the ticket price. Voucher promotions may also be undertaken nationally; they typically run for limited periods, for example bank holiday weekends. The purpose is often to clear stocks of particular goods or to match competitors' prices. Voucher schemes may be partly or wholly supplier-funded. We understand that the reduced price arising from voucher sales (and also that under 'sales-out' promotions, but not consumer 'cash-backs') is normally recorded by retailers through their EPOS systems, where used, and hence will be included as reduced prices in our price observations derived from EPOS data.

11.28. There are a number of other reasons, not associated with price competition, why observed retail transaction prices may be below the RRP. In most cases, it is not possible to quantify with any degree of accuracy either their frequency or impact on the price distributions for our product sample, but, where possible, we explain in our four pricing analyses any special features (for example, product obsolescence and staff discounts) which are known to have affected the data. The main reasons include the following:

- (a) *Staff discounts.* It is common practice for retailers to offer discounts to their own staff, often, we were told, of about 10 per cent. Comet told us that over 50,000 staff of businesses in its parent company group (Kingfisher) were eligible for such discounts on purchases from Comet stores for themselves or their immediate families. The total cost of such staff discounts amounted to approximately 0.2 per cent of sales. Dixons advised us that 1 per cent of sales by value for electrical goods as a whole would be subject to such discounts. Beyond that, no detailed information was available. More generally, some evidence from major retailers-see (b) below-suggests that, for the market as a whole, the direct effects may be rather modest. That leaves open the possibility that the effects on individual models may be more significant.
- (b) *Ex-display and damaged (or repaired) goods.* Again, it has not been possible to quantify accurately the prevalence or impact of such discounts, though it seems likely that they will be offered more often on televisions than on the other reference goods. Comet told us that ex-display and refurbished televisions

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<sup>1</sup>See the price analysis sections for examples. Two semi-exclusive hi-fi systems were the Kenwood M 28 G, which was sold mainly through Dixons, and the Sanyo 550, for which Comet was the main retailer: see Table 11.6.

might be sold in its stores as manager 'specials', non-pristine stock or through other marketing promotions. With the possible exception of televisions, the advice from suppliers and major retailers suggested that the direct effects of discounts reflecting ex-display goods etc may be modest (see paragraph 10.117). Several major retailers told us that discounts to staff, discounts on displayed or damaged (or repaired) goods, and any in-store negotiated discounts taken all together amounted to 1 to 2 per cent of their total revenue from the sale of electrical goods, though the discount given on individual items was likely to be higher.

- (c) *Product obsolescence or 'end-of-line' sales.* At the end of a product's life, the supplier not infrequently negotiates a special deal with one or several of the major retailers or initiates a 'sales-out' promotion (see paragraph 11.13) or both, thereby facilitating sales at prices below the previously prevailing RRP, in order to clear stocks before the introduction of a replacement model. Two examples in our pricing analyses were a Toshiba large-screen television-see paragraph 11.65-and a Panasonic VCR-see paragraph 11.86. In other cases, however, demand may match or exceed the stocks available, in which case, we were told (for example, by Aiwa, with respect to hi-fi systems), the supplier may retain the RRP and is less likely to negotiate a stock-clearance deal.
- (d) *Supplier-initiated price promotions prior to the sample period.* In some cases, there may have been supplier promotions (for example, 'sales-out'-based reductions in RRP) just before our sample period. Such promotions may have given rise to spillover effects into the sample period, either because of unsold stocks purchased at the lower price or because of the effects of returned goods (see (e) below).
- (e) *Returned goods.* In some circumstances, goods may be returned to the retailer several weeks after purchase, possibly in exchange for other products. Where returned goods recorded in our sample data were originally purchased at a price which was different from that prevailing during the sample period, they may have distorted the calculation of implied average prices (potentially either upwards or downwards) because of the weekly aggregation of sales net of returns (see paragraph 11.29).
- (f) *Ancillary offers and purchases.* Some suppliers (for example, Sony) claimed that focusing on transaction prices to the exclusion of offers such as interest-free credit and free extended warranties could lead to biased results. Hence, if a free extended warranty were to be provided on the sale of a television, for example, the 'real' price to the consumer would be the recorded transaction price (or the displayed price in the case of non-EPOS data) less the value or price of the warranty. Moreover, if a price discount were given on a particular sale of, say, a VCR, and the customer also made a related purchase (for example, some VHS tapes), and these were then 'bundled together' in the recorded transaction price in the EPOS data, the 'real' price would be overstated and might be nearer to the RRP than appeared to be the case from the EPOS data. On this second point, GfK reiterated to us that it made every effort to ensure that the price information received from retailers was not bundled in this manner, and believed that the EPOS data was largely free of such distortions. Possible exceptions are considered in paragraph 11.31.
- (g) *Data recording and GfK estimation errors.* Although we believe recording errors to be minimal, no doubt there are some instances where either the retailer entered the wrong price (either too low or too high), or the GfK audit prices (see paragraph 11.8) were inaccurate. In addition, the grossing up of data on small retailers by GfK may have introduced a degree of sampling error in the price distributions (by assuming that other retailers' sales behave the same as those in the GfK panel). Furthermore, during our evaluation of the data, we identified and subsequently corrected a number of inaccuracies in the figures provided to us by GfK. In general, by applying intensive checking procedures, every effort was made by both GfK and us to ensure that the data finally used were sound.

11.29. The above factors may give rise to individual price observations below RRP in the price distributions, for reasons other than retail price competition. In addition, however, the weekly averaging of the major retailers' EPOS data may compound the effects because, as mentioned earlier (see paragraph 11.7), it is likely to increase the proportion of price observations recorded as being below the RRP. This may occur where there are multiple sales of a particular model at a given store during a reporting week, as may often be the case for best-selling models (provided also that at least some sales of the model in that store are made at different prices). By way of a simplified example, if four sales were made during the week, three of which were at the RRP and one at, say, 10 per cent below the RRP (for whatever reason), the data would record all

four sales as having been at a price which was the arithmetic mean (the average) of the actual prices, and this figure would often be below the £5 band which included the RRP. Thus, if the critical question were whether or not the retailer in question sold the good at the RRP, three of the four observations would be incorrect, and the number of observations attributed to the RRP value band would therefore be understated. If, on the other hand, the averaging involved, say, 20 sales (in a given store) at the RRP and only one at a slightly lower price, it is likely that all of them would be shown to be within the RRP band.

11.30. For any individual model, the effects of averaging on the distribution of recorded prices in our EPOS data will depend on the volume of sales in a given week for each store, and the frequency and size of any discounts. To explore the issue in more detail, we undertook a series of simulations using various alternative assumptions about these factors. The results suggested that the general effect in the bar charts in Appendix 11.1 is likely to have been in the direction of a modest reduction in the dispersion of prices. It is also likely, however, that depending on the circumstances applying to particular models, some of the modal values will have been shifted to the left, away from the RRP and the proportion of observations recorded as being within 5 per cent of the RRP will have been reduced.

11.31. There are also some, albeit far fewer, examples of prices being *above* the RRP, and in some cases they are substantially above. We understand that some of the more extreme outliers may reflect various factors, including the cost of extended warranties having been included in the transaction price;<sup>1</sup> the effects of package sales (see above); or possibly also the effects of returned goods on recorded prices. Less extreme observations above the RRP may reflect retailers choosing to price above the current RRP where perhaps local competition is muted (some retailers told us that they did this occasionally); or the inclusion of 'extras' such as delivery or installation charges (for large televisions and possibly VCRs) and of accessories and other goods in the price recorded on the EPOS data. In some cases they may, as explained above, simply reflect data errors. Some suppliers (and major retailers) expressed a degree of surprise that retailers had charged prices higher than the RRP, since suppliers generally regard and intend their RRP to be a maximum retail price, though Sanyo advised us that it neither intends nor regards RRP as maximum retail prices.

### ***Statistical measures***

11.32. In considering the relationship between retail transaction prices and RRP, we have examined the modal (most frequent) price charged for any given model, the proportion of sales within a given percentage of the RRP and the covar (a measure based on the standard deviation of the distribution which summarizes the spread of prices relative to the mean).

11.33. With regard to the modal value measure, this provides a measure of the central tendency of the distribution, as of course do the mean and median values, in their own way. The latter, however, are influenced by the skewness of the distributions and the existence of both extraneous observations and extreme outliers, whereas the mode is based on a selection of the most commonly observed range. We therefore considered the mode to be more suitable for our purposes. If, for example, retailers were at the time of the sample generally pricing at RRP, it would be likely that the modal value would be either at or close to the RRP for any particular model. Nevertheless, this measure has its own limitations. It may be the case, for example, that although the modal price was at the RRP, far more sales took place at a range of prices *below* the RRP, reflecting retailer competition in the form of reduced prices. This might give rise to either a relatively wide distribution of prices, or a situation where prices are 'clustered' around one or perhaps several prices below the RRP.

11.34. In considering the properties of the distributions, we have used two measures of the spread of prices. The first is the proportion of observations that are close to the effective RRP. More specifically, we have measured for each model in the sample the proportion of price observations within 2 per cent, 5 per cent and 10 per cent of the RRP (as shown in Figures 1 to 47 in Appendix 11.1: in the summary tables, we have used only the 'within 5 per cent' measure). The boundaries of these price ranges were calculated from the RRP itself (to minimize distortion), but where the boundaries fell within a price band (as would commonly be

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<sup>1</sup>An example was the Canon UC 100 camcorder: see Figure 46 in Appendix 11.2. Extended warranties may also, in some instances, have the opposite effect. As explained in paragraph 11.23, where a retailer gives a discount on the warranty, it will usually be recorded by the retailer as a reduction in the price of the product. As long as warranties for electrical goods were taxed more lightly than the goods themselves—the 1997 Finance Act changed the tax position—this procedure reduced the retailer's tax bill.

the case), we have included all the observations within that band. In principle, this could mean that the number of price observations recorded as falling within, say, 5 per cent of the RRP is somewhat overstated. We tried various alternative approaches to defining the boundaries to the bands and assumptions as to the distribution of prices within bands, but found that the variation in the 'within 5 per cent' measure was generally minimal. In practice, moreover, actual prices (though not necessarily weekly averaged prices) are commonly at the top of the relevant price band because (see paragraph 11.15, footnote 2) both RRPs and retailers' display prices are usually at £10 'price points' such as £299.99 or £369.99. It thus appears that the possible distortion of the measure under discussion should not be serious.

11.35. Where two distinct effective RRPs had been quoted (ie because the RRP changed during the sample period), the percentage of sales indicated as being within 2, 5 or 10 per cent of the RRP represents the number of sales within 2, 5 or 10 per cent of each of the two RRPs added together (excluding overlaps) as a percentage of total sales. In practice, only one model in our sample, the Technics SCCH 510 hi-fi system (see Table 11.5), had two RRPs during the sample period.

11.36. The second measure (of the spread of prices) is the covar, which is the standard deviation of the distribution divided by the arithmetic mean, expressed as a percentage. We adopted this measure of the spread of retail prices in our reports on video games<sup>1</sup> and recorded music.<sup>2</sup> The covar measures the degree to which the observations are clustered around the average value. The covars found in our pricing analyses are given in Tables 11.1 (on 12 television models), 11.3 (VCRs), 11.5 (hi-fi systems) and 11.7 (camcorders). Panasonic, on a number of occasions, expressed its concern about our relying on the covar in assessing the relationship between transaction prices and RRPs. In a letter dated 26 March 1997, Panasonic suggested that we should have used the standard deviation of the differences between transaction prices and the RRP, divided by the RRP (and expressed as a percentage), rather than the covar. This measure, Panasonic said, would be more appropriate because it would assess the spread of observations around the RRP. It added that it believed that the values for this measure would have been higher than those we had calculated for the covar.

## **Pricing analysis of televisions**

### ***Price distribution data***

11.37. The nature of the data used in our analysis of television prices (and of the prices of the other reference goods) is explained in detail in the section above. The price distributions obtained for the 12 televisions included in our sample, all big-selling models of the major brands, are shown in the form of bar charts in Figures 1 to 12 in Appendix 11.1. The price data and the statistical measures used are summarized in Table 11.1, and a breakdown of the proportion of sales of each model through different retailers (or groups of retailers)<sup>3</sup> is provided in Table 11.2. Three of the televisions included were 34 cm (screen size)<sup>4</sup> models, four were 51 cm, 3 were 59 cm and one was a large-screen, 68 cm model (the Toshiba 2939DB).

11.38. As shown in Table 11.1, the total volume of sales (and price observations) included in the analysis was just over 30,000. We estimate that these represent about 10 per cent of the total sales of televisions in the UK during the February/March 1995 sample period (for the full year 1995, total sales were about 3.0 million, at a retail value of £931 million: see Table 7.2).

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<sup>1</sup> *Video games: a report on the supply of video games in the UK*, HMSO, Cm 2781, March 1995.

<sup>2</sup> See footnote to paragraph 2.95.

<sup>3</sup> The figures in Table 11.2 exclude sales through catalogue/mail order and Rumbelows. Comparable data which include these retailers are given in Table 1 in Appendix 11.3.

<sup>4</sup> As explained more fully in paragraph 7.11, metric measures are increasingly used and quoted by suppliers, though suppliers' model numbers often indicate the screen size in inches (for example, the Sony KVM 1400 is a 14 inch model). Typically, for 14 inch sets, the visible screen size is 34 cm, for 21 inch models it is 51 cm, 25 inches equates to 59 cm, and 29 inches to 68 cm.

TABLE 11.1 Analysis of pricing data: televisions

Brand/model	Units sold*	Price observations		Modal value band‡	Covar§
		RRP £	± 5% of RRP (%)†		
<i>Sony</i>					
KVM 1400	5,764	199.99	75.1	RRP	6.4
KVX 2172¶	2,909	529.99	17.1	£445	9.8
KVM 2151S	2,048	399.99	47.9	RRP	8.0
<i>Panasonic</i>					
TX21V	3,576	429.95	71.3	RPP	8.0
TC14S	2,954	179.95	83.6	RRP	3.0
TX25X	2,919	529.95	71.7	RRP	6.9
<i>Toshiba</i>					
1400	2,775	169.99	56.3	RRP	6.3
2939DB	1,549	999.99	47.4	RRP	5.7
2545DB	1,421	569.99▫	63.3	RRP	6.7
<i>Mitsubishi</i>					
CT21M	1,658	349.99	64.0	RRP	7.5
CT25A	1,433	499.99	74.4	RRP	6.7
CT21A	1,239	399.99	76.6	RRP	8.4
Total	30,245				

Source: GfK, suppliers and MMC.

\*Volume of sales used in the pricing analysis; includes sales by all retailers, but excludes catalogue/mail order (and Rumbelows) during the period 19 February to 25 March 1995 (see paragraph 11.15).

†See paragraph 11.34.

‡Value bands are in £5 units designated by the lower bound: the £295 band, for example, includes all price observations between £295.00 and £299.99 (see paragraph 11.15). The modal band indicates where most prices were observed to be (see paragraph 11.33).

§The covar is a measure of the spread of prices, and is calculated as the standard deviation divided by the mean value, expressed as a percentage (see paragraph 11.36).

¶'End-of-line' product, ie model at or close to the end of its product life (see paragraphs 11.28(c) and 11.40).

▫For this model, the RRP represents the supplier's promotional price (see paragraph 11.13).

11.39. As explained more fully in paragraphs 7.11 to 7.13, the wide range of television prices largely reflects differences in screen size (the cathode ray tube), though teletext and NICAM (and Dolby Pro-Logic) sound features add to the cost and price for any given size of television. The retail prices of most small-screen televisions (34 cm, or 14 inch, is the most popular size) are in the range £125 to £200. With regard to mid-size televisions, prices for 51 cm (21 inch) models typically range from £300 to £500, and those for 59 cm (25 inch) televisions range from £450 to £700. The cost of very large-screen models (68 cm and larger) is £550 to £1,000 or more. In our sample of big-selling models, the range of RRP's was £180 to £1,000. As explained earlier, RRP's and retail prices are almost always at so-called 'price points' of, for example, £349.99 rather than £350.

11.40. Of the 12 models in our sample, only one (the Sony KVX 2172) was an end-of-line model, ie it was close to the end of its product life. All models had an identifiable RRP (see paragraph 11.12). In only one case (the Toshiba 2545DB) was the RRP a supplier's 'promotional' price, and none of the RRP's changed during the sample period.

11.41. For all models apart from the Sony KVX 2172 (which was subject of end-of-line discounting-see paragraphs 11.55 to 11.58), the modal value band was at the RRP. For six of these models, 70 per cent or more of the price observations were within 5 per cent of the RRP, and for the other five the percentage was between 47 and 64 per cent. For these 11 fully current models, the covars in nine cases were in the range 5.7 to 8.0 (the Panasonic TC14S was lower, at 3.0, whilst the Mitsubishi CT21A was higher, at 8.4).

11.42. As previously mentioned (see paragraph 11.19), the Verdict report of September 1994 on televisions and VCRs concluded that prices offered by different retailers were much the same. The report indicated, for example, that the Sony KVM 1400 model, the largest-selling television in our sample, was at that time (six months prior to our sample period) being offered by Dixons, Comet and other major retailers (Rumbelows, NORWEB, Homepower, Alders and Argos) at the RRP of £199.99. Three retailers were

shown as selling at prices below the RRP, that is Miller Bros (£189.99), JLP (£189.00) and PriceCostco (£164.99-18 per cent below RRP).

11.43. According to Verdict, the second largest-selling television in our sample, the Panasonic TX21V(2), was on offer at the RRP (£429.99) at Dixons, Comet, Rumbelows, Allders, Miller Bros and Powerhouse. The only retailer listed as selling at a price significantly below RRP was Cargo Club (£389.99-£40 or 9 per cent below RRP). The Mitsubishi CT25A(5STX) was priced at the RRP (£499.99) by Dixons, Comet and other retailers (the JLP price was £499.00); though Miller Bros was offering this model at below RRP (£489.99).

11.44. The Verdict report also covered the Sony K VX 2172(S). It was on sale at the RRP of £529.99 at Dixons, Comet, Argos and other retailers (the JLP price was £529.00), though Rumbelows was offering this model at £449.99, and Miller Bros at £514.99. CA's *Which?* surveys mentioned earlier (see paragraph 11.20) also covered this model, and found that in nine of the ten retail outlets visited, the offer price was at or very close to the RRP; the tenth store (a small retailer) was selling the model at £60 less. By the time of our analysis period, that is several months after the Verdict report, the K VX 2172 was subject to special factors: it had become an end-of-line product and a high proportion-38 per cent-of sales went through Dixons (see paragraphs 11.55 to 11.58). For this model, we found the modal value band to lie £60 below the RRP, only 17 per cent of observations were within 5 per cent of the RRP, and the covar was the highest in the sample, at 9.8.

11.45. CA's survey also included information on retailers' displayed prices relating to nine television sets in total, both 34 cm and 51 cm models, for its May 1995 *Which?* report (which, as in our pricing analysis, included the Sony K VX 2172 and the Panasonic TX25X) and the June 1996 *Which?* report (where the models differed from those in our analysis). As explained in both reports, CA found displayed prices for seven of the nine models chosen to be identical in Dixons, Comet and Powerhouse. The prices for the other two models differed by only £10. For six models, we were able to compare the prices quoted in *Which?* with RRP; we note that in all cases the *Which?* prices appeared to be at the RRP. In response to the CA survey evidence, Sony told us, 'It is not clear on what basis the models referred to were selected. What is not in doubt is that the Consumers' Association were intending to make the point that retail competition is limited and they presumably chose the handful of stores and models they refer to in order best to demonstrate that point.'

11.46. We also looked at some of the Beyen reports-see paragraph 11.5-which list prices of a large number of television models which had been advertised in newspapers, specialist magazines, retailers' catalogues etc. These reports-which were sent to us by Sony-covered February 1995 and included reference to advertisements by five retailers in the case of the KVM 1400 model and four retailers for the K VX 2172 model. For the KVM 1400, Argos, in its catalogue, was advertising at the RRP of £199.99; the four others (Azat, Myers Audio, Hi-Fi Sounds and Jupiter Audio Centre) were advertising prices in *What Video* magazine at £20 to £30 below the RRP. For the K VX 2172, Argos was again advertising at the RRP (£529.99) for this model; the other three retailers (Azat, Tru-fi and SDB), on the other hand, were advertising prices-again in *What Video*-some £50 to £70 below the RRP.

11.47. As shown in Table 11.2, the majority of the models covered in Table 11.1 were sold through both the major retailers, Dixons and Comet, as well as through 'other retailers' (which overall accounted for 53 per cent of sales), with their respective shares of sales being broadly comparable to their overall shares of television sales (see Table 7.7). Only one model (the Panasonic TC14S) was sold through only one of the two major retailers (ie by Dixons but not Comet), which were not, therefore, in 'head-to-head' competition with respect to this model, though it was also available through other retailers. As mentioned above, a high proportion of sales of the Sony K VX 2172 went through Dixons, though the model was also available from Comet, the RECs and other retailers.

TABLE 11.2 Televisions included in the MMC pricing analysis: shares of sales\* by retailers

Brand/model	<i>per cent</i>					
	<i>Dixons</i>	<i>Comet</i>	<i>RECs</i>	<i>Other retailers†</i>	<i>Residual‡</i>	<i>Total§</i>
<i>Sony</i>						
KVM 1400	18.5	9.5	18.1	46.8	7.1	100.0
KVX 2172	37.5	6.2	17.7	38.5	0.1	100.0
KVM 2151S	11.5	17.2	24.7	45.4	1.2	100.0
<i>Panasonic</i>						
TX21V	14.3	9.0	11.6	64.9	0.1	100.0
TC14S	17.7	0.0	11.1	66.5	4.7	100.0
TX25X	10.1	6.3	11.8	71.8	0.0	100.0
<i>Toshiba</i>						
1400	20.5	6.3	17.0	48.7	7.4	100.0
2939DB	35.4	17.6	19.4	27.5	0.0	100.0
2545DB	18.2	18.8	23.0	40.0	0.0	100.0
<i>Mitsubishi</i>						
CT21M	5.5	18.1	17.4	58.9	0.0	100.0
CT25A	10.5	8.7	19.3	61.5	0.1	100.0
CT21A	8.2	9.9	21.5	59.2	1.1	100.0
Weighted average¶	18.0	9.4	16.8	53.1	2.6	100.0

Source: GfK and MMC.

\*Volume of sales used in the pricing analysis, covering the period 19 February to 25 March 1995; excludes sales through catalogue/mail order and Rumbelows (see paragraph 11.15).

†Includes smaller multiple retailers, department stores and small retailers: see paragraph 11.8.

‡Includes sales which could not be allocated to particular retailers or groups of retailers, together with GfK weighting factors.

§Rows of percentage shares may not sum exactly to 100 due to rounding.

¶Weighted by the sales volume of each model.

11.48. More generally, we were told by a number of retailers and suppliers that it is not uncommon for specific model variants to be sold through some retailers but not others, because retailers often seek to stock models that are different from those of their closest competitors. At the time of our pricing study, for example, Sony's television range included four 34 cm (14 inch) models offering different features, three 51 cm (21 inch) variants and four 59 cm (25 inch) models, together with ten other, larger-screen televisions. Other suppliers also offer extensive model ranges and in March 1995 there were, according to GfK, about 800 different models available (of which the top 70 accounted for 50 per cent of total sales). In this situation, retailers may opt to stock either a slightly different and 'semi-exclusive' model from the same supplier or brand, or a comparable model from a different supplier. In addition, these may be retailers' own-label products (Dixons' Matsui brand, for example: see paragraph 7.42). Model and range differentiation were considered in paragraphs 8.108 and 8.109, and 9.95 to 9.99.

11.49. It was put to us by some suppliers that the inclusion of non-EPOS data referring to sales by small retailers, ie of data which related to in-store ticket prices rather than transaction prices, might lead to some distortion of the price distributions by excluding in-store, negotiated discounts which may be granted by such retailers (see paragraphs 11.16 to 11.20). Rather more than one-half of the television price data were based on transaction prices, according to GfK, though the proportion varied between models (for example, for the Sony KVM 1400, 74 per cent of observations were EPOS, whilst the figure for the Panasonic TX21V was 50 per cent). It was not possible to obtain information directly on the extent of any negotiated discounts on sales of televisions covered by our pricing analysis, or on their quantitative impacts, but in response to these concerns we undertook a sensitivity analysis in which we segregated, as far as possible, the EPOS from the non-EPOS data.

11.50. For the EPOS data category, this meant in practice basing the analysis wholly on returns from Dixons, Comet and the RECs, and thus excluding from the analysis the data relating to 'other retailers' (including the EPOS figures from department stores and the smaller multiples-about 10 to 15 per cent of the total-and also the residuals; together, these data accounted for 56 per cent of the total). The resulting EPOS-only figures are shown in Table 1 in Appendix 11.4. For five models (the Sony KVM 1400 and KVX 2172, the Panasonic TX21V and TC14S, and the Toshiba 2939DB) the data derived from the analysis of this sub-set were not markedly different from those in Table 11.1, whilst for the seven others that was not the case. In particular, there were, in proportionate terms, substantially more observations below the RRP price band; this predominantly affected models sold to a relatively high extent through the RECs and 'other retailers', ie

models with relatively low sales through Dixons and Comet. The covars were not greatly different. The various factors affecting the EPOS data were discussed in paragraphs 11.4 to 11.36.

11.51. Taking all the televisions together (but excluding the one end-of-line model, the Sony K VX 2172), 54 per cent of the EPOS-only observations were recorded as being within 5 per cent of the RRP. The overall covar was 7.0.

11.52. For the non-EPOS category, we examined the data from 'other retailers'; whilst this consisted mainly of non-EPOS information, it also included the EPOS returns from outlets such as department stores (JLP and HoF) and multiples such as Boots, Tempo and Colorvision. The results are shown in Table 2 in Appendix 11.4. As was to be expected, the data on the five models listed in paragraph 11.49 were not markedly different from those in Table 11.1, though for the Sony K VX 2172 the modal value was £30 higher at £475. For other models the modal values were mostly at the RRP price band, as for the full data set shown in Table 11.1, though for the Toshiba 2545DB the modal value was £30 above the RRP. For all but one model, the proportion of observations within 5 per cent of the RRP was markedly higher than in Table 11.1. The covars were not greatly different.

11.53. Taking all the televisions together (but excluding the one end-of-line model, the Sony K VX 2172) the non-EPOS data showed that 80 per cent of observations were recorded as being within 5 per cent of the RRP. The overall covar was 5.9.

### ***Price history analysis***

11.54. In order to examine suppliers' pricing policies over the life cycle of televisions, we carried out a study of the price histories of three of the 12 models of televisions included in the sample used for our main pricing study, namely the Sony K VX 2172, the Mitsubishi CT21M and the Toshiba 2939DB. In selecting these particular models, we took into account the need to examine products from different suppliers, the relative importance of individual models in terms of overall sales, and the nature of the price distribution data and other information available at the time.

11.55. As part of this exercise, we obtained information on suppliers' trade prices. However, trade prices overstate retailers' net buying prices in most instances because, as explained more fully in paragraphs 10.108 to 10.146, negotiated discounts and other allowances offered or granted by suppliers, often related to advertising and promotional activities, account for a substantial proportion of retailers' gross margins. By way of example, the trade price for Sony's K VX 2172 model was £[\* ] (excluding VAT). Selling at the RRP of £529.99 would imply a gross margin of [\* ] per cent (calculated as a percentage of the RRP, excluding VAT). In practice, however, the maximum total gross margin available to retailers would have been about [\* ] per cent after all discounts and allowances.

11.56. Other information obtained on the K VX 2172 indicated that this was an above average- priced, 51 cm screen model, offering NICAM stereo sound and fasttext features. It was launched in the UK market at an RRP of £529.99 in April 1994 and discontinued about 12 months later (the last sales to retailers were in March 1995). During the sample period, therefore, this was an end-of-line product, though it was also the 7th-best-selling television at the time (excluding retailers' own-label and exclusive models). It was replaced in April 1995 by the K VX 2182 model, for which the RRP was £499.99.

11.57. During its model life, the RRP for the K VX 2172 was held constant at £529.99 (as was the trade price), but it was also the subject of two £50 consumer cash-back promotions by Sony (during 16 May to 2 July 1994, and 3 October to 3 December 1994). Under the terms of these supplier-initiated promotions (see paragraph 11.13), a buyer of this model was given a claim form by the retailer at the time of purchase which, if completed and returned to Sony, allowed the buyer to receive back a cheque for £50.

11.58. At the time of the pricing study, this model was subject to end-of-line price discounting. Under one-fifth of sales were at the RRP (see Table 11.1 and Figure 2 in Appendix 11.1). In the main, these were sales by 'other retailers' as defined in Table 11.2. Dixons handled nearly 38 per cent of the sales reported and

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\*Figures omitted. See note on page ii.

a further 18 per cent went through the RECs; Dixons and the RECs were selling mainly at a retail price of £449.99. As a result, this was the modal value in the pricing study, with about 53 per cent of sales being made within 5 per cent of the modal value. We were unable to establish the net prices at which Dixons, Comet and the RECs obtained this model from Sony during the sample period.

11.59. The Mitsubishi CT21M(3TX) was an average-priced 51 cm teletext model (without NICAM). It was launched in June 1993 at an RRP of £379.99 (though this was reduced to £349.99 as from 26 December 1993) and discontinued in July 1995 (a model life of about two years). It was replaced in that month by the CT21M(5BT) model, for which the RRP was £329.99. At the time of the pricing study, it was the 22nd-best-selling television in the UK (excluding retailers' own-label and exclusive models). The majority (59 per cent) of sales of this model were handled by 'other retailers', that is by department stores and small retailers (see Table 11.2).

11.60. The CT21M was subject to various Mitsubishi-initiated sales promotions during its model life, with the savings offered available from all retailers stocking this and related models. In September 1993 Mitsubishi financed through retailers an offer of six months' interest-free credit, and during October to December of that year it funded a £20 cash-back promotion (under which a purchaser of a CT21M could claim back £20 from Mitsubishi on return of a completed claim form). Mitsubishi then reduced the RRP in late December 1993 by £30 to £349.99 in order to encourage sales, it told us, by bringing its price more into line with other comparable and competing models.

11.61. During 1994 Mitsubishi funded (through retailers) three consecutive promotions where the CT21M was offered as part of a television/VCR package (both Mitsubishi products) at a reduced price. During March to June, for example, it was offered in combination with a Mitsubishi HS M38 VCR (RRP £329.99) at a saving of £80 off the combined RRP. In July and August the package involved a different Mitsubishi VCR (the HS M48), and the saving against the two RRP. Under a similar promotion in September and October, the saving (once again with a different Mitsubishi VCR) was £60.

11.62. The minimum gross margin based on the published trade price was [\* ] per cent for this model, and was held broadly constant throughout the product's life. As explained in paragraph 11.55, however, this understates the actual gross margin because other discounts and allowances were also available.

11.63. At the time of the sample period (when Mitsubishi was not, it told us, funding any promotions on this model), the modal value for the CT21M was at the RRP of £349.99, 64 per cent of observations were within 5 per cent of the RRP, and the covar was 7.5 (see Table 11.1 and Figure 10 in Appendix 11.1).

11.64. The Toshiba 2939DB was a large-screen (68 cm, with Dolby Pro-Logic sound) model. It was introduced in October 1993, at an RRP of £999.99, and discontinued two years later in October 1995, when it was replaced by the 2857DB model, for which the RRP was also £999.99. At the time of the sample period, it was the 24th-best-selling television in the UK (excluding retailers' own-label and exclusive models). Dixons accounted for 35 per cent of sales, and Comet a further 18 per cent, though it was also available from other retailers (see Table 11.2).

11.65. The RRP for this model was not changed during its product life and Toshiba, we were told, did not engage in any special sales promotions until shortly before it was to be replaced. At that time, Toshiba granted certain extra discounts and allowances to retailers (other than Dixons and Comet, with whom separate terms were negotiated-see below) and set a correspondingly lower, promotional RRP of £899.99 (a reduction of £100). Although the published trade price remained unchanged, retailers were given, retrospectively, an extra 'sales-out' allowance of £60 (excluding VAT) for each unit sold. Toshiba also funded an offer of ten months' interest-free credit, which was paid retrospectively at a rate of £50 per unit sold. At the same time, a reduced buying price was negotiated with both Dixons and Comet in order, Toshiba told us, to clear stocks. Dixons also received an additional allowance of £42.30 per unit, to finance an offer of nine months' interest-free credit.

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\*Figure omitted. See note on page ii.

11.66. Retailers' gross margins were held broadly constant throughout the product's life. The minimum margin based on the issued trade price was [\* ] per cent for this model, but, as explained in paragraph 11.55, this understates the actual gross margin because other discounts and allowances were also available.

11.67. At the time of the Verdict report (see paragraph 11.42), Comet and most other retailers were selling the Toshiba 2939DB model at the RRP of £999.99, though Colorvision was offering it at £50 less. During the February/March 1995 sample period, the modal value was at the RRP of £999.99, 47 per cent of observations were within 5 per cent of the RRP, and the covar was 5.7 (see Table 11.1 and Figure 8 in Appendix 11.1).

## **Pricing analysis of VCRs**

### ***Price distribution data***

11.68. The data used in our analysis of VCR prices (and those of the other reference goods) are explained in detail in paragraphs 11.4 to 11.36. The price distributions obtained for the 12 VCRs included in our sample, all big-selling models of the major brands, are shown in the form of bar charts in Figures 13 to 24 in Appendix 11.1. The price data and the statistical measures used are summarized in Table 11.3, and a breakdown of the proportion of sales of each model through different retailers (or groups of retailers)<sup>1</sup> is provided in Table 11.4.

11.69. As shown in Table 11.3, the total volume of sales (and price observations) included in the analysis was about 30,000. We estimate that these represent about 13 per cent of the total sales of VCRs in the UK during the February/March 1995 sample period (for the full year 1995, total sales were about 2.26 million, at a retail value of £611 million: see Table 7.3).

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\*Figure omitted. See note on page ii.

<sup>1</sup>The figures in Table 11.4 exclude sales through catalogue/mail order and Rumbelows. Comparable data which include these retailers are given in Table 2 in Appendix 11.3.

TABLE 11.3 Analysis of pricing data: VCRs

<i>Brand/model</i>	<i>Units sold*</i>	<i>RRP £</i>	<i>Price observations within ± 5% of RRP (%)†</i>	<i>Modal value band‡</i>	<i>Covar§</i>
<i>Panasonic</i>					
NV HD90	5,224	429.95	71.7	RRP	5.0
NV SD25 B	3,600	279.95	66.6	RRP	6.6
NV SD44 B¶	3,609	329.95	76.1	RRP	5.8
<i>Sony</i>					
SLV-E25¶	1,775	329.99	29.9	RRP	8.9
SLV-E70¶	1,598	499.99	51.3	RRP	7.2
<i>Aiwa</i>					
HV-GX150	1,097	249.99	63.1	RRP	6.9
<i>Toshiba</i>					
V 804 B	2,034	449.99	62.8	RRP	5.0
V 204 B¶	1,385	279.99	37.0	RRP	11.0
V 854 B	1,258	499.99	68.3	RRP	4.9
<i>Mitsubishi</i>					
HS M50 V	4,036	399.99 <sup>⊞</sup>	65.4	RRP	6.7
HS M20 V	2,725	279.99 <sup>⊞</sup>	59.7	RRP	5.1
HS M40 V	1,608	329.99 <sup>⊞</sup>	68.6	RRP	7.7
Total	29,949				

Source: GfK, suppliers and MMC.

\*Volume of sales used in the pricing analysis; includes sales by all retailers, but excludes catalogue/mail order (and Rumbelows) during the period 19 February to 25 March 1995 (see paragraph 11.15).

†See paragraph 11.34.

‡Value bands are in £5 units designated by the lower bound: the £295 band, for example, includes all price observations between £295.00 and £299.99 (see paragraph 11.15). The modal band indicates where most prices were observed to be (see paragraph 11.33).

§The covar is a measure of the spread of prices, and is calculated as the standard deviation divided by the mean value, expressed as a percentage (see paragraph 11.36).

¶'End-of-line' product, ie model at or close to the end of its product life (see paragraphs 11.28 (c) and 11.71).

⊞For these models, the RRP represents the supplier's promotional price (see paragraph 11.13).

11.70. As explained in more detail in paragraphs 7.60 to 7.63, differences in VCR retail prices largely reflect the level of specification and the features offered, such as NICAM stereo sound and VideoPlus (a facility which simplifies the programming for recording). The retail prices of most supplier-branded VCRs are in the range £200 to £550, though retailers' own-label products are generally cheaper, whilst some up-market brands (for example, B&O VCRs) can cost significantly more. In our sample of big-selling models, the range of RRP's was £250 to £500. As explained in paragraph 11.15, footnote 2, RRP's and retail prices are almost always at so-called price points of, for example, £329.99 rather than £330.

11.71. As indicated in Table 11.3, four of the 12 VCR models in our sample (the Panasonic NV SD44 B, the two Sony models and the Toshiba V 204 B), were end-of-line products. All models had an identifiable RRP (see paragraph 11.12). In three cases (the Mitsubishi models), the RRP was the supplier's 'promotional' price, but none of the RRP's changed during the sample period.

11.72. For all the VCRs in our sample, the modal value band was at the RRP. For nine of these models, 60 per cent or more of the price observations were within 5 per cent of the RRP. The other three (the two Sony products and the Toshiba V 204 B) were end-of-line models (see paragraphs 11.88 to 11.90 on the Sony SLV-E70). For all but two models, the covars were in the range 4.9 to 7.7 (the Sony SLV-E25 was at 8.9, and the Toshiba V 204 B was 11.0: both were end-of-line models). Prices of the Panasonic NV SD44 B were close to the RRP and the covar was towards the lower end of the range, even though it was also an end-of-line product.

11.73. In the September 1994 Verdict report on television and VCR prices (see also paragraph 11.42), the Sony SLV-E25 is shown as being on offer at the RRP of £329.99 by Dixons, Comet, Argos and most other retailers surveyed. Miller Bros was £15 cheaper, whilst PriceCostco was offering this model at £281.99 (nearly £50 below RRP, a discount of about 15 per cent). The largest-selling VCR during the sample period,

the Panasonic NV HD90, was also shown as priced at the RRP of £429.99 at most retail outlets surveyed. The price history analysis of this model is set out in paragraphs 11.82 to 11.85.

11.74. CA also collected information on retailers' displayed prices of four models of VCR for its June 1996 *Which?* report. As explained in the report, CA found displayed prices for the models chosen (which differ from those in our sample) to be identical in Dixons, Comet and Powerhouse. We note that, on the basis of information available to us, the prices quoted in CA's surveys appeared to be at the RRP for three of the four VCR models.

11.75. We also looked at some of the Beyen reports-see paragraphs 11.5 and 11.46-which list prices of a large number of models of VCR which have been advertised in newspapers, specialist magazines, retailers' catalogues etc. These reports-which were sent to us by Sony-covered February 1995 and included reference to advertisements by six retailers in the case of the Panasonic NV HD90 model (the largest-selling model in our sample) and eight retailers for the Mitsubishi HS M50 V model (the second-best-selling model in our sample). For the NV HD90 model, Dixons and Sevenoaks Hi-Fi were advertising at the RRP (£429.99); the four others (Tru-fi, Hi-Fi Sounds, Jupiter Audio Centre and Tempo) were advertising prices in *What Video* magazine at £30 to £60 below the RRP. For the Mitsubishi HS M50 V, Dixons, Electricity Plus and Hayes were advertising at the RRP (£399.99) for this model; three other retailers (Tru-fi, PRC HiFi & Video and Hi-Fi Sounds) were advertising prices-in *What Video* and *What Hi-Fi*-some £10 to £40 below the RRP; the other retailer, Myers Audio, was advertising at £429.00, some £30 above the RRP.

11.76. Table 11.4 shows that the majority of the models covered in Table 11.3 were sold through both the major retailers, Dixons and Comet, as well as through other retailers, with their respective shares of sales being broadly comparable to their overall shares of VCR sales (see Table 7.7). Only one model (the Toshiba V 204 B) was sold through only one of the two major retailers (Comet, with 33 per cent of sales). Dixons and Comet were not, therefore, in 'head-to-head' competition with respect to this model, though it was also available through other retailers. A high proportion (38 per cent) of sales of the Sony SLV-E70 was handled by Dixons, though this VCR was also available from Comet, the RECs and other retailers (see paragraphs 11.88 to 11.90). One model, the Mitsubishi HS M20 V, was sold mainly through 'other retailers' (78 per cent of sales): overall, these retailers accounted for 55 per cent of VCR sales.

TABLE 11.4 VCRs included in the MMC pricing analysis: shares of sales\* by retailers

Brand/model	Dixons	Comet	RECs	Other retailers†	Residual‡	per cent
						Total§
<i>Panasonic</i>						
NV HD90	16.2	6.4	9.7	64.3	3.5	100.0
NV SD25 B	15.8	8.3	8.2	64.3	3.4	100.0
NV SD44 B	20.5	6.6	5.8	63.1	4.0	100.0
<i>Sony</i>						
SLV-E25	12.7	19.1	23.2	39.4	5.6	100.0
SLV-E70	37.5	3.6	12.7	40.3	5.9	100.0
<i>Aiwa</i>						
HV-GX150	26.4	29.4	26.5	9.4	8.2	100.0
<i>Toshiba</i>						
V 804 B	33.5	16.5	9.1	32.3	8.6	100.0
V 204 B	0.0	33.1	14.8	47.4	4.8	100.0
V 854 B	28.2	11.3	15.3	41.1	4.1	100.0
<i>Mitsubishi</i>						
HS M50 V	22.1	8.9	12.1	51.8	5.0	100.0
HS M20 V	4.6	5.5	10.2	78.3	1.5	100.0
HS M40 V	13.5	8.1	12.4	62.4	3.6	100.0
Weighted average¶	18.5	10.6	11.6	54.9	4.4	100.0

Source: GfK and MMC.

\*Volume of sales used in the pricing analysis, covering the period 19 February to 25 March 1995; excludes sales through catalogue/mail order and Rumbelows (see paragraph 11.15).

†Includes smaller multiple retailers, department stores and small retailers: see paragraph 11.8.

‡Includes sales which could not be allocated to particular retailers or groups of retailers, together with GfK weighting factors.

§Rows of percentage shares may not sum exactly to 100 due to rounding.

¶Weighted by the sales volume of each model.

11.77. More generally, we were told by a number of retailers and suppliers that it is not uncommon for specific model variants to be sold through some retailers but not others, because retailers often seek to stock models that are different from those of their closest competitors. At the time of our sample period, for example, Sony's range included eight VCRs. Other suppliers also offer wide model ranges, and during the sample period there were, according to GfK, over 400 different supplier-branded models available in addition to retailers' own-label products (though the top 50 models accounted for nearly 70 per cent of sales). In this situation, retailers may opt to stock either a slightly different and 'semi-exclusive' model from the same supplier or brand, or a comparable model from a different supplier, quite apart from ranges of own-label products (Dixons' Matsui brand, for example, which in 1995 accounted for 40 per cent of all Dixons sales of VCRs: see paragraph 7.195). Model and range differentiation were considered in paragraphs 8.108 and 8.109, and 9.95 to 9.99.

11.78. Some suppliers suggested to us that the inclusion of non-EPOS price data on sales by small retailers, ie of data which related to in-store ticket prices rather than transaction prices, might lead to some distortion of the price distributions by excluding in-store, negotiated discounts which may be granted by such retailers. Just over one-half of the data were transaction prices, according to GfK, though the proportion varied between different VCR models. It was not possible to obtain information directly on the extent of any negotiated discounts on sales of VCRs covered by our pricing analysis or on their quantitative impacts, but in response to these concerns we undertook a sensitivity analysis in which we segregated, as far as was possible, the EPOS from the non-EPOS data.

11.79. For the EPOS category, this in practice meant focusing the analysis wholly on returns from Dixons, Comet and the RECs, and thus excluding from the analysis the information relating to 'other retailers' (including the EPOS returns from department stores and the smaller multiples-about 10 to 15 per cent of the total-and also the residuals; together, these data accounted for 59 per cent of the total). The resulting EPOS-only figures are shown in Table 1 in Appendix 11.5. For three models of VCR, the modal value was no longer at the RRP (£50 below in the case of the Toshiba V204B); two of these models were end-of-line. Of the eight fully current models, the data for five indicated rather more sales below the RRP, in two cases by more than 15 percentage points; the data for the other three (the Mitsubishi models) indicated either little change or an increase in the proportion of sales at or within 5 per cent of the RRP price band. The covars were not greatly different. The various factors affecting the EPOS data were discussed in paragraphs 11.4 to 11.36.

11.80. Taking all the VCRs together (but excluding the four end-of-line models) the data showed that 60 per cent of the EPOS observations were recorded as being within 5 per cent of the RRP. The overall covar was 5.2.

11.81. For the non-EPOS data category, we examined the data from 'other retailers'; whilst this consisted mainly of non-EPOS information, it also included the EPOS returns from outlets such as department stores (JLP and HoF) and multiples such as Boots, Tempo and Colorvision. The results are shown in Table 2 in Appendix 11.5. For most models, the modal values were at the RRP price band, as for the full data set shown in Table 11.3, though for the Mitsubishi HS M20 V, the modal value was £20 above the RRP. For nine models, the proportion of observations within 5 per cent of the RRP were markedly higher. The covars were not greatly different.

11.82. Taking all the VCRs together (but excluding the four end-of-line models) the data showed that 72 per cent of the non-EPOS observations were recorded as being within 5 per cent of the RRP. The overall covar was 5.9.

### ***Price history analysis***

11.83. In order to examine suppliers' pricing policies over the life cycle of VCRs, we carried out a study of the price histories of three of the 12 VCR models included in the sample used for our main pricing study, namely the Panasonic NV HD90, the Toshiba V 804 B and the Sony SLV-E70. In selecting these particular models, we took into account the need to examine products from different suppliers, the relative importance of individual models in terms of overall sales, and the nature of the price distribution data and other information available at the time. In the event, the three VCRs selected were reasonably comparable, we were told: all three were four-head models, with NICAM stereo and VideoPlus features.

11.84. The Panasonic NV HD90 was the largest-selling VCR in our sample, and the second-best-selling model overall (excluding retailers' own-label and exclusive products). Panasonic's issued trade price for this model was £[ \* ] (excluding VAT). Selling at the RRP of £429.95 would imply a gross margin of [\* ] per cent (calculated as a percentage of the RRP, excluding VAT). In practice, however, this understates the total gross margin available to retailers because, as explained in paragraph 11.54, other discounts and allowances were given: the total retailer margin would have been about [\* ] per cent.

11.85. Other information obtained on the Panasonic NV HD90 shows that this was an above-average-priced VCR, it was launched in the UK market at an RRP of £429.95 in May 1994 and discontinued about 13 months later (June 1995). During the sample period, it was the second-best-selling VCR (as mentioned in paragraph 11.84) and was stocked by all types of retailer (see Table 11.2). It was replaced in June 1995 by the NV HD600 B model with the same RRP as its predecessor of £429.95.

11.86. The RRP remained unchanged during most of this product's model life (as did the trade price) and Panasonic apparently did not initiate any special sales promotions until shortly before it was due to be replaced. At that time (April to June 1995), and in order to clear stocks, we were told, Panasonic funded an extra 'sales-out' promotion (see paragraph 11.13) through all eligible retailers. More particularly, Panasonic granted an allowance of £20 (excluding VAT) for each unit sold (this was paid retrospectively; the trade price remained unchanged), and set a correspondingly lower, promotional RRP of £399.95 (a reduction of £30).

11.87. At the time of the pricing study the modal value for the NV HD90 model was at the RRP of £429.95, 72 per cent of observations were within 5 per cent of the RRP, and the covar was 5.0 (see Table 11.3 and Figure 13 in Appendix 11.1). As mentioned earlier (see paragraph 11.73), the Verdict report suggested that in September 1994 most outlets were offering the NV HD90 at a price of £429.95.

11.88. As indicated above, the Sony SLV-E70 was a competitor to Panasonic's NV HD90 (ie it was also a four-head model with NICAM and VideoPlus). It was launched in the UK at an RRP of £499.99 in April 1994 and discontinued about 12 months later (April 1995, though the last sales of any volume to retailers were in January 1995). During the sample period, therefore, the SLV-E70 was at the end of its product life, though it was the second-best-selling VCR at the time (excluding retailers' own-label and exclusive models). Dixons accounted for 38 per cent of sales in the analysis, though this model was also available at other retailers (see Table 11.4). It was superseded in April 1995 by the SLV-E700 model (which had a higher specification, Sony told us) at the same RRP as its predecessor of £499.99.

11.89. The RRP remained unchanged during most of this product's model life (as did the trade price), though it was the subject of two Sony sales promotions during 1994. From 16 April to 2 July Sony offered consumers a £50 cash-back offer (see paragraph 11.57) and in October to December it initiated and financed a £50 'dealer cash-back' offer (equivalent to a 'sales-out' promotion). During this latter Sony promotion, retailers paid back purchasers £50 at the time of sale, we were told, ie in practice the RRP was reduced by £50. Although the published trade price remained unchanged, dealers were reimbursed (retrospectively) by Sony, which granted an extra allowance of £30 on each unit sold.

11.90. At the time of the Verdict pricing study (see paragraph 11.73) most retailers surveyed, including Dixons, Comet, HoF, Alders, Argos, Homepower, NORWEB and Powerhouse, were selling the Sony SLV-E70 at the RRP of £499.99. Only Miller Bros appeared to be offering a lower price (£20 below RRP, a discount of 4 per cent). During the sample period, the modal value for this Sony product was at the RRP, 51 per cent of observations were within 5 per cent of the RRP, and the covar was 7.2 (see Table 11.3 and Figure 17 in Appendix 11.1). We were unable to establish the net prices at which Dixons, Comet and the RECs obtained this model from Sony during the sample period.

11.91. The Toshiba V 804 B was launched in the UK market at an RRP of £449.99 in August 1994 and discontinued 19 months later (February 1996). During the sample period it was the 13th-best-selling VCR (excluding retailers' own-label and exclusive models), and Dixons accounted for 34 per cent of sales and Comet a further 17 per cent, though it was also sold by other retailers (see Table 11.4). It was replaced in February 1996 by the V 825 B model at an RRP of £449.99.

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\*Figures omitted. See note on page ii.

11.92. The RRP remained unchanged during this product's model life (as did the trade price) and Toshiba, we were told, did not fund any sales promotions until the period before the model was to be replaced. At that time (from August 1995 through to February 1996), Toshiba agreed to supply this product as an exclusive model to Dixons at a net buying price reduced by £60 (excluding VAT). Dixons continued to sell this VCR for a while at the RRP of £449.99, we were told, though the retail price was subsequently reduced by £20 and then £50 until February 1996, when Dixons reduced the selling price to £349.99 to clear stocks.

11.93. At the time of the pricing study, the modal value for the Toshiba V 804 B was at the RRP of £449.99, 63 per cent of observations were within 5 per cent of the RRP, and the covar was 5.0 (see Table 11.3 and Figure 19 in Appendix 11.1).

## Pricing analysis of hi-fi systems

### Price distribution data

11.94. The data used in our analysis of the prices of hi-fi systems (and of those of the other reference goods) are explained in detail in paragraphs 11.4 to 11.36. The price distributions obtained for the 12 hi-fi systems included in our sample, all big-selling models of the major brands, are shown in the form of bar charts in Figures 25 to 36 in Appendix 11.1. The price data and the statistical measures used are summarized in Table 11.5, and a breakdown of the proportion of sales of each model through different retailers (or groups of retailers)<sup>1</sup> is set out in Table 11.6.

TABLE 11.5 Analysis of pricing data: hi-fi systems

<i>Brand/model</i>	<i>Units sold*</i>	<i>RRP £</i>	<i>Price observations within ± 5% of RRP (%)†</i>	<i>Modal value band‡</i>	<i>Covar§</i>
<i>Sony</i>					
COMP 190	2,208	329.99	15.9	£295	5.2
MHC 550 <sup>□</sup>	2,107	329.99	18.9	£295	5.9
MHC 650 <sup>□</sup>	905	379.99	37.2	RRP	8.5
<i>Aiwa</i>					
Z1100	537	399.99	64.4	RRP	6.2
<i>JVC</i>					
ADG S20 <sup>□</sup>	2,074	369.99	12.7	£325	6.4
UXA 4	1,500	299.99	86.4	RRP	5.5
<i>Technics</i>					
SCCH 510	2,259	449.95¶	86.8	RRP	6.5
	499.95	(£445)			
SCHH 505 <sup>□</sup>	621	599.99	55.7	RRP	6.5
<i>Kenwood</i>					
UD 302 <sup>□</sup>	2,145	349.95¶	71.5	RRP	8.1
M 28 G	1,144	499.95¶	78.1	RRP	5.8
UD 202	511	349.95¶	59.9	RRP	7.1
<i>Sanyo</i>					
550	221	249.99	85.4	RRP	4.5
Total	16,232				

Source: GfK, suppliers and MMC.

\*Volume of sales used in the pricing analysis; includes sales by all retailers, but excludes catalogue/mail order (and Rumbelows) during the period 19 February to 25 March 1995 (see paragraph 11.15).

†See paragraph 11.34.

‡Value bands are in £5 units designated by the lower bound: the £295 band, for example, includes all price observations between £295.00 and £299.99 (see paragraph 11.15). The modal band indicates where most prices were observed to be (see paragraph 11.33).

§The covar is a measure of the spread of prices, and is calculated as the standard deviation divided by the mean value, expressed as a percentage (see paragraph 11.36).

¶For these models, the RRP represents the supplier's promotional price (see paragraph 11.13).

□ 'End-of-line' product, ie model at or close to the end of its product life (see paragraphs 11.28 (c) and 11.97).

<sup>1</sup>The figures in Table 11.6 exclude sales through catalogue/mail order and Rumbelows. Comparable data which include these retailers are given in Table 3 in Appendix 11.3.

11.95. As shown in Table 11.5, the total volume of sales (and price observations) included in the analysis was about 16,000. We estimate that these represent about 8 per cent of the total sales of hi-fi systems in the UK during the February/March 1995 sample period (for the full year 1995 total sales were about 2.0 million, at a retail value of £522 million: see Table 7.3).

11.96. As explained in more detail in paragraphs 7.104 to 7.106, differences in the prices of hi-fi systems reflect the sound output and system size (micro, mini and midi), general build and component quality, speaker capacity and other features (for example, multi-play CD facilities). For most supplier-branded hi-fi systems, retail prices are in the range £200 to £500, though retailers' own-label and secondary brand products are often slightly cheaper, whilst some up-market models can cost significantly more (for example, £800 to £900, but sometimes much more). In our sample of big-selling models, the range of RRP's was £250 to £600. As explained in paragraph 11.15, footnote 2, RRP's and retail prices are almost always at so-called price points of, for example, £329.99 rather than £330.

11.97. As indicated in Table 11.5, five of the 12 hi-fi systems in our sample (the Sony MHC 550 and 650 models, the JVC ADG S20 (see paragraph 11.107), the Technics SCHH 505 and the Kenwood UD 302) were end-of-line products. All models had an identifiable RRP (see paragraph 11.12). In four cases (the Kenwood models and the Technics SCCH 510) the RRP was the supplier's 'promotional' price, and in one case (the Technics SCCH 510) the RRP changed during the sample period, so that this model is shown in the table as having two distinct RRP's.

11.98. Of the 12 hi-fi systems in our sample, the modal value band was at the RRP (or one of the two RRP's) in nine cases. Two of the other three (the Sony MHC 550 and the JVC ADG S20-see paragraph 11.109) were end-of-line models. The remaining model, the Sony COMP 190, is considered further in paragraphs 11.113 to 11.115. For six of the seven fully current models, 60 per cent or more of the price observations were within 5 per cent of the RRP: the exception was the Sony COMP 190. For all but two models, the covars were in the range 4.5 to 7.1 (the Sony MHC 650 was at 8.5 and the Kenwood UD 302 was 8.1: both were end-of-line models).

11.99. CA also collected information on retailers' displayed prices for two models of hi-fi systems for its May 1995 *Which?* report and two other models for its June 1996 *Which?* report. In the May 1995 report, the Kenwood UD 302 (which was one of the models in our sample) was priced at £349.99 in Dixons together with five other retailers. We note that, as indicated in Table 11.5, this was the supplier's RRP at the time-a '£50 off' promotional price-and that Dixons accounted for just over 40 per cent of sales of this model. For the other model, the JVC UXT1, some retailers were observed to be charging £299.99 (which we were told was the RRP), but others, including Dixons and Comet, had a 'special offer' price at that time of £269.99 (some £30 below the RRP). In the June 1996 *Which?* report, which was a more limited survey, Dixons and Powerhouse were asking the same price of £369.99 (the RRP) for the JVC C220 model, though Comet was reported as selling this model at £279.99 (some £70 below the RRP). For the other model, the Aiwa NSX V30, Dixons and Comet were both offering this at £20 below what we were told was the RRP of £299.99.

11.100. As shown in Table 11.6, some of the models included in our pricing analysis were sold through both the major retailers, Dixons and Comet, as well as through other retailers, with their respective shares of sales being broadly comparable, allowing for the exclusion of mail order, to their overall shares of hi-fi system sales (though Dixons' share was higher than might be expected on the basis of its overall position in the market for hi-fi systems: see Table 7.7). However, four models (the JVC UX4 and the Kenwood products) were sold through Dixons, which accounted for 40 to 80 per cent of sales, but not through Comet, and one (the Sanyo 550) was semi-exclusive to Comet and not available from Dixons (though it was sold by mail order companies: see Table 3 in Appendix 11.3). Dixons and Comet were not, therefore, in 'head-to-head' competition with respect to these models, though apart from the Sanyo 550 they were also available from other high street retailers. Overall, Dixons accounted for 43 per cent of sales of the models in our sample, and Comet for 9 per cent. Only one model, the Technics SCHH 505 (an above-average-priced and

end-of-line product), was not on offer in either Dixons or Comet, most sales (73 per cent) going through 'other retailers'.

TABLE 11.6 Hi-fi systems included in the MMC pricing analysis: shares of sales\* by retailers

Brand/model	per cent					
	Dixons	Comet	RECs	Other retailers†	Residual‡	Total§
<i>Sony</i>						
COMP 190	47.5	6.7	21.9	18.2	5.8	100.0
MHC 550	48.6	10.0	3.0	38.3	0.0	100.0
MHC 650	21.3	4.6	34.8	39.2	0.0	100.0
<i>Aiwa</i>						
Z1100	16.2	15.6	26.3	38.9	3.0	100.0
<i>JVC</i>						
ADG S20	36.5	19.0	20.9	23.6	0.0	100.0
UXA 4	72.0	0.3	1.9	25.8	0.0	100.0
<i>Technics</i>						
SCCH 510	30.7	13.5	17.6	38.2	0.0	100.0
SCHH 505	0.0	0.0	27.2	72.8	0.0	100.0
<i>Kenwood</i>						
UD 302	41.2	0.0	24.4	34.4	0.0	100.0
M 28 G	83.7	0.0	7.6	8.7	0.0	100.0
UD 202	60.7	0.0	2.3	37.0	0.0	100.0
<i>Sanyo</i>						
550	0.0	88.7	0.0	0.0	11.3	100.0
Weighted average¶	43.3	8.5	16.4	30.7	1.0	100.0

Source: GfK and MMC.

\*Volume of sales used in the pricing analysis, covering the period 19 February to 25 March 1995; excludes sales through catalogue/mail order and Rumbelows (see paragraph 11.15).

†Includes smaller multiple retailers, department stores and small retailers: see paragraph 11.8.

‡Includes sales which could not be allocated to particular retailers or groups of retailers, together with GfK weighting factors.

§Rows of percentage shares may not sum exactly to 100 due to rounding.

¶Weighted by the sales volume of each model.

11.101. We were told by a number of retailers and suppliers that it is not uncommon for specific model variants to be sold through some retailers but not others, because retailers often seek to stock models that are different from those of their closest competitors. During the sample period there were, according to GfK, over 500 different supplier-branded models available (of which the top 70 models accounted for 50 per cent of sales) in addition to retailers' own-label products. In this situation, retailers may opt to stock either a slightly different and 'semi-exclusive' model from the same supplier or brand, or a comparable model from a different supplier. There are also the major retailers' own-label products (Comet's Goodmans and Dixons' Matsui brands, for example: see paragraph 7.134). Model and range differentiation were considered in paragraphs 8.108 and 8.109, and 9.95 to 9.99.

11.102. Some suppliers suggested to us that the inclusion of non-EPOS price data on sales by small retailers, ie of data which related to in-store ticket prices rather than transaction prices, might lead to some distortion of the price distributions by excluding in-store, negotiated discounts which may be granted by such retailers. About 75 per cent of the data were transaction prices, according to GfK, though the proportions varied between different models of hi-fi-system. It was not possible to obtain information directly on the extent of any negotiated discounts on sales of hi-fi systems covered by our pricing analysis or on their quantitative impact, but in response to these concerns we undertook a sensitivity analysis in which we segregated, as far as possible, the EPOS from the non-EPOS data.

11.103. For the EPOS category, this in practice meant focusing the analysis wholly on returns from Dixons, Comet and the RECs, and thus excluding from the analysis the data from 'other retailers' (including the EPOS figures from department stores and the smaller multiples-about 10 to 15 per cent of the total-and also the residuals: together, these data accounted for 32 per cent of the total). The resulting EPOS-only figures are shown in Table 1 in Appendix 11.6. For two models of hi-fi systems, the modal value was no longer at the RRP, £50 below in the case of the Technics SCHH 505, which was an end-of-line model sold mainly through 'other retailers'. Of the seven fully current models, the data for two of them indicated more sales

below the RRP; the data for the other five indicated either little change or an increase in the proportion of sales at or within 5 per cent of the RRP price band, in one case by 30 percentage points. The covars were not greatly different. The various factors affecting the EPOS data were discussed in paragraphs 11.4 to 11.36.

11.104. Taking all the hi-fi systems together (but excluding the five end-of-line models) the EPOS-only data showed that 43 per cent of observations were recorded as being within 5 per cent of the RRP. The overall covar was 5.5.

11.105. For the non-EPOS category, we examined the data from 'other retailers'; whilst this consisted mainly of non-EPOS information, it also included the EPOS returns from outlets such as department stores (JLP and HoF) and multiples such as Boots, Tempo and Colorvision. The results are shown in Table 2 in Appendix 11.6. For two models (the Kenwood UD 302 and UD 202), the modal values were no longer at the RRP price band; both were sold mainly through Dixons. Leaving aside the Sanyo 550 which was not sold through 'other retailers', the other modal values were in the same price bands as in Table 11.3. Of the six current models (excluding the Sanyo 550), the proportion of observations within 5 per cent of the RRP was higher for three models and lower for the other three. An extreme example was the Kenwood UD 202, for which the proportion fell from 60 to 9 per cent, based on about 190 observations; this model was sold mainly through Dixons. The covar for the Aiwa Z1100 fell to 3.5, whilst that for the Kenwood UD 302 rose to 11.0; others were not greatly different.

11.106. Taking all the hi-fi systems together (but excluding the end-of-line models and the Sanyo 550) the data showed that 70 per cent of the non-EPOS observations were recorded as being within 5 per cent of the RRP. The overall covar was 8.5.

11.107. Aiwa provided certain price information on its own hi-fi systems. For 12 models in total, it gave us the relevant RRP, together with the average selling price (based on GfK data) in the month of December in the four years 1992 to 1995. In each case, the average selling price was very close to the RRP; Aiwa told us that these models were subject to limited availability at the time, which coincided with the pre-Christmas peak in demand, and retailers had no incentive to price below the RRP. Subsequently, it also gave us details of prices in April and May 1996 (about one year into our inquiries) for seven Aiwa hi-fi system models, one of which (the Z1500 midi system: RRP £399.99) was the same as in its previous analysis. Aiwa told us that it had been overstocked for much of the 12-month period leading up to April/May 1996, though the models covered had sold well. End-of-line models were not identified, but Aiwa told us that all its models were changed each April/May. The data provided were the average recorded prices (for each model) in each of those two months, expressed as a proportion of the RRP. The figures (average prices/RRP) varied between about 60 and 90 per cent across models, and there were also some differences between April and May. Aiwa told us that these figures suggested that a significant number of sales were at prices below the RRP, and that there was no uniformity across models in the relationship between transaction prices and RRP (see also paragraph 13.100). In the case of the Z1500, the average selling price was very close to the RRP in December 1995, but 10 per cent below in April/May 1996.

### ***Price history analysis***

11.108. In order to examine suppliers' pricing policies over the life cycle of their hi-fi systems, we carried out a study of the price histories of three different models. Two of them were included in the sample used for our main pricing study (the Sony COMP 190 and the JVC ADG S20), but the other, the Sanyo DCD8, had not been covered because it was obsolescent. In selecting these particular models, we took into account the need to examine products from different suppliers, the relative importance of individual models in terms of overall sales, and the nature of the price distribution data and other information available at the time.

11.109. JVC's ADG S20 was an above-average-priced hi-fi system, launched in the UK market at an RRP of £369.99 in April 1994 and discontinued about 12 months later in March 1995. During our sample period, therefore, it was an end-of-line product, albeit the fifth-best-selling hi-fi system in the UK (excluding retailers' own-label and exclusive models). It was sold by all types of retailer; Dixons accounted for 37 per cent of sales (see Table 11.6). It was superseded during the sample period by the ADG S200 model with an RRP of £329.99, though JVC told us that significant quantities of the ADG S20 model continued to be sold for a further six months.

11.110. The RRP remained unchanged during this product's model life (as did the trade price) and JVC, we were told, did not initiate any special sales promotions during its life, and did not negotiate any reduced buying prices to major retailers in order to clear stocks prior to this model being discontinued.

11.111. At the time of the pricing study, the modal value for the JVC ADG S20 model was at the £325 value band (suggesting a retail price of £329.99-£40 below the RRP), only 13 per cent of observations were within 5 per cent of the RRP, though 78 per cent were within 5 per cent of the modal value band; the covar was 6.4 (see Table 11.5 and Figure 29 in Appendix 11.1).

11.112. The trade price of the JVC ADG S20 was £[ \* ] (excluding VAT). Selling at the RRP of £369.99 would imply a gross margin of [ \* ] per cent (calculated as a percentage of the RRP, excluding VAT). In practice, however, this understates the total gross margin available to retailers because, as explained in paragraph 11.55, other discounts and allowances were given: the total margin would have been about [\* ] per cent.

11.113. The Sony COMP 190 was also an above-average-priced hi-fi system, which was launched in April 1994 at an RRP of £329.99 and discontinued about two years later in March 1996. During the sample period, it was the second-best-selling hi-fi system in the UK (excluding retailers' own-label and exclusive models). It was sold by all types of retailer, though Dixons' share and that of the RECs was relatively high and that of `other retailers' low (see Table 11.6). This model was replaced in April 1996 by the COMP N200 with the same RRP of £329.99.

11.114. The RRP remained unchanged during this product's model life (as did the trade price), but it was the subject of three £30 consumer cash-back promotions by Sony (4 December 1994 to 28 January 1995, 29 May to 29 July 1995, and 26 December 1995 to 24 February 1996). As explained in paragraph 11.57, under the terms of these promotions a buyer of this model was given a claim form by the retailer at the time of purchase which, if completed and returned to Sony, allowed the buyer to claim back a cheque for £30.

11.115. At the time of the pricing study, the modal retail price for the COMP 190 model was at the £295 value band (suggesting a retail price of £299.99-£30 below the RRP), and only 16 per cent of observations were within 5 per cent of the RRP, though 73 per cent were within 5 per cent of the modal value band; the covar was 5.2 (see Table 11.5 and Figure 25 in Appendix 11.1).

11.116. The Sanyo DCD8 was launched in August 1994 at an RRP of £249.99, but discontinued less than six months later in January 1995 because sales, we were told, were unsatisfactorily low. Sanyo stated that soon after its launch it became clear that the DCD8 was insufficiently competitive. Sanyo therefore reduced the RRP by £20 to £229.99 in October 1994, and provided an allowance to retailers of £10 per unit sold (ie essentially a `sales-out' promotion which continued until this model was withdrawn). Even at the reduced price, sales remained low. Although sales to retailers ceased in January 1995, retailers continued to sell it from existing stocks (it was the 67th-best-selling hi-fi system during the sample period) and it was also available through mail order.

## **Pricing analysis of camcorders**

### ***Price distribution data***

11.117. The data used in our analysis of camcorder prices (and those of the other reference goods) are explained in detail in paragraphs 11.4 to 11.36. The price distributions obtained for the 11 camcorders<sup>1</sup> included in our sample, all big-selling models of the major brands, are shown in the form of bar charts in Figures 37 to 47 in Appendix 11.1. As with the other reference goods, our aim was to choose models which were not about to be withdrawn from the market (and in the generality of cases, replaced by newer models). In the event, because camcorder model lives are short, only four of the 11 camcorders analysed were `fully current' models. The price data and the statistical measures used are summarized in Table 11.7 and a breakdown of the proportion of sales of each model through different retailers (or groups of retailers)<sup>1</sup> is set out in Table 11.8.

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\*Figures omitted. See note on page ii.

TABLE 11.7 Analysis of pricing data: camcorders

<i>Brand/model</i>	<i>Units sold*</i>	<i>RRP £</i>	<i>Price observations within ± 5% of RRP (%)†</i>	<i>Modal value band‡</i>	<i>Covar§</i>
<i>Panasonic</i>					
NV-A1B¶	1,107	549.99	52.0	RRP	6.5
NV-R30B¶	610	699.95	58.9	RRP	6.8
<i>JVC</i>					
GR-AX40 EK¶	1,439	599.99	4.5	£545	5.9
GR-AX60 EK¶	593	699.99	14.7	£645	5.6
<i>Sony</i>					
TR350	1,084	549.99	62.2	RRP	7.5
FX200¶	729	499.99	57.9	RRP	9.9
TR550	606	799.99	71.3	RRP	5.3
<i>Sanyo</i>					
VMR-Z2P/R	244	549.99	85.7	RRP	7.7
VME-X22P¶⊠	210	599.99	44.8	£590	8.7
<i>Canon</i>					
UC 100¶	553	699.99	85.2	£670	4.5
<i>Sharp</i>					
VLE-31H	447	799.99**	75.6	RRP	4.9
Total	7,622				

Source: GfK, suppliers and MMC.

\*Volume of sales used in the pricing analysis; includes sales by all retailers, but excludes catalogue/mail order (and Rumbelows) during the period 19 February to 25 March 1995 (see paragraph 11.15).

†See paragraph 11.34.

‡Value bands are in £5 units designated by the lower bound: the £645 band, for example, includes all price observations between £645.00 and £649.99 (see paragraph 11.15). The modal band indicates where most prices were observed to be (see paragraph 11.33).

§The covar is a measure of the spread of prices, and is calculated as the standard deviation divided by the mean value, expressed as a percentage (see paragraph 11.36).

¶'End-of-line' product, ie model at or close to the end of its product life (see paragraph 11.28(c)).

⊠Sanyo told us that the recorded sales for this model appeared higher than it would have expected and that this cast some doubt on the reliability of the GfK data.

\*\*For this model, the RRP represents the supplier's promotional price (see paragraphs 11.13 and 11.135).

<sup>1</sup>One model (the Samsung VP-U10) was excluded because GfK advised us that the data were insufficiently reliable: see paragraphs 11.137 and 11.138.

<sup>1</sup>The figures in Table 11.8 exclude sales through catalogue/mail order and Rumbelows. Comparable data which include these retailers are given in Table 4 in Appendix 11.3.

TABLE 11.8 Camcorders included in the MMC pricing analysis: shares of sales\* by retailers

Brand/model	<i>per cent</i>					
	<i>Dixons</i>	<i>Comet</i>	<i>RECs</i>	<i>Other retailers†</i>	<i>Residual‡</i>	<i>Total§</i>
<i>Panasonic</i>						
NV-A1B	24.1	18.3	12.6	44.9	0.0	100.0
NV-R30B	20.5	10.3	13.6	55.6	0.0	100.0
<i>JVC</i>						
GR-AX40 EK	58.8	12.4	7.6	21.2	0.0	100.0
GR-AX60 EK	60.2	13.0	7.1	19.7	0.0	100.0
<i>Sony</i>						
TR350	33.6	24.3	11.0	31.2	0.0	100.0
FX200	20.3	11.8	17.6	50.3	0.0	100.0
TR550	50.0	5.0	9.6	35.5	0.0	100.0
<i>Sanyo</i>						
VMR-Z2P/R	0.0	1.2	16.4	82.4	0.0	100.0
VME-X22P	0.0	25.2	42.9	31.9	0.0	100.0
<i>Canon</i>						
UC 100	0.0	0.0	15.0	85.0	0.0	100.0
<i>Sharp</i>						
VLE-31H	73.8	7.6	16.3	2.2	0.0	100.0
Weighted average¶	35.9	13.0	12.7	38.4	0.0	100.0

Source: GfK and MMC.

\*Volume of sales used in the pricing analysis, covering the period 19 February to 25 March 1995; excludes sales through catalogue/mail order and Rumbelows (see paragraph 11.15).

†Includes smaller multiple retailers, department stores and small retailers: see paragraph 11.8.

‡Includes sales which could not be allocated to particular retailers or groups of retailers, together with GfK weighting factors.

§Rows of percentage shares may not sum exactly to 100 due to rounding.

¶Weighted by the sales volume of each model.

11.118. As explained more fully in paragraph 7.150, there are three main types of camcorder (for non-professional use) available in the UK market, of which two are analogue and the third is digital. The majority use the 8mm tape format (analogue), which may be either the standard 8mm or the superior-quality, and higher-cost, Hi-8 version. Most others (also analogue) use the VHS-C (compact VHS) tape cassette: again, there is a standard VHS-C version and a higher quality and cost variant, known as 'Super VHS-C'. In addition, digital format camcorders, which offer superior recording quality, have recently been introduced into the UK market; with retail prices typically around £1,500 to £2,000, digital camcorders are significantly more expensive than the other formats, and sales at present are limited.

11.119. For each of the two main types of analogue camcorder (8mm and VHS-C, and variants thereof), differences in prices in part reflect the level of specification and the various features offered by given models, for example the type/power of the zoom lens, date and time recording facilities etc. For most supplier-branded analogue camcorders, retail prices are in the range £500 to £900, though secondary brand products are up to £100 cheaper, whilst some higher-specified models can cost significantly more (over £1,000). In our sample of big-selling models (seven of which used the standard 8mm format and four used VHS-C), the range of RRP's was £500 to £800.<sup>1</sup>

11.120. As shown in Table 11.7, the total volume of sales (and price observations) included in the analysis was over 7,500. We estimate that these represent about 23 per cent of the total sales of camcorders in the UK during the February/March 1995 sample period (for the full year 1995, total sales were 345,000, with a total retail value of £204 million: see Table 7.4).

11.121. As mentioned in paragraph 11.117 and also indicated in Table 11.7, as a result of the relatively short model lives of camcorders, 7 of the 11 models in our sample (both the Panasonic models, both the JVC models, the Sony FX200, the Sanyo VME-X22P and the Canon UC 100), were end-of-line products, though JVC told us that significant quantities of its GR-AX40 and GR-AX60 EK models continued to be sold for a

<sup>1</sup>As explained in paragraph 11.15, footnote 2, RRP's and retail prices are almost always at so-called price points of, for example, £629.99 rather than £630.

further six months. All models had an identifiable RRP (see paragraph 11.12). In only one case (the Sharp VLE-31H model) was the RRP the supplier's 'promotional' price (see paragraph 11.137).

11.122. For 7 of the 11 camcorders in our sample, the modal value band was at the RRP. For the other four (the two JVC models, the Sanyo VME-X22P and the Canon UC 100<sup>1</sup>), modal values were below the RRP (by effectively £50 in the case of the two JVC camcorders); all were end-of-line models. For the four fully current models, 60 per cent or more of the price observations were within 5 per cent of the RRP. For all but two models, the covar was in the range 4.5 to 7.7 (the Sony FX200 was at 9.9, and the Sanyo VME-X22P was 8.7: both were end-of-line models).

11.123. CA also collected information on retailers' displayed prices for 17 camcorder models for its report in *Which?* magazine of December 1996. Other information collected was made available to us by CA which found a high degree of price uniformity in retailers' displayed prices for camcorders, including the models reported on (which differed from those in our sample). For four models we were able to compare the prices quoted in *Which?* with RRPs; we note that in all cases the *Which?* prices were at the RRP.

11.124. As shown in Table 11.8, most of the models covered in our pricing analysis were sold through both the major retailers, Dixons and Comet, as well as through other retailers, with their respective shares of sales being broadly comparable to their overall shares of camcorder sales (see Table 7.7). The Sanyo VME-X22P, however, was handled by Comet, which accounted for 25 per cent of sales, but not by Dixons. Comet and Dixons were not, therefore, in 'head-to-head' competition with respect to this model, though it was also available from the RECs and other retailers. The two JVC camcorders, and more particularly the Sharp VLE-31H, were sold mainly through Dixons. Two models, the Sanyo VMR-Z2P/R and the Canon UC 100 (an end-of-line product), were in effect not sold by either Dixons or Comet; most sales (82 to 85 per cent) were handled by 'other retailers'. Overall, these retailers accounted for 38 per cent of sales of the sample models, compared with 36 per cent for Dixons and 13 per cent for Comet.

11.125. More generally, we were told by a number of retailers and suppliers that it was not uncommon for specific model variants to be sold through some retailers but not others, because retailers often seek to stock models that are different from those of their closest competitors. During our sample period, there were, according to GfK, about 150 different supplier-branded models of camcorder available in the UK market (of which the top 50 accounted for about 70 per cent of sales). In this situation, retailers may opt to stock either a slightly different and 'semi-exclusive' camcorder from the same supplier or brand, or a comparable model from a different supplier. Dixons also offers an own-label brand, Chinon, though sales are small (see paragraph 7.162). Model and range differentiation were considered in paragraphs 8.108 and 8.109, and paragraphs 9.95 to 9.99.

11.126. Some suppliers suggested to us that the inclusion of non-EPOS price data on sales by small retailers, ie of data which related to in-store ticket prices rather than transaction prices, might lead to some distortion of the price distributions by excluding in-store, negotiated discounts which may be granted by such retailers. About two-thirds of the data were transaction prices, according to GfK, though the proportions varied between different models of camcorder. It was not possible to obtain information directly on the extent of any negotiated discounts on sales of camcorders covered by our pricing analysis or on their quantitative impact, but in response to these concerns we undertook a sensitivity analysis in which we segregated, as far as possible, the EPOS from the non-EPOS data.

11.127. For the EPOS category, this meant focusing the analysis wholly on returns from Dixons, Comet and the RECs, and thus excluding from the analysis the data from 'other retailers' (including the EPOS figures from department stores and the smaller multiples-about 10 to 15 per cent of the total-and also the residuals: together, these data accounted for 38 per cent of the total). The resulting EPOS-only figures are shown in Table 1 in Appendix 11.7. The modal values for most models were unchanged and for the four current models they continued to be at the RRP price band. For these four models the proportion of sales at or within 5 per cent of the RRP price band was not greatly different for three models. For the other model (the Sanyo VMR-Z2P/R) the proportion fell sharply from 86 to 40 per cent and the covar rose to 14.1; this model

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<sup>1</sup>The price distribution for the Canon UC 100 camcorder is bi-modal. Sales at RRP were mainly those handled by the RECs, whilst many of those at the £670 modal value band were by 'other retailers', which accounted for 85 per cent of total sales. Some prices, however, were recorded as having been above the RRP, which Canon considered to be surprising and unlikely. It added that Colorvision had informed Canon that some of its recorded sales values would have included the value of extended warranties.

was sold mainly through 'other retailers' and the number of EPOS observations was small (43). Excepting this Sanyo model, the covars were not greatly different. The various factors affecting the EPOS data were discussed in paragraphs 11.4 to 11.36.

11.128. For the four fully current camcorder models, the data showed that 68 per cent of observations were recorded as being within 5 per cent of the RRP. The overall covar was 5.5.

11.129. For the non-EPOS data category, we examined the data from 'other retailers'; whilst this consisted mainly of non-EPOS information, it also included the EPOS returns from outlets such as department stores (JLP and HoF) and multiples such as Boots, Tempo and Colorvision. The results are shown in Table 2 in Appendix 11.7. For one model (the Sony TR350), the modal value was no longer at the RRP price band (£15 below). The other modal values were much the same as in Table 11.7. For three of the four current models, the modal value continued to be at the RRP price band, and the proportion of observations within 5 per cent of the RRP was somewhat higher (though in one case—the Sharp model—sales through 'other retailers' were trivial); the exception, in both respects, was the Sony TR350. The covar increased markedly for three models (the Sony TR350 and FX200 and the Sanyo VME-X22P), whilst for three others (the Sony TR550, the Sanyo VMR-Z2P/R and the Sharp VLE-31H, for which there were only ten price observations), the covar fell; others were not greatly different.

11.130. For the four fully current camcorder models the data showed that 72 per cent of the non-EPOS observations were recorded as being within 5 per cent of the RRP. The overall covar was 7.3.

### ***Price history analysis***

11.131. In order to examine suppliers' pricing policies over the life cycle of camcorders, we carried out a study of the price histories of three different camcorder models. Two of these (the JVC GR-AX60 EK and the Sharp VLE-31H) were included in the sample used for our main pricing study, but the other (the Samsung VP-U10) had been excluded because the data were judged to be insufficiently reliable (see paragraphs 11.138 and 11.139). In selecting these particular models, we took into account the need to examine products from different suppliers, the relative importance of individual models in terms of overall sales, and the nature of the price distribution data and other information available at the time.

11.132. The JVC GR-AX60 EK (VHS-C format) was the seventh-largest-selling camcorder (excluding exclusive models) during our sample period. It was launched in the UK at an RRP of £699.99 in April 1994 and discontinued about 12 months later (March 1995). During our sample period, therefore, it was an end-of-line product and, although stocked by various types of retailer, Dixons accounted for 60 per cent of sales (see Table 11.8). It was superseded during the sample period by the GR-AX 400, which was introduced at an RRP of £649.99.

11.133. The GR-AX60 EK was subject to a JVC-initiated 'sales-out' promotion (see paragraph 11.13) in January 1995, with the savings offered available from all retailers stocking this and related models. More particularly, JVC granted an extra discount to its dealers and set a correspondingly lower, promotional RRP of £649.99 (a reduction of £50). Although the trade price at which dealers were invoiced remained unchanged, they were given, retrospectively, an extra allowance of about £35 for each unit sold during the specified period. This 'sales-out' promotion was for January only (ie prior to our sample period), but the model, as mentioned already, was at the end of its product life and in the process of being replaced (by the GR-AX 400). JVC stated that no specially reduced prices were negotiated either with Dixons or other retailers at the end of this model's life which would have affected the price distribution data we obtained from GfK.

11.134. At the time of the pricing study, the modal value for the GR-AX60 EK model was at the £645 value band (suggesting a retail price of £649.99-£50 below the RRP), only 15 per cent of observations were within 5 per cent of the RRP, though 71 per cent were within 5 per cent of the modal value band, and the covar was 5.6 (see Table 11.7 and Figure 40 in Appendix 11.1).

11.135. The trade price for the GR-AX60 EK was £[\*] (excluding VAT). Selling at the RRP of £699.99 would have implied a gross margin of [\*] per cent (calculated as a percentage of the RRP, excluding VAT).

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\*Figures omitted. See note on page ii.

In practice, however, the total gross margin available to retailers would have been about [\* ] per cent, because other discounts and allowances were given.

11.136. The Sharp VLE-31H (8mm format, which incorporated what Sharp told us was a novel viewfinder system) was an above-average-priced camcorder, which was launched in the UK in June 1994 at an RRP of £899.99, and discontinued about 12 months later in June/July 1995. During the sample period, it was nearing the end of its model life, though it was also the ninth-best-selling camcorder in the UK (excluding exclusive models). Although it was available from various retailers, Dixons accounted for 74 per cent of sales (see Table 11.8). When this model was discontinued, there was no direct replacement: Sharp told us that the nearest equivalent was the VL-E37H, which was launched in August 1995 at an RRP of £699.99.

11.137. The VLE-31H was subject to a Sharp-initiated 'sales-out' promotion which began in January 1995, but ran during the sample period and until the model was discontinued. This was offered through all retailers stocking this model. More particularly, Sharp granted an extra, retrospective discount to dealers of £60 (excluding VAT) for each unit sold. Sharp told us that 'this was in the knowledge that at least the major retailers (if not all) would reduce the resale price correspondingly to £799.99 (a reduction of £100)'. We have interpreted the latter as a promotional RRP.

11.138. At the time of the pricing study, the modal value for the VLE-31H model was at the promotional RRP (£799.99), with 76 per cent of observations within 5 per cent of the RRP, and the covar was 4.9 (see Table 11.7 and Figure 47 in Appendix 11.1).

11.139. As mentioned in paragraph 11.131, we also sought information on the Samsung VP-U10 (8mm) camcorder, which was the fifth-best-selling model during our sample period. The VP-U10 was launched in September 1994 at an RRP of £529.99 (the trade price was £[\* ], excluding VAT, implying a gross margin of [\* ] per cent before other discounts and allowances). Samsung stated that it did not itself initiate any sales promotions in relation to this model. It added, however, that CIH had run such a promotion based on a reduced retail price during the sample period, which had been largely funded by promotional allowances from Samsung. The RRP for this model was reduced as from 1 April 1995 (just after our sample period) to £449.99, and subsequently further reduced to £429.99 in October of that year.

11.140. We decided not to include this model in our pricing analysis. The VP-U10 was not stocked by either Dixons or Comet, and the EPOS data were derived entirely from the RECs which were selling it at a retail price of £449.99—the RRP applicable shortly after, but not during, the sample period. The non-EPOS price data from other retailers showed two-thirds of all sales to have been at a price which, after deducting VAT, was below the trade price (excluding any other available discounts or allowances), which seems improbable commercial practice. On investigation, we were told that the underlying sample could not be regarded as representative, and GfK therefore advised that the data on this model were not sufficiently reliable for our purposes.

## **Comments by suppliers and retailers on the pricing studies**

11.141. Some suppliers and retailers noted that our pricing studies indicated a degree of clustering of retail transaction prices at the RRP. However, concerns were expressed by several suppliers (including Sony, Panasonic, JVC, Sanyo, Aiwa and Canon) about the data and the methodology used; most of these were addressed in paragraphs 11.4 to 11.36. The main concerns expressed were:

- (a) that the period covered was too short to be representative, and had ignored pricing dynamics (see paragraph 11.9);
- (b) concentration on best-selling models exclusively had biased the results toward price convergence at the RRP (see paragraphs 11.10 and 11.11);
- (c) the weekly averaging of the EPOS data would have reduced the observed dispersion of prices (see paragraphs 11.29 and 11.30);
- (d) there were no objective standards by which to judge the covars (see paragraph 11.36);

- (e) the use of displayed prices for small retailers meant that in-store discounts granted by such retailers had not been recorded, so that the data failed to show the full range of transaction prices (see paragraphs 11.17 to 11.20); and
- (f) that the data had not recorded non-price offers (such as interest-free credit) and therefore had understated the degree of retailer competition (see paragraphs 11.4 and 11.28(f)).

11.142. Arguments were also put forward about the appropriate conclusions to be drawn. It was claimed by some that the data failed to establish an association between transaction prices and RRP. The argument was also advanced that, to the extent that there was an association, it did not arise from the influence of RRP, but instead reflected the effects of a high degree of price visibility in the reference goods markets and the intensity of competition.

11.143. In a paper submitted on behalf of Sony and Sanyo, Lexecon stated that there were flaws in the argument that the setting of RRP reduced competition in pricing. On the basis of an analysis of the price data for all four reference goods taken together, Lexecon made the following points:

- (a) There was no evidence that price clustering was caused by the use of RRP.
- (b) A high degree of price clustering was to be expected in a competitive market for high-value goods since search costs as a proportion of purchase costs were low compared with markets for lower-priced goods such as CDs or video games; consumers therefore had a greater incentive to shop around and retailers also had more incentive to ensure that their prices were not out of line with their competitors.
- (c) The price data collected for reference brown goods did not reflect interest-free credit, free accessories etc.
- (d) The fact that modal prices were often at RRP should also be disregarded (in the case of three of the television price distributions, about 75 per cent of observations were away from the RRP). Lexecon argued that there were two plausible explanations why the modal price was often close to the RRP. First, a supplier would use an RRP to indicate to the market the price at which it believed a model would sell. When it judged correctly the value which consumers would place on the product, sales would occur at or around the RRP; but when the supplier had been too optimistic, it would typically adjust the RRP to reflect actual market conditions, moving the RRP to the point at which sales were occurring.
- (e) Lexecon argued that the mean or median price might be the more relevant measure for comparison; the mean variance between the RRP and the average price for reference brown goods covered in the pricing study was 5.7 per cent on the basis of root-mean-square (RMS) differences (on the basis of mean absolute differences, the average variance was 4.5 per cent).
- (f) Lexecon also contended that as the MMC had previously concluded that low covars of retail prices (in the USA) were consistent with a more competitive market for video games, it would be inconsistent to conclude that low covars in the reference goods were an indication of lack of competition.
- (g) There was no absolute base against which to make comparisons of covars.
- (h) The MMC's analysis of covars demonstrated no adverse effect on competition and provided no evidence that the use of RRP was contrary to the public interest.

11.144. To test the hypothesis that retail prices for the reference goods tend to reflect RRP, Lexecon used two types of econometric model (a standard, ordinary least squares (OLS) model, and a weighted least squares (WLS) model, with data points weighted by volumes of sales for each product). These models employed a limited number of secondary statistics derived from the basic GfK data on price observations for all four reference brown goods, specifically to test the extent to which covars were associated with price observations at or close to the RRP. In the regression analysis, the covar was the dependent variable. The independent variables used in the models were the logarithm of units sold; the logarithm of average prices; the four-firm supplier concentration ratio for each product category; the percentage of sales within 5 per cent of

RRP; dummy variables for four of the major manufacturers, Sony, Panasonic, Toshiba and Mitsubishi; and a dummy variable for cases where RRP's were defined by the MMC to be 'promotional' prices.

11.145. In the two models, the 'within 5 per cent' coefficient was not statistically different from zero, since the t-value was less than the 1.96 threshold for significance at the 95 per cent level.<sup>1</sup> Lexecon argued that, according to the MMC, a higher proportion of sales at or close to the RRP should be associated with reduced price variability, and claimed that its models found no evidence of this relationship.

11.146. In the latter stages of our inquiries, Sony and Lexecon submitted further GfK-based pricing evidence relating to three Bush products (two televisions and one VCR), which are supplied by Alba-see paragraph 8.51. Sony and Lexecon argued that Bush should be regarded as a 'control case' since Bush did not issue RRP's and that the pricing data on the Bush models selected exhibited covars that were not statistically different from those in our pricing analysis. This showed, they said, that RRP's were not the main factor determining the dispersion of prices. Alba, however, told us that it did suggest retail prices for its Bush branded reference goods (and its other brands-see paragraph 10.12).

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<sup>1</sup>For the OLS model the t-value for the 'within 5 per cent' coefficient was 1.514, and for the WLS 1.301.