ANNEX 1: THE PARTIES TO THE UK DOMESTIC RULES

MasterCard UK Members Forum Limited (MMF)
MasterCard Europe sprl (MCE)
MasterCard International Incorporated (MCI)

Members of MMF:

Abbey National plc
AIB Group (UK) plc
Alliance & Leicester plc
Bank of Ireland Group
Barclays Bank plc
Capital One Bank (Europe) plc
C. Hoare & Co.
GE Capital Bank Limited
Goldfish Bank Limited
HBOS plc
HSBC Bank plc
Lloyds TSB Bank plc
MBNA Europe Bank Limited
Morgan Stanley Bank International Limited
National Australia Group Europe Limited
The Co-operative Bank plc
The Royal Bank of Scotland Group

Annex 1 of this Decision includes all those members of MMF and licensees of
MCE/MCI which MMF has identified as having been Parties to the UK Domestic Rules
between 1 March 2000 and 18 November 2004. Changes involving the Parties which
have occurred since 18 November 2004 are noted to provide an up-to-date record.
Formerly known as MEPUK and MEPUK (2002). See paragraph 21.
Formerly known as EPI. The change of name took effect from 16 July 2002. See
footnote 24.
The above-listed members of MMF, except National Australia Group Limited, are (or
were) principal licensees of MCE/MCI.
Became a wholly owned subsidiary of Banco Santander Central Hispaner S. A. on 12
November 2004. [REDACTED].
AIB Group (UK) plc trades as First Trust Bank in Northern Ireland and Allied Irish Bank
(GB) elsewhere in the UK.
Alliance & Leicester plc’s issuing business was bought by MBNA Europe Bank in
2002 and its acquiring business was sold in April 2004 to EuroConex Technologies UK
Ltd. [REDACTED].
[REDACTED].
[REDACTED].
[REDACTED].  In August 2003, Lloyds TSB Bank plc acquired the credit card business
of Goldfish Bank Limited, which [REDACTED].
Formerly Morgan Stanley Dean Witter Bank Limited. The change of name occurred on
2 August 2004.
An affiliate licensee of MCE/MCI. [REDACTED].
UK principal licensees of MCE/MCI - not members of MMF:

Allied Irish Banks plc
Bank of Butterfield (UK) Limited
Bank One N.A.
Banque Invik S.A.
Beneficial Bank plc
Butterfield Bank (UK) Limited
Citibank International plc
Citifinancial Europe plc
Clydesdale Bank plc
Creation Financial Services Limited
Egg Banking plc
Liverpool Victoria Banking Services Limited
London Scottish Bank plc
National Bank of Greece S.A.
National City Bank, Indiana
National Westminster Bank plc
Nationwide Building Society
Northern Rock plc
People’s Bank
Providian National Bank
The Woolwich plc

Affiliate licensees of MCE/MCI (details of their sponsors are included in brackets):

ABN Amro Bank NV (MBNA Europe Bank Limited)
Alliance & Leicester Commercial Bank plc (Alliance & Leicester plc)

\[617\] Allied Irish Banks plc is the Irish parent company of AIB Group (UK) plc.
\[618\] [REDACTED].
\[619\] Sold its credit card business in the UK to Halifax plc on 21 June 2000 and [REDACTED].
\[620\] [REDACTED].
\[621\] Formerly Leopold Joseph and Sons Limited an affiliate licensee of MCE/MCI sponsored by the Royal Bank of Scotland plc. The change of name took place on 13 August 2004. [REDACTED].
\[622\] Formerly Associates Capital Corporation plc. The change of name dates from 11 April 2003. [REDACTED].
\[623\] [REDACTED].
\[624\] [REDACTED].
\[625\] [REDACTED].
\[626\] Formerly Frizzell Bank Limited. [REDACTED].
\[627\] [REDACTED].
\[628\] [REDACTED].
\[629\] [REDACTED].
\[630\] Became part of the Royal Bank of Scotland Group in 2000. [REDACTED].
\[631\] [REDACTED].
\[632\] [REDACTED].
\[633\] [REDACTED].
\[634\] [REDACTED].
\[636\] Formerly Girobank plc. The change of name took effect from 7 July 2003.
Barnsley Building Society (MBNA Europe Bank Limited)
Bradford & Bingley Building Society (MBNA Europe Bank Limited)
Bristol & West plc (Bank of Ireland) 637
Cater Allen Limited (Abbey National plc) 638
Cheshire Building Society (MBNA Europe Bank Limited)
Coutts & Co. (National Westminster Bank plc)
Direct Line Financial Services Limited (The Royal Bank of Scotland plc)
Dunfermline Building Society (MBNA Europe Bank Limited) 639
First National Bank plc (Abbey National plc/GE Capital Bank Limited) 640
GE Consumer Credit Services Limited (GE Capital Bank Limited) 641
Halifax plc (Bank of Scotland) 642
HFC Bank Limited (HSBC Bank plc) 643
HSBC Private Bank (UK) Limited (HSBC Bank plc) 644
John Lewis Financial Services Limited (HSBC Bank plc) 645
Kleinwort Benson Investment Management Limited (Liverpool Victoria Banking Services Limited, formerly Frizzell Bank Limited)
Lambeth Building Society (The Royal Bank of Scotland plc) 646
Leeds and Holbeck Building Society (Morgan Stanley Bank International Limited) 647
Leek United Building Society (MBNA Europe Bank Limited) 648
Lloyds TSB Bank Scotland plc (Lloyds TSB Bank plc)
Lombard Bank Limited (The Royal Bank of Scotland plc)
Marks & Spencer Financial Services Limited (HSBC Bank plc) 649
Northern Bank Limited (Clydesdale Bank plc)
Nottingham Imperial Building Society (The Royal Bank of Scotland plc) 650
Progressive Building Society (MBNA Europe Bank Limited)
Rea Brothers Limited (MBNA Europe Bank Limited) 651
Robert Fleming & Co. Ltd. (Abbey National plc) 652
Royal Bank of Scotland Advanta (The Royal Bank of Scotland plc) 653
Royal Bank of Scotland Cards Limited (The Royal Bank of Scotland plc) 654
Scottish Widows Cards Limited (Lloyds TSB Bank plc)
Stroud and Swindon Building Society (MBNA Europe Bank Limited) 655

637 [REDACTED].
638 [REDACTED].
639 [REDACTED].
640 Sold by Abbey National plc to GE Capital Group in February 2003. [REDACTED].
641 [REDACTED].
642 [REDACTED].
643 [REDACTED]. Became part of the HSBC Group in 2003 and [REDACTED].
645 [REDACTED].
646 [REDACTED].
647 [REDACTED].
648 [REDACTED].
649 [REDACTED]. Marks & Spencer Financial Services Limited was acquired by HSBC Bank plc in November 2004 and [REDACTED].
650 [REDACTED].
651 [REDACTED].
652 [REDACTED].
653 [REDACTED].
654 [REDACTED].
655 [REDACTED].
Style Financial Services Ltd (The Royal Bank of Scotland plc)
Sun Banking Corporation Limited (MBNA International Bank Limited)
Sygma Banque UK
Tesco Personal Financial Services Limited (The Royal Bank of Scotland plc)
Ulster Bank Ltd (National Westminster Bank plc)
West Bromwich Building Society (The Royal Bank of Scotland plc)
Yorkshire Bank plc (Clydesdale Bank plc).

656 [REDACTED].
657 [REDACTED].
658 [REDACTED].
659 [REDACTED].
ANNEX 2: HYPOTHETICAL MONOPOLIST TEST IN THE ISSUING MARKET

1. The OFT has considered the effect of a 5-10 per cent increase in price imposed by a hypothetical monopolist card issuer via an increase in interest rates. First the OFT has considered the size of increase in interest rates necessary to increase cardholder charges by 5-10 per cent. Then the evidence on the elasticity of demand for credit card balances with respect of interest rates has been considered. The next step is to calculate the critical sales loss figures and the predicated actual sales loss figures.

2. According to MMF, interest revenue accounts for between [between 50-60] per cent and [between 65-75] per cent of cardholder charges. The difference between these figures depends in part on whether interchange revenue is included as part of cardholder charges or not. The figure of [between 50-60] per cent includes interchange revenue in the calculation of cardholder charges and therefore should be more appropriately defined as a percentage of issuer revenue rather than cardholder charges.660 By reference to figures supplied by issuers to the OFT in July 2004 the OFT estimates that interest revenue accounts for [between 55-65] per cent of issuer revenue and [between 65-75] per cent of cardholder charges.661 The smaller the proportion of cardholder charges accounted for by interest revenue the greater the required increase in interest rates to generate a five per cent increase in cardholder charges. Using the OFT’s figures for cardholder charges interest rates must increase by [between 6.7-7.7] (between 13.3-15.4) per cent in order to increase the weighted average price to cardholders by 5 (10) per cent. The OFT believes that it is appropriate to examine an increase in cardholder charges, and therefore it is these latter figures which it is correct to adopt. However the OFT’s conclusions in this case do not depend on whether an increase in cardholder charges or issuer revenue is considered.662

3. The Bank of England collects data on effective interest rates on credit card balances. The effective interest rate in the UK on credit card balances was 14.55 per cent in June 2004.663 This implies that a 7.7 per cent increase in interest rate (a 5 per cent increase in weighted average price if interest income accounts for 65 per cent of the card holder charges) would involve a 112 basis point increase in the interest rate, from 14.55 per cent to 15.67 per cent.

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660 Footnote 43 at Annex 1, Joint written representation on the SO, states that the [between 50-60] per cent refers to issuer revenue.
661 Issuer revenue is calculated as cardholder charges plus interchange fee income.
662 Since interest income accounts for [between 55-65] per cent a 5 per cent increase in issuer revenue would require an increase in interest rate of [between 7.7-9.1] per cent.
663 Bank of England, Monthly average of UK resident banks’ sterling weighted average interest rate, credit card loans to households (in per cent) not seasonally adjusted, Data series CFMHSDG.
4. The OFT has considered the available empirical evidence on the sensitivity of credit card demand to interest rates. A recent US study has estimated the responsiveness of consumers holding credit card debt to interest rates.\textsuperscript{664} This study has the advantage that it examined cardholder account data and looked at actual consumer responses to actual changes in interest rates rather than survey data based upon surveyed cardholders’ responses to hypothetical price changes. The study looked at 24,000 credit card accounts over two years. This study estimated the elasticity of credit card debt to interest rate changes at -0.85.

5. It should be noted that the headline figure stated in Gross and Souleles is -1.3. However this figure is greater in absolute terms than is relevant for the analysis of the effect of an increase by a hypothetical monopolist credit card issuer for two reasons. First, the study shows that consumer debt is more responsive to reductions in interest rates than to increases in interest rates. For example an increase in interest rate of one percentage point leads to a reduction in credit card debt of $90 whereas a reduction in interest rate of one percentage point leads to an increase in credit card debt of $320.\textsuperscript{665} The elasticity of -1.3 represents an average of these two effects. The hypothetical monopolist test relates specifically to an increase in price. Secondly, the -1.3 elasticity includes reductions in balances held where consumers shift balances between credit cards. Such balance shifting between cards is not relevant to the situation of a hypothetical monopolist since for a hypothetical monopolist it is the net balance across all cards and not the balance on a single card which matters. Accounting for such balance shifting, the reported elasticity is -0.85. However it should be noted that this figure is the average elasticity across both reductions and increases in rates.

6. In addition to considering the effect of an increase in interest rates on balances and issuers’ interest income, consideration must be made of the effect on the value of transactions made using credit and charge cards and the transaction-related income. If interest rate increases reduce transaction values, then reductions in transaction-related income, such as MIF income, must be considered. The OFT does not consider that transactors would adjust their transaction behaviour in response to a change in interest rates since it is an element of price which they do not face. The proportion of transaction value that is non-revolving, and therefore does not attract interest, is [50-75] per cent.\textsuperscript{666} Since the behaviour of most transactors will be unaffected by the increase in interest rates the OFT has considered the change in transaction volume from revolvers in response to an interest rate increase.

7. Revolvers may lower their balances in response to an interest rate increase by either paying off a greater proportion of the balances at the end of the month or lowering the value of transactions or a combination


\textsuperscript{665} Gross, D and Souleles, N (2002), page 171.

\textsuperscript{666} EDC 2002 Study, page 10.
of the two. Alternatively, faced with an increase in interest rates a cardholder may simply stop using his or her credit card. In Joint written representations on the SO, MMF has pointed to an estimate based upon a survey it commissioned which indicated that the elasticity of demand for transactions with respect to interest rates is \(-1\).2.

8. The critical sales loss is the proportion of sales that a hypothetical monopolist would have to lose in order to render a price increase unprofitable. By comparing the critical sales loss with the actual sales loss predicted by the elasticity of demand a formal analysis of the hypothetical monopolist test is possible. The critical sales loss depends upon both the size of the price increase and the current price cost margin of the firm.667 In particular if \(t\) is the proportionate increase in price, and \(m\) is the margin for linear demand the critical sales loss will be \(t/(m + 2t)\). For iso-elastic demand the equivalent formula is \(1-(1+t)/(m+t)\).

9. The OFT has examined the effect of increases in interest rates on balances and transaction. MMF’s own SSNIP test analysis has used a margin of \(>20\) per cent and that is used here in the absence of additional information on the margin.669 The critical and actual sales loss figures for two cases are reported in Table Annex 2.1 below.

10. Case 1: A 5-10 per cent increase in cardholder charges. The elasticity of debt to interest rate is -0.85 and is applied to that proportion of income which is interest. Is assumed, for the purpose of the calculation, that the Parties figure of \(-1\) is appropriate for transaction related income, and conservatively all non interest income is assessed as transaction related.

11. Case 2: A 5-10 per cent increase in issuer revenue. The same assumed elasticities are used. The OFT does not believe this to be the relevant case. Nevertheless this case indicates that it would still be profitable for a hypothetical monopolist issuer to raise issuer revenue by 5-10 per cent via interest rates.

667 The price cost margin is the proportionate mark-up of price on cost.
Table Annex 2.1: Critical Sales Loss Analysis

<table>
<thead>
<tr>
<th>Percentage Increase in Average Price</th>
<th>5 per cent</th>
<th>10 per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Sales Loss (Linear Demand)</td>
<td>[REDACTED].</td>
<td>[REDACTED].</td>
</tr>
<tr>
<td>Critical Sales Loss (Iso-elastic Demand)</td>
<td>[REDACTED].</td>
<td>[REDACTED].</td>
</tr>
<tr>
<td>Predicted Actual Sales Loss: Case 1</td>
<td>[REDACTED].</td>
<td>[REDACTED].</td>
</tr>
<tr>
<td>Predicted Actual Sales Loss: Case 2</td>
<td>[REDACTED].</td>
<td>[REDACTED].</td>
</tr>
</tbody>
</table>

12. The predicted actual sales loss figures presented here, whether considering an increase either in cardholder charges (Case 1 above) or issuer revenue (Case 2 above), are considerably lower than the critical sales loss required to render the price increase unprofitable for either the case of linear demand or the case of iso-elastic demand. These figures indicate that if a hypothetical monopolist credit card issuer were to increase interest rates sufficiently to increase the weighted average price of cardholding by 5-10 per cent, it would be profitable to do so.

13. The OFT believes in addition that the actual sales loss figure presented here is likely to overestimate the true sales loss that would actually occur from the increase in interest rates for the following reasons:

   (i) The estimate uses a value of the elasticity of credit card debt to interest rate that is averaged across increases and decreases in interest rates. For increases in interest rates the estimated responsiveness to interest rates is lower.\(^{670}\)

   (ii) The estimates assume that all non interest income is related to transaction value and ignores fixed income such as annual fees. To the extent that income is fixed and independent of use then it will not be lowered by an increase in interest rates and the actual sales loss will be lower.

14. MMF has noted that, because of the two-sided nature of demand for credit card transactions, each side of demand cannot be considered in isolation and that for a complete analysis it is necessary to consider consequential effects on the other side of demand.\(^{671}\) The OFT accepts that, in theory, a reduction in cardholder demand for credit card transactions as a result of an increase in cardholder charges could lead to a reduced number of merchants accepting credit cards and that, in turn, could lead to a further reduction in cardholder demand. The OFT notes in this respect:

   (i) The prospective increase in interest rates that a hypothetical monopolist credit card issuer would impose above the

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\(^{670}\) Gross, D and Souleles, N (2002).

\(^{671}\) Page 36 at Annex 3, Joint written representations on the SR14.
competitive level does not necessarily reduce credit card transactions. An increase in interest rates may result in a reduction in transaction volume but may, alternatively, result in more rapid payment of balances without reducing transactions. In this case there would be no consequential effect on merchants.

(ii) Evidence provided by MMF indicates that merchants do not believe the credit facility offered by issuers to be a major contributor to incremental spending.\(^{672}\) Annex 5 of this Decision also shows that empirical evidence from a recent study based on data for the UK shows no discernable effect of the extended credit facility on retail sales. On that basis the OFT does not believe that card acceptance by merchants would be influenced by a small but significant increase in interest rates imposed by a hypothetical monopolist issuer.

(iii) While MMF has noted the theoretical possibility of the feedback from one side of demand to the other, the Parties have not provided any estimate of the magnitude of the effect.

15. Therefore, on the basis of the evidence considered here, the OFT has concluded that a hypothetical monopolist credit card issuer would be able to profitably increase the price to cardholders, via interest rates, by a small but significant amount.

\(^{672}\) See paragraph 4 at Annex 1, Joint written representations on the SR14. See also Annex 8 of this Decision, which discusses the results of this survey and indicates that on average merchants do not believe that the extended credit facility contributes to incremental spend.
ANNEX 3: OXERA STUDY ON BENEFITS TO MERCHANTS FROM THE EXTENSION OF CREDIT

1. [REDACTED].673 This report described a study analysing credit card account data and examining the effect of increases in credit limits on credit card balances. Subsequently, a second report which used the same data to analyse the effect of the credit limit on sales was submitted by [REDACTED].674 In their representations Oxera and the Parties refer to a similar analysis of US credit card data by Gross and Souleles.675 The conclusion that the Parties draw from these studies is that an increase in a cardholder’s credit limit increases both the level of borrowing that a cardholder undertakes and the value of purchases that are made on that card. This is taken to demonstrate that the credit facility of a credit card benefits merchants through increased sales.

2. The argument put forward by Oxera is that liquidity constraints, in the form of limits on the amount of credit that can be advanced on a card, can reduce credit card borrowing. Thus the extension of credit in the form of increased credit limits can lead to increased borrowing. [REDACTED]. Gross and Souleles, in a similar US study, found that an increase in credit limit of $100 would increase the card balance by between $10 and $14. The Oxera study finds that a £100 increase in the credit limit on average leads to an increase in credit card balance of £0-10, but this varies between types of cardholders between £0-10 and £20-30. Oxera conclude that “these results confirm that the extension of credit does result in real increases in balances and hence spending. Thus the credit feature of the payment product is beneficial to merchants as a whole as well as on an individual basis.” (Paragraph 11, The Oxera study)

3. The OFT considers that there are both conceptual problems with the study and also problems with the econometric analysis undertaken by Oxera such that the Parties’ conclusions from this study cannot be accepted.

4. The first point is that an increase in borrowing on a card does not necessarily mean that spending has increased on that card. Instead, cardholders may respond by paying off a card balance more slowly, rather than spending more as a result of the increase in credit limit. Therefore, there is no necessary link between borrowing and sales. Without such a link, evidence that increased credit limits increase borrowing is not evidence that sales are increased by the extension of credit. This argument applies equally to Gross and Souleles and to the Oxera study.

5. Oxera indicates that, following Gross and Souleles, it is adopting the correct approach by focusing on balances.676 However Gross and Souleles

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673 [REDACTED].
674 [REDACTED].
675 Gross, D and Souleles, N (2002).
676 [REDACTED].
focus on balances rather than sales because they are concerned with a
different question from the question posed by Oxera. They are explicitly
cconcerned with the effects of credit limits on borrowing rather than
transactions. “Credit cards are used for both transactions and borrowing
purposes. To distinguish the two uses, the key dependent variable is
interest incurring debt” (Page 158, Gross and Souleles).

6. The supplementary analysis submitted by Oxera analyses the effects of
credit limits on sales. [REDACTED]. It finds that an increased credit limit
of £100 leads to additional sales of [£0-10] in the six months after the
increase in credit limit.

7. An important problem with this analysis is that the increases in credit
limit occurred between August and December, i.e. in the run up to
Christmas. Therefore the comparison is of cumulative sales in a six-month
period including Christmas compared to a six-month period that excludes
Christmas. This is relevant for the following reason: credit card borrowing
can be used to shift the timing of purchases without altering the overall
level of sales. For those cardholders with a higher credit limit, the
opportunity for shifting the timing of spending is greater than for those
with lower limits. Therefore, it could be expected that these cardholders
would have a more pronounced seasonal pattern to spending than those
with lower credit limits, even though the overall level of sales is the
same. Oxera does not control for this effect and the failure to account for
such seasonal shifts in credit card spending means that the results cannot
be relied upon.

8. Econometric analysis of the data provided by Oxera that does account for
such seasonal variation is reported in Tables 3-4 below. Rather than
analyse cumulative sales, monthly sales data was used with monthly
dummy variables in order to isolate the seasonal effects. The results of
this estimation are presented in Table Annex 3.3 below. Overall, the
estimates indicate that monthly sales fall slightly in response to an
increase in credit limit (by [£0-0.50] for each £100 increase in credit limit)
after controlling for the level of sales using monthly dummies. However, it
is clear that even this masks seasonal variation in the effect of credit
limits. The results in Table Annex 3.4 below include interaction effects
that allow the effect of credit limit on sales to vary across months. The
results show that an increase in credit limit leads to an increase in
spending in October, November and December, the months leading up to
Christmas, but leads to lower spending in other months. This effect is
consistent with the prediction that credit limits enable cardholders to alter
the timing of spending. However it does not show that overall spending is
increased by the extension of credit, since the reductions in spending in
subsequent months more than counteract the Christmas increase in
spending. While it may be the case that the ability to shift the timing of
spending is beneficial to consumers, there is no reason to believe that
merchants benefit from a more unbalanced seasonal distribution of
spending.

9. It should be noted that even if the results of this study did indicate that
an increase in the credit limit on a card would induce a cardholder to
spend more on that card, which is not the case from the OFT’s analysis, this would not in itself provide direct evidence of an increase in total retail sales. Such an increase on one card could result from the cardholder switching purchases from one card (or other payment method) to another, so that although spending on the card with the increased limit may increase, spending by the cardholder as a whole may not.

10. [REDACTED]. This conclusion cannot be accepted. Suppose that a cardholder pays off the balance in full each month, benefiting from the interest-free period, except for the bill after Christmas. In this case the average outstanding balance across the year may increase following an increase in credit limit if more spending occurs at Christmas as a result. It does not follow that the increased borrowing is caused by the interest-free period, indeed the Christmas borrowing results from the cardholder foregoing the interest-free period. Therefore, this cannot be relied on as evidence of the benefit of the interest-free period. In addition, as indicated above, the results do not demonstrate any increase in total spending by cardholders as a result of the increase in the credit limit.

11. In summary, the OFT does not find any support for the view that either the extended credit facility or the interest-free period leads to a permanent increase in retail sales in the evidence presented in the Oxera study or the study by Gross and Souleles.

Econometric analysis of Oxera data

12. In order to check the robustness of the estimates provided in the Oxera study, alternative models of balances and sales were estimated by the OFT. [REDACTED]. In the first check on robustness, a regression which in addition included dummy variables for all months was estimated. The results of this estimation are presented in Table Annex 3.1 below. This broadly confirms the robustness of the Oxera result with respect to balances by indicating that a £100 increase in credit limit leads to £0-10 increase in balance. Then a further regression was estimated for which separate interaction terms were included for each month. This allows the effect of the credit limit on balances to vary by month. The results for this are presented in Table Annex 3.2 below. These results indicate that there is some seasonal variation in the effect on borrowing. The effect of an increase in credit limit of £100 in December was to increase balances by £0-10 but the effect is smaller in other months.

13. Oxera does not provide estimates for an effect on monthly sales of the change in credit limit. However, in Table Annex 3.3 below the results are presented for the effect of a change in credit limit on monthly sales, including monthly dummy variables but no interaction terms. These results show that, overall, an increase in credit limit of £100 leads to a fall in average monthly sales of £0-0.50. Table Annex 3.4 below includes interaction terms that allow the effect of credit limit on sales to vary across months. These results indicate that the effect of an increase in the credit limit of £100 is to increase sales in December by £1.00-3.00, sales are also increased in October and November but sales are reduced in January through to June. The net effect on sales is negative.
Table Annex 3.1: Dependent variable - Change in Monthly balances

[REDACTED]
| Table Annex 3.2: Dependent variable - Change in Monthly balances |
| [REDACTED] |
Table Annex 3.3: Dependent variable - Change in monthly sales

[REDACTED]
<table>
<thead>
<tr>
<th>Table Annex 3.4:</th>
<th>Dependent variable - Change in Monthly sales</th>
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</thead>
<tbody>
<tr>
<td>[REDACTED]</td>
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</tbody>
</table>
ANNEX 4: EFFECT OF THE MMF MIF ON RETAIL PRICES

1. The Parties have questioned the view that a reduction in the MMF MIF will lead to a reduction in retail prices. This Annex sets out why it is likely that an increase in the MMF MIF will lead to an increase in average retail prices. Further, this Annex presents scenarios based upon estimates of the costs to merchants of different payment methods that reinforce this presumption. The costs to merchants of alternative payment methods vary.

2. A reduction in the MMF MIF would normally be expected to be passed on in full or in part by acquirers in the form of reduced MSCs to merchants. The MMF MIF represents a large proportion of an MSC and, as a marginal cost to acquirers, would be expected to feed directly into price setting to merchants. Similarly, an MSC represents a marginal cost to the merchant of a MasterCard transaction. Under normal competitive conditions, it is reasonable to expect that merchants will pass on the lower marginal costs in the form of lower prices to customers. This is the direct effect of a reduction in the MMF MIF on retail prices and this raises a presumption that a reduced MIF will lead to reduced payment costs for merchants and hence (assuming normal competitive conditions in retailing) reduced prices for customers.

3. The reduction in the MMF MIF may also have an indirect effect on the payment costs of merchants. If a reduction in the MMF MIF induces some customers to alter their choice of payment method, then, since different payments vary in their cost to merchants, a change in the composition of payment methods may change the average transaction cost of merchants. This indirect effect may reinforce the direct effect if, as a result of the reduction in the MMF MIF, customers switch from more expensive to cheaper payment methods. Alternatively, the indirect effect may counteract the direct effect if, as a result of the reduction in the MMF MIF, customers switch from cheaper to more expensive payment methods. Alternatively, if the reduction in the MMF MIF leads to no net change in the composition of payment methods, then the indirect effect is zero and the presumption of the direct effect remains. A priori, therefore, it is not possible to identify the direction of the indirect effect. However, in order to reverse the presumption of the direct effect, it would be necessary to demonstrate that: first, the indirect effect involves net substitution to more expensive payment methods, and, secondly, that this net substitution is on a sufficient scale to outweigh the direct effect.

4. The Parties have argued, countering the argument that the MMF MIF is passed on in higher retail prices, that, as card acceptance increases retail sales to merchants, it is for the OFT to rebut the presumption that this increased sales volume will lead to lower unit costs for merchants.\footnote{Paragraph 5.71, Joint written representations on the SO.}
5. The OFT does not accept this argument. First, the argument relates to card acceptance *per se*, rather than an increase or reduction in the MMF MIF. Secondly, the OFT has considered carefully the evidence for a relationship between credit card use and increased aggregate retail sales (see paragraphs 616-624 above and Annexes 3 and 5 of this Decision) and has concluded that there is no relationship. Thirdly, even if as a result of the increase in the MMF MIF some merchants were to benefit individually in terms of increased sales at the expense of other merchants, and even if that effect were to change the unit costs of retailers, neither of which is established, the net effect on unit costs of retailers is indeterminate. Unit costs at retailers may or may not increase or decrease in response. Accordingly, the OFT does not believe that there is any evidence that this effect can be presumed to counteract the direct effect of an increase or reduction in the MMF MIF on retail prices.

6. In order to examine whether there are circumstances such that the indirect effect may be substantial enough to counteract the direct effect of the reduction in MIF on merchant costs, the OFT has constructed various scenarios to examine the magnitude of potential indirect effects.

7. In the first group of scenarios, the effect of a reduction in the MMF MIF on merchant costs is analysed in the context that, if the MMF MIF falls, consumers may substitute to either Visa credit and charge cards or one of the smaller card schemes, such as Amex. The scenarios examine the effect on merchant payment costs per thousand average MasterCard transactions. The average value of a credit card transaction is taken as £60. According to figures provided by the Parties, the cost to a merchant of accepting a card transaction, excluding an MSC, is between 0-0.5% of transaction value. In the scenarios we have adopted the 0-0.5%, but the analysis is robust to variations in this range.

8. An average MasterCard and Visa credit card MSC of 1.2% is assumed, which implies a total merchant cost per transaction of 1.4%. An average MSC for Amex transactions of 2.5% is assumed, implying a total merchant cost per transaction of 2.7%.

9. Since, *a priori*, the effect of a reduction in the MMF MIF on substitution patterns cannot be determined, the following options have been considered:

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Footnote 224, Joint written representations on the SO.

Footnote 221, Joint written representations on the SO. Sensitivity analysis indicates that the results presented below are qualitatively robust even if the Amex MSC is allowed to vary between 2.5% and 3.5%. If the lower merchant cost of 2-3%, which is the Parties' calculation, is adopted then fewer scenarios than implied in Table Annex 4.1 would lead to a cost increase for merchants. With a lower merchant cost for charge cards as the required substitution between MasterCard and Amex to counteract the direct effect would be greater.
Scenario options

10. The results of the following scenario options are set out Table Annex 4.1:

- MMF MIF falls, leading to a reduction in MasterCard MSC of 0.1% of transaction value, i.e. from 1.2 to 1.1 per cent.
- MMF MIF falls, leading to a reduction in MasterCard MSC of 0.4% of transaction value, i.e. from 1.2 to 0.8 per cent.
- MasterCard transaction volume is left unchanged by the fall in MIF.
- MasterCard transaction volume falls by 10%, 30% or 50% respectively due to the fall in MIF.
- MasterCard transaction volume increases by 10%, 30% or 50% respectively due to the fall in MIF.
- When MasterCard volume decreases (increases), two thirds of transactions switch to (from) Visa cards and one third of transactions to (from) Amex.
- When MasterCard volume decreases (increases), four out of five of transactions switch to (from) Visa cards and one fifth of transactions to (from) Amex.
- When MasterCard volume decreases (increases), all transactions switch to (from) Visa cards and no transactions to (from) Amex.

11. Based upon these assumptions, we can calculate the cost saving to merchants from the reduction in MIF under different combinations of the scenarios. These results are presented in Table Annex 4.1 below.

12. Column three of the Table indicates the direct effect, assuming that there is no net change in transactions as a result of the reduction in the MMF MIF. This direct effect always leads to a cost saving to merchants and hence a price reduction to consumers. If a reduction in the MMF MIF leads to an increase in MasterCard transactions, the effect is that the more expensive Amex, and now more expensive Visa transactions, are reduced, so the indirect effect is positive, leading to further cost savings for merchants. If the volume of MasterCard transactions falls then the overall cost savings to merchants will depend on the size of the switch and the proportion switching to the more expensive Amex cards. If transactions were to switch only to Visa then the indirect effect could not outweigh the direct effect and there would be overall cost savings to merchants. It is only if there is a substantial reduction in MasterCard transactions combined with a significant proportion of those transactions switching to Amex that the costs to merchants increase.
13. Amex is basically a charge card scheme, although it issues a small number of credit cards, and overall the volume and value of UK transactions made on Amex credit and charge cards are much lower than the volume and value of transactions made on MasterCard and Visa credit and charge cards. Also, the number of merchants who accept Amex credit and charge cards is significantly fewer than the number of merchants who accept MasterCard and Visa credit and charge cards.

| Table Annex 4.1: Cost saving to merchants (£ per thousand transactions) |
|-------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Fall in MSC | Visa /Amex | Direct effect | Decrease in MC transactions | Increase in MC transactions |
|             |                |                | 10% | 30% | 50% | 10% | 30% | 50% |
| 0.1%       | 66:33         | 60             | 28  | -36 | -100 | 92  | 156 | 220 |
| 0.4%       | 66:33         | 60             | 28  | -36 | -100 | 92  | 156 | 220 |
| 80:20      | 60             | 38.4           | -4.8| -48 | 118  | 234 | 350 |
| 100:0       | 54             | 42             | 30  | 66  | 78   | 90  |
| 0.1%       | 66:33         | 240            | 190 | 90  | -10  | 290 | 390 | 490 |
| 0.4%       | 80:20         | 240            | 200.4| 121.2| 42   | 316 | 468 | 620 |
| 100:0       | 240            | 216            | 168 | 120 | 264  | 312 | 360 |

14. The Parties have also suggested that the costs of cash are higher than the costs of credit card use. If true, there is the possibility that, if credit card usage is affected by a reduction in the MMF MIF, substitution to cash may increase the overall costs of transactions to merchants. The Parties estimate that the costs of cash to merchants are (1.5-2)% of transaction value. The BRC estimates a somewhat lower figure of 0.68% of transaction value. The OFT has considered whether, if credit card MIFs were to fall, substitution to other forms of payment, such as debit card or cash, would lead to an indirect effect sufficient to outweigh the direct effect and lead to an increase in costs for merchants. For this analysis, the higher figure of (1.5-2)% cited by the parties has been adopted. The assumed cost of the debit card MSC is 15p per transaction, to which is added the 0.2% per transaction non-MSC costs.

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681 See paragraph 3 of this Decision.
682 See Tables 4 and 5 of this Decision where Amex, along with Diners and JCB, is included under ‘Other’. It has been estimated that in 2004 the volume of UK transactions made on UK-issued Amex charge cards was 61 million (around 25.4 per cent of the total volume of UK charge card transactions) at a value of £8.7 billion (around 33 per cent of the total value of UK charge card transactions); and that in 2004 the volume of UK transactions made on UK-issued Amex credit cards was 3 million (around 0.2 per cent of the total volume of UK credit card transactions) at a value of £191 million (around 0.2 per cent of the total value of UK credit card transactions): Datamonitor, UK Plastic Cards 2005 DMFS1744 (June 2005), excel datapack.
683 See Tables 7 of the FACTS International Merchant Survey indicated that of 1000 merchants accepting at least one brand of credit card, 31 per cent accepted Amex cards compared with 99 per cent acceptance of MasterCard and Visa cards.
684 BRC: Costs of Collection Survey Results (July 1999). See also paragraphs 5.74-5.76, Joint written representations on the SO.
685 The qualitative results reported are not sensitive to the choice of debit card MSC. Adopting any value between 7p and 20 gives very similar qualitative results.
under various options similar to those considered above have been employed. In this case, the scenario is based upon a general reduction in credit card MSCs and the comparison is whether there is any substitution as a result to debit card or cash usage.

**Scenario options**

15. The results of the following scenario options are set out Table Annex 4.2:

- Credit card MIF falls, leading to a reduction in MSC of 0.1% of transaction value, i.e. from 1.2 to 1.1 per cent.
- Credit card MIF falls, leading to a reduction in MSC of 0.4% of transaction value, i.e. from 1.2 to 0.8 per cent.
- Credit Card transaction volume is left unchanged by the fall in MIF.
- Credit Card transaction volume falls by 10%, 30% or 50% respectively due to the fall in MIF.
- Credit Card transaction volume increases by 10%, 30% or 50% respectively due to the fall in MIF.
- When credit card volume decreases (increases), half of transactions switch to (from) debit cards and half of transactions to (from) cash.
- When credit card volume decreases (increases), two thirds of transactions switch to (from) debit cards and one third of transactions to (from) cash.
- When credit card volume decreases (increases), one third of transactions switch to (from) debit cards and two thirds of transactions to (from) cash.

16. The results of these scenarios are presented in Table Annex 4.2 below. As before, the direct effect is indicated as a benchmark and is always positive, representing a cost saving to merchants. In this case, in each of the scenarios where credit card transactions fall, the indirect effect either reinforces the direct effect or is insufficient to outweigh the direct effect. Therefore, the scenarios indicate that, if credit card transactions were to fall following the reduction in MIF, which is what the Parties argue, there would be cost savings to merchants. There are three scenarios where the costs to merchants do not fall. However, these would be the cases where, following a small reduction in an MSC, there would be a significant increase in credit card transactions and the majority of this shift came from the cheaper debit card transactions to the more expensive credit card transaction. With a larger reduction in an MSC, the direct effect outweighs the indirect effect in all cases and there are cost savings to merchants in all of those scenarios.
Table Annex 4.2: Cost saving to merchants (£ per thousand transactions)

<table>
<thead>
<tr>
<th>Fall in MSC</th>
<th>Debit/Cash Effect</th>
<th>Direct effect</th>
<th>Decrease in CC transactions</th>
<th>Increase in CC transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10%</td>
<td>30%</td>
<td>50%</td>
<td>10%</td>
</tr>
<tr>
<td>0.1%</td>
<td>0.1%</td>
<td>10%</td>
<td>30%</td>
<td>50%</td>
</tr>
<tr>
<td>50:50</td>
<td>60</td>
<td>72</td>
<td>96</td>
<td>120</td>
</tr>
<tr>
<td>66:33</td>
<td>60</td>
<td>85</td>
<td>135</td>
<td>185</td>
</tr>
<tr>
<td>33:66</td>
<td>60</td>
<td>59</td>
<td>57</td>
<td>55</td>
</tr>
<tr>
<td>0.4%</td>
<td>0.4%</td>
<td>10%</td>
<td>30%</td>
<td>50%</td>
</tr>
<tr>
<td>50:50</td>
<td>240</td>
<td>234</td>
<td>222</td>
<td>210</td>
</tr>
<tr>
<td>66:33</td>
<td>240</td>
<td>247</td>
<td>261</td>
<td>275</td>
</tr>
<tr>
<td>33:66</td>
<td>240</td>
<td>221</td>
<td>183</td>
<td>145</td>
</tr>
</tbody>
</table>

17. Overall, the results from both these sets of scenarios indicate that the indirect effect of a reduction in MIF in terms of substitution between payment methods and between card schemes can, in certain scenarios, outweigh the direct effect and lead to an increase in merchant costs. However, it is not clear that substitution in the direction and on the scale required in these hypothetical scenarios is sufficiently likely to reverse the presumption from the direct effect that merchant costs will fall. In particular, the scenarios which indicate an increase in merchant costs are where a reduction in MIF that leads to a small reduction in an MSC, leads to either a substantial shift from MasterCard transactions to Amex or a substantial shift from debit card transactions to credit card transactions.
ANNEX 5: UNIVERSITY OF WESTMINSTER STUDY

1. In paragraphs 5.3.83-5.3.89 of the Joint written representations on the SR14, MMF cited evidence that in its view indicates that the extension of credit has effects on retail sales. Only one study that the Parties cited directly addressed the effect of credit card borrowing on retail sales and GDP in the UK. However the evidence presented in this study shows that there is no discernable positive effect on either retail sales or GDP.

2. The University of Westminster study, cited in paragraph 5.3.84 of the Joint written representations on the SR14, examined the relationship between credit card debt (the balances outstanding on credit card accounts) and retail sales and GDP using quarterly data for the UK from 1971 to 2001. This study demonstrates that there is no effect of credit card borrowing on GDP in the UK. The study conducts two Granger causality tests for the effect of credit card debt on GDP but neither indicates the presence of a relationship.

3. In addition, there is no evidence presented in the study of a positive effect of credit card debt on retail sales. Of the two Granger causality tests one indicates a relationship the other does not. However, a significant Granger causality test is a necessary but not a sufficient condition for establishing an economic relationship between variables. Furthermore, a Granger causality test does not indicate whether any relationship that may exist is positive or negative. In the study’s preferred model, the estimated parameters on credit card debt are negative indicating that credit card debt may impact negatively on retail sales.

4. A scenario presented in the study has been interpreted by MMF as showing that credit card debt leads to an increase in retail sales of four per cent. However, this is incorrect. The scenario assumes that an increase in credit card debt increases retail sales by just less than four per cent and then models the long run effect of that one-off increase in retail sales.

5. The OFT believes that the results of this study, correctly interpreted, show that in the UK over that past 30 years the extension of the credit facility for credit cards has increased neither retail sales nor GDP.

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687 Granger Causality tests are preliminary statistical tests to establish whether there may be an economic relationship between two variables. See also paragraph 248 above.
688 Allison, K, Burke, T & Whittaker, M (2003), Table 5.
689 The parameter estimates of the effect of credit card debt on retail sales are not individually significant and no test of the joint significance of these parameters is reported. The results indicate either a negative effect or no significant effect of credit card debt on retail sales.
690 Paragraph 5.3.85, Joint written representations on the SR14.
ANNEX 6: FACTS INTERNATIONAL MERCHANT SURVEY

1. In June 2004, the OFT commissioned Facts International Limited to undertake a survey of 1000 merchants who accept credit cards in order to determine the prevalence and nature of surcharging of credit cards by merchants. The survey also explored the reasons for surcharging and the reasons why merchants choose not to surcharge.

2. The survey was conducted on a stratified random sample of small and medium-sized merchants (merchants with a turnover of less than £30m). The sample was stratified in order that sufficient merchants in the larger size categories were chosen to ensure that meaningful statistical results for these size categories could be obtained. These were then compared with the estimated population of merchants taken from Dun and Bradstreet.

Table Annex 6.1: Comparison with (estimated) Population

<table>
<thead>
<tr>
<th>Turnover</th>
<th>Population</th>
<th>Sample Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to £100k</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>More than £100k to £250k</td>
<td>41</td>
<td>20</td>
</tr>
<tr>
<td>More than £250k to £500k</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>More than £500k to £1m</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>More than £1m to £5m</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>More than £5m to £30m</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

3. Quotas were also set by sector so that a matrix of quotas by turnover band and by sector was used to select the sample. The fieldwork for the survey was conducted in July and August 2004.

4. The results of the survey were weighted to reflect the difference between the sample proportion and estimated population proportion of merchants in each turnover band. In addition the results of the survey were weighted according to the estimated proportion of merchants in each turnover band that accept credit cards.691

5. It should be noted that the survey was restricted to merchants with turnover below £30m. Since there are relatively fewer large merchants with turnover above £30m it is difficult to achieve a representative sample of these large merchants. In addition the largest merchants who accept credit cards are supermarkets and high street retailers which collectively account for a significant proportion of credit card turnover. However, as far as the OFT is aware, with one exception, none of the

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691 An initial screening question as part of the survey identified whether the merchant accepts credit cards or not. The sample proportion of merchants who indicated that they did accept cards for each turnover band was used to weight responses.
largest retailers surcharge credit card transactions. The OFT is aware of only one large retailer that surcharges credit card transactions, IKEA, and the introduction of the surcharge at IKEA stores in the UK took place on 1 September 2004 after the survey had been commissioned and conducted. As a result, the survey results based upon small and medium-sized merchants are likely to overstate and represent an upper bound on the true incidence of surcharging.

6. Table Annex 6.2 below presents the proportions of those surcharging in the sample and the weighted proportion, i.e. the estimated proportion of small and medium-sized merchants who accept credit cards, in the population who surcharge. Not all merchants who surcharge credit card transactions surcharge all credit card transactions. In particular, a significant proportion of merchants who surcharge only surcharge large value or small value transactions.

**Table Annex 6.2: Proportion of small and medium-sized merchants who surcharge**

<table>
<thead>
<tr>
<th></th>
<th>All who surcharge</th>
<th>Surcharge all transactions</th>
<th>Surcharge transactions above a given value</th>
<th>Surcharge transactions below a given value</th>
<th>Surcharge other*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample Proportion</strong></td>
<td>16.0%</td>
<td>4.1%</td>
<td>5.0%</td>
<td>5.3%</td>
<td>1.6%</td>
</tr>
<tr>
<td><strong>Estimated Population Proportion</strong></td>
<td>14.0%**</td>
<td>3.7%</td>
<td>2.7%</td>
<td>6.2%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

* Those merchants that surcharge selectively according to some other criteria.
** Figures do not add up due to rounding.

7. Based on the survey results, an estimated 14 per cent of small and medium-sized merchants surcharge at least some transactions, but less than four per cent of merchants surcharge all transactions. It is estimated that 6.2 per cent of small and medium-sized merchants who accept credit cards surcharge transactions below a certain value and 2.7 per cent of merchants surcharge transactions above a given value. The median (mean) transaction value above which merchants surcharge is £1000 (£1175). The median (mean) transaction value below which merchants surcharge is £10 (£8.45).

8. It is not possible to estimate the proportion of the value of credit cards transactions for which a surcharge is levied. The selectivity of surcharging means that the proportion of transactions that would attract a surcharge at those merchants who surcharge selectively is not known.
1. MMF has not identified the costs of loyalty schemes and affinity arrangements as being costs which are taken into account when setting the MMF MIF,\textsuperscript{692} and these have not been identified as a separate cost component in the cost surveys carried out by EDC on behalf of MMF. However, certain individual banks in their representations on the R14 indicated that a reduction in the level of the MMF MIF may lead to the ending or lessening of their loyalty schemes and/or affinity arrangements.\textsuperscript{693} As such, it appears to the OFT that these banks consider the offering of loyalty schemes and affinity arrangements to be a benefit which should be taken into account when considering whether the MMF MIF agreement satisfies the condition for individual exemption.

2. The OFT does not consider that loyalty schemes and affinity arrangements can be justified by reference to any of the benefits identified under the first exemption condition. In addition, while such schemes might provide tangible benefits to some cardholders, this does not justify issuers funding the schemes, even in part, through revenue they generate through the MMF MIF, which is paid for by merchants and ultimately by consumers in general through increased retail prices.

3. The OFT asked six banks to provide information on card products which fall into the categories of affinity cards and credit cards offering loyalty schemes as an incentive to card use.\textsuperscript{694} A majority of the banks submitted that they offer affinity cards and they all offer loyalty schemes. One bank submitted that it currently uses the majority of its merchant income from the cash-back range of credit cards to fund the customer cashback reward scheme.\textsuperscript{695} The OFT asked the respondents to calculate the amount spent by their respective banks on affinity cards and loyalty schemes. The value of expenditure on such schemes for these six banks, excluding affinity partners’ costs, amounted to more than £50 million for MasterCard cards alone.

4. Some banks have argued that their loyalty schemes and affinity arrangements are not funded directly from MIF revenue but from revenue streams in general, and that the costs of such schemes were not taken into account when calculating the MMF MIF.\textsuperscript{696}

5. While the OFT accepts that affinity and loyalty schemes may be subsidised by revenue streams other than the MMF MIF, it appears that

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\textsuperscript{692} Loyalty schemes and affinity arrangements are described in paragraphs 14-15 of this Decision.

\textsuperscript{693} \textbf{[REDACTED].}

\textsuperscript{694} Section 26 Notices to various issuers (18 February 2002 and 5 March 2002). Responses to section 26 Notices were received between 28 February and 12 April 2002.

\textsuperscript{695} \textbf{[REDACTED].}

\textsuperscript{696} \textbf{[REDACTED].}
some issuers are funding their schemes through MIF revenue, at least in part.\textsuperscript{697} This link between the MMF MIF and the funding of loyalty and affinity schemes provides support for the OFT’s view that the MMF MIF is being used as a vehicle for extracting revenues from merchants for services which primarily benefit cardholders, leading to an overuse of credit cards to the detriment of other, possibly more efficient, payment methods. It appears that issuers' costs of competing for customers through the provision of affinity and loyalty schemes are, at least in part, ultimately borne by merchants and their customers through the MMF MIF.\textsuperscript{698} PwC has also reported that most of the interchange income generated by cards with attached reward programmes is given back to the cardholder, resulting in an overall loss for the issuer.\textsuperscript{699}

\textsuperscript{697} Datamonitor, Payment Card Loyalty Schemes BFFS0279 (April 2004), page 49 notes that: “For example the impact of any reduction in interchange fees in some markets, widely acknowledged as the revenue stream that funds many card loyalty schemes, could have a severe impact on the ability of some issuers to continue to offer programs”.

\textsuperscript{698} The OFT notes that this pass-through of the costs of competing for customers by issuers to merchants could lead to an upward pressure on the level of the MIF, which merchants are unable to influence.

\textsuperscript{699} Page 6, PwC Research Note, Precious Plastic – the UK Credit Card Sector (2001).
ANNEX 8: THE MMF MERCHANT STUDY

1. As part of the Joint written representations on the SR14, MMF submitted a merchant study prepared by DotEcon (the ‘MMF Merchant Study’) and based on a survey of 502 UK merchants that sell directly to consumers which was designed by PwC and undertaken by MORI.\(^{700}\) In Annex 3 of the SO, the OFT presented a critique of the MMF Merchant Study to which MMF responded in the Joint written representations on the SO.\(^{701}\)

2. This Annex restates the OFT’s criticisms of the MMF Merchant Study and responds to points raised in the Joint written representations on the SO.

3. Annex I of the MMF Merchant Study states that the merchants were selected using stratified random sampling with quotas set to provide reasonably robust data within three turnover bands:

   - Small: turnover < £250,000
   - Medium: turnover £250,000 - £20 million
   - Large: turnover > £20 million

4. Additionally, a small number of key companies (e.g. the large supermarket chains) were added to the sample.

5. While there is no evidence to suggest that the sample chosen is not representative within these strata, neither is their evidence that it is representative. It is standard procedure in statistical analyses to report efforts that were made to ensure that the potential respondents contacted actually are a random sample. It is also standard statistical procedure to report non-response and efforts that were made to minimise non-response and any forecastable ways non-response may bias the results. However the details of the interview quotas, interview procedure, non-response, and possible non-response biases were not reported in the Study.

**Survey questions**

6. The survey asked each merchant first for background information. Background information collected included industry, turnover, number of outlets, number of employees, acceptance of different methods of payment, shares of different methods of payment in total transactions, and credit card discouragement activities. Additionally, the survey asked several kinds of questions that were used to study (i) merchant valuation of characteristics of credit cards; (ii) discouragement behaviour; and (iii) credit card acceptance.

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\(^{700}\) Annex 1, Joint written representations on the SR14.

\(^{701}\) Annex 3, Joint written representations on the SO.
7. The survey asked for responses to changes in an MSC in terms of the stated likelihood of continuing to accept credit cards or the stated likelihood of discontinuing acceptance. The base level of the applicable MSC for these questions is the MSC which the merchant currently faces. Where this is not available either because the merchant does not report the applicable MSC or, because the merchant does not currently accept credit cards, a base MSC based upon the average expected of a merchant of that size and type was inserted. This raises two initial problems with these questions when applied to the hypothetical monopolist test.

8. First, because of the cellophane fallacy issue, the agreement on the MMF MIF may have already raised MSCs above their competitive level, therefore the current level of MSCs that a merchant faces may not be the appropriate benchmark to consider when conducting a hypothetical monopolist test.

9. Second, the sample includes merchants who do not currently accept credit cards. These are being allocated a base MSC which the average merchant of their type is currently offered. However, assuming that this is an effective proxy for the MSC which the merchant would face, the merchant already has that MSC as an option but has decided not to accept credit cards. Therefore to ask such a merchant whether they would accept cards at a higher level of MSC than the level at which they currently refuse to accept cards cannot be expected to reveal any information relevant to a hypothetical monopolist test. Just over a quarter of the questions in the sample were directed to merchants who did not currently accept credit cards.

10. In Joint written representations on the SO, MMF has disputed the relevance of this point. It has noted that the questions put to merchants related to hypothetical card products and not to the card products that actually exist. It notes that /<60/ out of 127 merchants indicate that they would accept the hypothetical card product even at an MSC higher than the one currently on offer. However this indicates a further problem with the survey. The attributes of the hypothetical card product do not necessarily closely relate to the attributes of existing credit card products. Given this, it is not clear how relevant survey responses are to the real world at all.

11. There is a further problem with the survey questions which make them unsuitable for use as part of a hypothetical monopolist test. Merchants are asked a series of questions about their acceptance of credit cards allowing for different proportionate increase in an MSC above the base MSC. The proportionate increases are in the vast majority of cases substantially greater than the 5-10 per cent range conventionally adopted as part of the hypothetical monopolist test.

12. The first question which all of the merchants face relates to a level of MSC that represents a 25 per cent increase on the base level of an

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702 See paragraph 13 at Annex 3, Joint written representations on the SO.
MSC. The increase in an MSC above the base level in subsequent questions depends upon the response to the initial question. If a merchant gives a strong indication that it will continue to accept cards, then the subsequent question relates to a 50 per cent increase above the base MSC. If a merchant continues to give a strong indication that it will continue to accept cards, the next question would relate to a 100 per cent increase in the applicable MSC above the base MSC. Questions relating to such large increases in MSCs are not relevant to the response to the much smaller increases in MSCs considered by a hypothetical monopolist test. On average the questions in the sample relate to a 40 per cent increase in MSC above the base MSC.

13. A few of the questions in the survey (36 of the 1402 questions or 2.6 per cent) relate to an increase in an MSC of between five and ten per cent above the base MSC. However, even the results of these questions could not be used as part of a hypothetical monopolist test because the group of merchants asked these questions is not randomly selected. In order to be asked a question relating to an increase in an MSC above the base MSC of 5-10 per cent a merchant would have to have indicated in two previous questions that it would be inclined to discontinue acceptance of credit cards at higher levels of an MSC than the base MSC. Therefore there are very severe sample selection biases in considering the responses to those questions. The presence of this bias is demonstrated by the fact that, of these 36 questions, 30 (over 80 per cent) were addressed to merchants that do not currently accept credit cards and only 6 to merchants that do accept credit cards. By comparison merchants who do not accept credit cards represent only just over a quarter of the merchants in the survey.

14. In Joint written representations on the SO, MMF has argued that the demand curve may be iso-elastic hence the responses to much larger increases in prices may be relevant to smaller increases. However this is an untested assumption, and it is untestable in the data set because questions concerning changes in MSCs of different magnitudes were not asked randomly but conditionally on previous responses. Therefore the OFT continues to believe that it is unreliable to draw inferences from much larger changes in MSCs to much smaller changes in MSCs.

15. In addition to these problems, the OFT considers that there are a number of potential biases in the survey responses, considered below, that could lead to respondents overstating their sensitivity to price changes. As a result of the problems discussed in this Annex, the OFT does not believe that the responses to the questions asked as part of the survey provide a reliable basis for the evaluation of a hypothetical monopolist test, which is the use to which MMF put the data obtained by the survey.

Biases in survey response

16. There are three potential types of biases in the survey. The first is sampling error. In a finite sample, average responses may not equal

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703 See paragraph 10 at Annex 3, Joint written representations on the SO.
average responses in the population. The second problem is non-response bias. This may result from failure to contact a (stratified) random sample of the population or refusal to participate in the survey.

17. Though the interviewers may have attempted to obtain a random sample within each strata, potential respondents may have systematically either refused to respond or been excluded from the survey. These merchants are likely to have been excluded from the survey. Those who are price inelastic might refuse to answer for fear of revealing this fact and leading to higher mark-ups.

18. Even if there is no non-response bias, the survey collects information on merchants’ stated preferences with regard to credit card acceptance and discouragement. In general, the relationship between stated preference information and true preferences is unknown. Using stated preference information could lead researchers to either over or under-estimate the impact of prices on true preferences. However, in the case of the survey, it is likely that the stated preference information overstates the impact of prices on preferences because merchants’ overstate their reaction to price changes for two reasons.

19. First, if merchants believe that the information gathered in the survey may affect pricing strategies, they have the incentive to claim to be more price sensitive than they actually are. If they claim to be price sensitive, then they will believe that MMF is less likely to increase MIF and MSCs.

20. Secondly, even if they are not answering strategically, merchants may exaggerate their responses to price changes for psychological reasons. Indeed, it appears that, whether consciously or unconsciously, the computer survey has been designed to exaggerate price responsiveness. This is true despite the fact that at the beginning of the survey, respondents are told that “there are no right or wrong answers to the questions that follow; only your opinions are important.”

21. To illustrate why the survey design is likely to have led merchants to overstate price responsiveness, the OFT has highlighted below the description of the questions designed to elicit price responsiveness of credit card acceptance behaviour.

22. Merchants were each asked either two or three questions about acceptance of a hypothetical payment method similar to MasterCard/Visa under various pricing scenarios. The hypothetical payment product was defined in terms of the same attributes used in other survey questions concerning what aspects of payment products the merchants value. MSCs of this product varied from question to question, but other attributes remained constant for each respondent.

23. The first question in each series of two or three, details the attributes of the hypothetical payment method, and asks respondents to indicate

704 Survey interview, opening screen.
whether they prefer to discontinue accepting the method of payment or whether they would prefer to continue to accept. An example screen is shown below:

“Which do you prefer more for your business?”

<table>
<thead>
<tr>
<th>Discontinue accepting this method of payment</th>
<th>Continue to accept this as described below</th>
</tr>
</thead>
<tbody>
<tr>
<td>Card-based, electronic processing</td>
<td></td>
</tr>
<tr>
<td>Brand: MasterCard/Visa</td>
<td></td>
</tr>
<tr>
<td>1 day to reach account</td>
<td></td>
</tr>
<tr>
<td>Full default protection</td>
<td></td>
</tr>
<tr>
<td>50% consumer penetration</td>
<td></td>
</tr>
<tr>
<td>10% additional spend</td>
<td></td>
</tr>
<tr>
<td>Customers’ preferred method for 10% of your transaction</td>
<td></td>
</tr>
<tr>
<td>1.87% transaction charge</td>
<td></td>
</tr>
</tbody>
</table>

24. Attribute levels vary across respondents. However, in every case, for the first question in the series of questions on acceptance, the question and the description of the products are displayed in black font.

25. The second question offers the respondent the same choice but with the transaction charge either increased or reduced depending on the response to the first question. There are three features of the second question that deserve note. First, the second question is phrased, “The price has changed, what is your preference now?” The word “now” draws attention to the change. This word is not, however, neutral. It is likely that some respondents subconsciously take this as a cue that their default response should be that their preference has changed. It is likely that this psychological cue leads respondents to overstate their reaction to the price change.

705 Attributes are described in detail in the interview survey and in DotEcon’s study based on the survey evidence. Attribute levels varied across questions.
Second, the text of this phrase is displayed in green font. This also highlights the change and offers ambiguous psychological cues as to whether preferences should also have changed.

Third, while most of the description of the payment method attributes remains in black, the description of the transaction charge is now in brown or rust coloured font. Certainly, this change in colour draws respondents’ attention to the price change. But, this colour change also is a psychological cue that is likely to lead some respondents to react by altering their choice with respect to the first question.

Overall, the OFT considers it likely that some respondents changed their response to the question in response to these psychological cues (the changes in colour and the use of the word “now”). They are very likely to have emphasised or exaggerated their response to mimic the emphasis given to the change by the survey interview software. Such responses to psychological cues may or may not reflect to a greater or lesser degree any underlying economic ‘elasticity’ of response with respect to the price change. Thus, these psychological cues may bias the measurement of the price responsiveness of merchants.

This problem is even more severe in the third question in the series. If a respondent’s choices on the first and second questions are the same (i.e. discontinue on both), then a third question is asked in which the same choice is offered but with a larger price change. In posing this question to respondents, the interview software states “The price has changed again! What is your preference now?” There are three features of this question that deserve note.

First, an exclamation point is used to emphasize the price change. This is clearly a psychological cue indicating that this price change should be considered important. A response to this emphasis is likely to be that respondents exaggerate the price response to demonstrate acknowledgement of the importance of the change.

Second, the text quoted above is displayed in blue font. This use of colour highlights the change. It is not clear how this use of colour influences the response. Finally, the new price of the payment method is highlighted in red font. The red font offers a further cue to the respondent that the price change is important, urgent, or significant.

Finally, an overall feature of the survey further induces exaggerated response to price changes. Merchants who are not highly price responsive can shorten the interview by overstating their responsiveness to price changes. In all cases where a series of two or three questions are used to elicit price responses, switching behaviour on the second question in the series eliminates the third question from the interview. For example, in the series of two or three questions used to measure the responsiveness of credit card acceptance to price changes, if a merchant indicates “continue to accept” on question 1 and “discontinue acceptance” on question 2, question 3 will not be asked. Thus, even if the merchants’ true preference is to continue to accept, they may state
discontinue in order to shorten the interview. In fact 77 out of 493 respondents only answered two questions concerning continuing to accept credit cards in response to price changes.

33. Failure to take into account these biases or try to correct for them can lead to large errors when trying to estimate price elasticities using stated preference data.\footnote{Klein, R and Sherman, R (1997) 'Estimating New Product Demand from Biased Survey Data', \textit{Journal of Econometrics}, 76, 53-76; Hsiao, C and Sun, B H (1999) 'Modelling Survey Response Bias – With an Analysis of the Demand for and Advanced Electronic Device', \textit{Journal of Econometrics}, 89, 15-39; Hsiao, C et al (2002), 'The Role of Stated Intentions in New Product Purchase Forecasting', in \textit{Econometric Models in Marketing}, eds Franses, P H and Montgomery, A L. These all discuss the importance of exaggeration bias and other biases in stated purchase intention surveys. They also describe the impact these biases might have on elasticity estimates and some methods that can be used to detect and correct biases. Note that these papers study biases in the context of surveys that tend to lead consumers to overstate their demand for new products and understate their responsiveness to price. Hence, uncorrected elasticity estimates are too large. This is the opposite problem to that encountered in the MMF Merchant Study where the survey design encourages merchants to understate demand for credit cards and overstate price responsiveness.}

**Merchant valuation of credit card attributes**

34. To measure the value that merchants place on different credit card attributes, the survey asked respondents around 40 questions about preferences over pairs or triplets of products. Respondents answered which product they preferred to accept. Subject to the caveat that these stated preferences may not reflect true preferences, the questions seemed to be fair attempts to elicit the true preferences of the merchants. The OFT has significant reservations about the analysis and presentation of the results and the interpretation put on those results by DotEcon.

35. Table 1 of the MMF Merchant Study shows the average valuation of attributes in terms of changes to MSCs calculated as the average value across merchant groups of the MSC change required to make them indifferent as to whether or not to accept credit cards. The OFT cannot rely on these figures. The OFT does not accept that the estimation procedure used to produce the estimates is appropriate. Also the statistical procedure used to assess the reliability of the estimates is inappropriate.

36. Figure 1 of the MMF Merchant Study indicates that the merchants stated, on average, that they place positive value on certain attributes of a hypothetical credit card. However it cannot be inferred with any degree of statistical reliability that the average merchant valuation of the attribute is positive. The valuations shown in the Figure 1 are the average valuations across 78 merchant groups. Each of these groups was estimated to have different valuations of the attributes. In the MMF Merchant Study the precision of each of these group estimates was not reported. The OFT has previously observed that the absence of the
standard errors necessary to accurately determine the precision of the estimates meant that the validity of the results could not be correctly ascertained.

37. The OFT has requested and analysed the full dataset and estimates on which the MMF Merchant Study relies. Having analysed this data and estimates, it is clear that the evidence presented in this study cannot be relied upon to show several of the relevant findings on which MMF relies.

38. For example, Figure 1 and Table 1 of the MMF Merchant Study indicate that on average merchants value incremental spend and the payment guarantee. Figure 2 indicates that the credit facility and the interest-free period generate incremental spend. However these figures are misleading when considered next to the results of individual merchant group estimations.

39. Two forms of estimation were performed, one in which certain attributes were constrained, so that for example in the constrained estimates it was not possible for the estimation procedure to produce a negative estimate for the valuation of incremental spend. However it is an open question, and one of the objectives of the MMF Merchant Study, to determine whether or not merchants actually do value incremental sales. Therefore there is no reason a priori to impose this constraint. As a result the OFT has considered the unconstrained estimates.

40. As part of the MMF Merchant Study, 78 separate unconstrained estimates of the effect of incremental spend from zero to 10 per cent were calculated, one for each the 78 merchant groups. Of these {>50} were not significantly different from zero at the 5 per cent significance level for a two-tailed test. In other words for {>50} out of the 78 merchant groups it cannot be reliably concluded that there is any positive or negative valuation of incremental spend of up to 10 per cent. In {<15} cases there was a significant positive valuation and in {<15} cases there was a significant negative valuation. In considering the effect of incremental sales of 20 per cent relative to 10 per cent the results are similar. In this case {>50} of the coefficients are not significantly different from zero, {<15} are significantly positive and {<15} significantly negative. The OFT does not believe that on the basis of these results there are strong grounds for concluding that merchants value incremental sales.

41. This conclusion applies even more strongly to the payment guarantee. Two attributes were considered for the payment guarantee, a limited guarantee relative to no guarantee and a full guarantee relative to a limited guarantee. However of the unconstrained estimates of the value of these attributes {<10} was significantly different from zero. In other words it cannot be reliably concluded from these estimates that

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707 This finding relates to a two-tailed test at the five per cent significance level.
of the 78 merchant groups value either a full or a limited payment guarantee.

42. It should be noted that this problem of insignificant coefficients for these attributes is not inherent to the estimation procedure or caused by the size of the samples. For example the estimates of the debit card attribute (Switch, Visa electron, Visa Delta) are generally well determined with \( >50 \text{ per cent} \) of all merchant groups, \( >50 \) out of 78 groups, indicating a valuation of the debit card attribute that is significantly different from zero. Similarly the effect of an MSC is found to be significant in \( >50 \) out of 78 merchant groups.

43. In relation to the attributes that generate incremental spend there are similar findings. There are many missing values in the unconstrained estimates of the attributes that generate incremental spend, due to the failure of the estimation procedure for those merchant groups, but \( >75 \text{ per cent of} \) estimates that are reported for the extended credit facility and the interest-free period are insignificantly different from zero. Examining the constrained estimates, where it is imposed on the data that interest-free period and credit facility cannot lead to a fall in incremental sales, we observe that there are \[ \text{REDACTED} \] positive and statistically significant estimates for the extended credit facility \[ \text{REDACTED} \] the 78 merchant groups.\(^{708}\) There are \( <15 \) positive and significant estimates of the attribute of a 4- week interest-free period out of estimates and \( <15 \) positive and significant estimate for the attribute of extended credit facility.\(^{709}\) These estimates therefore do not provide evidence that merchants believe that either the interest-free period or the extended credit facility leads to incremental sales.

44. In Table 1 and Figures 1 and 2 of the MMF Merchant Study, DotEcon presents weighted average values and implied valuations of merchants for attributes. DotEcon also indicates that some of these figures are insignificant and others are significant. In the absence of the relevant data necessary to evaluate appropriately these Figures and Table, the OFT concluded in the SO that it could not rely on this data. Now that the OFT is in possession of the full data set it is still of the view that these figures cannot be relied upon.

45. First, the data is based upon a weighted average of coefficients where for certain variables the value of the coefficient is constrained so that it can’t be negative. Since \textit{a priori} there is no way of knowing whether merchants do value the payment guarantee or do believe that the interest-free period leads to incremental sales, this assumption cannot be accepted. It must be tested. As indicated above \[ \text{REDACTED} \] of the coefficients are insignificant, i.e. it cannot be reliably concluded whether there is a positive, negative or zero effect for those merchant groups.

\(^{708}\) Evaluated at the 5 per cent significance level for a one-tailed test.

\(^{709}\) It should be noted that by adopting a five per cent significant level we would expect in 80 regression estimates to observe 4 false positive findings.
Secondly, the statistical evaluation of significance is not reliable. In general, it is common to say that an estimate is statistically significant if it can be stated that the relevant confidence interval for the point estimate, usually at the ten per cent, five per cent or one per cent levels of confidence, does not contain zero. However the test adopted by DotEcon is whether the median of the estimates is zero and not whether the weighted average of the estimates is zero. Details of these hypothesis tests are reported in Tables 15 and 17. However these tests are inappropriate for the purpose of testing whether the confidence interval for the weighted averages contain zero. Testing whether the median of a set of estimates is zero is unrelated to a test of the reliability of an average drawn from those estimates and is completely uninformative from that perspective. Whether or not the median of a set of estimates is equal to zero the weighted average can be positive, negative or zero. Put simply, on the basis of the statistical tests reported it impossible to say whether the estimates reported are reliable evidence that merchants value the incremental sales or the payment guarantee.

Therefore for these two reasons neither the estimates presented in Tables 1, 15 and 17 of the MMF Merchant Study nor the hypothesis tests used to validate them can be relied on as evidence of the benefits to merchants of the payment guarantee or incremental sales. Nor can these results and tests be relied on as evidence that either the interest-free period or the credit facility leads to increased sales.

Table 2 of the MMF Merchant Study presents the proportions of merchants indicating whether particular attributes are believed to be more or less likely to encourage incremental spend. This Table indicates that /30-50/ per cent of the merchants in the sample believe it to be unlikely that the extended credit facility leads to incremental spend.

It should also be noted that, from Table 2 of the MMF Merchant Study, /30-50/ per cent of merchants in the sample believe that the interest-free period is unlikely to lead to incremental spend. The only attribute of a payment system listed in Table 2 for which it appears that on average merchants believe that the attribute is likely to lead to incremental spend is the card based nature of the payment method.

In a further question in the survey merchants were asked to quantify the additional spend that might arise from a hypothetical credit card scheme. This credit card scheme offered a six month interest-free period, a 1 per cent cash back scheme and an extended credit facility at 20 per cent APR. The OFT notes that current MasterCard credit cards offer an interest-free period of up to 59 days710 which is considerably shorter than the six months this hypothetical product offers.711 In

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710 The interest-free period for a number of MasterCard credit cards is given in Moneyfacts (June 2005). This varies between zero and 59 days.

711 Some credit cards offer an interest rate of 0 per cent for the first six months but since the hypothetical APR is 20 per cent and the six month interest-free period is a permanent feature of the hypothetical product it is clear that such offers are not part of the hypothetical product.
addition, while some cards currently offer cashback many do not. It is not clear that this hypothetical product is closely related to the current typical MasterCard offering. The mean estimated incremental spend reported by merchants to such a hypothetical card offering was $<20\%$ per cent, and the median estimated incremental spend in most of the sectors was $<20\%$ per cent.

51. However in order to interpret the answer to this question it is necessary to consider whether merchants actually value such incremental spend. As has been shown above, for the vast majority of merchant groups, it cannot be concluded that they value positively such incremental spend.
ANNEX 9: OTHER EC CASE LAW RELIED ON BY THE PARTIES

1. In addition to the cases considered in the main body of this Decision, MMF relies on the following EC cases for the following propositions:

   (i) Telenor/Canal+/Canal Digital: when assessing whether the MMF MIF agreement is a restriction of competition it is appropriate to compare "the competition that exists both with and without the relevant agreement" (including taking account of the benefits which the agreement brings).\(^\text{713}\)

   (ii) P&I Clubs: when assessing whether the MMF MIF agreement is a restriction of competition, the OFT must ask itself whether the existing MasterCard scheme, with all its benefits, could exist without the MMF MIF agreement.\(^\text{715}\)

   (iii) Eurotunnel, Konsortium and Elopak/Metal Box: there is no restriction of competition because none of the Parties individually would be capable of establishing and maintaining a credit card scheme of comparable size and offering the same benefits as the existing MasterCard scheme.\(^\text{719}\)

   (iv) Cégétel and Elopak/Metal Box: that acquirers and issuers provide different services to their respective customers is not inconsistent with the analysis that the Parties are jointly supplying one product, namely the MasterCard credit card offering.\(^\text{721}\)

2. For the reasons explained below, the OFT does not consider that these cases can safely be relied on for the propositions which MMF seeks to draw from them.

3. The passage from the Telenor/Canal+/Canal Digital case which MMF relies on reads as follows:

   "To the extent that the agreements have as their object or effect appreciably to restrict competition within the meaning of Article 81(1) of the Treaty, the Commission furthermore needs to undertake a prospective analysis as to the likely evolution of competition in the relevant markets on the basis of the facts absent the restrictions agreed between the parties to the notified agreements."

\(^\text{713}\) Paragraph 4.12, Joint written representations on the SO.
\(^\text{714}\) OJ [1999] L125/12.
\(^\text{715}\) Paragraph 4.41, Joint written representations on the SO; Paragraph 4.2.25, Joint written representations on the SR14.
\(^\text{716}\) OJ [1988] L311/36.
\(^\text{717}\) OJ [1990] L228/31.
\(^\text{719}\) See paragraph 4.2.19 and footnote 132, Joint written representations on the SR14.
\(^\text{721}\) See paragraphs 4.4.20 to 4.4.21, Joint written representations on the SR14.
4. It is clear, from the words emphasised in bold above, that the passage of the decision relied on by MMF actually relates to the assessment of the arrangements under Article 81(3) and not to the assessment of whether or not they restricted competition for the purposes of Article 81(1). Far from supporting MMF’s arguments as to the correct approach to assessment of the MMF MIF agreement under Article 81, the Commission’s decision is consistent with the position that weighing the pro-competitive and anti-competitive effects of the MMF MIF agreement can only occur when applying the exemption criteria in Article 81(3) and/or section 9 of the CA98.722

5. In the P&I Clubs case, the Commission had to consider a claim-sharing arrangement between mutual associations, the purpose of which was to share proportionately among all the P&I clubs the claims made on one club in excess of a certain amount. The relevant agreement had first been concluded in 1899. The Commission found that it was inherent in any claim-sharing agreement that its members decided in common at least the policy conditions and the level of cover offered.723 The Commission therefore found that such an agreement could not be considered anti-competitive, for the purposes of Article 81(1), at least when the claim-sharing was necessary to allow members to provide a type of insurance that they could not provide alone.724

6. As the OFT has found that a four-party payment card scheme is viable without a MIF,725 it follows that the MMF MIF agreement is not inherent in, or indispensable to, the proper functioning of the MasterCard scheme. Therefore there are no useful analogies to be drawn with the Commission’s P&I Clubs decision. In any event, the Commission focussed in that case on the existing level of cover offered by the claim-sharing arrangements because it found that such a level of cover could only be attained by insuring more than 50% of worldwide tonnage, i.e. there was no room for a second viable supplier of such cover.726

7. The Eurotunnel, Konsortium and Elopak/Metal Box cases all concerned production joint ventures. As explained in this Decision,727 even if the MasterCard scheme is properly to be considered a production joint venture (and there are serious questions regarding this – see paragraphs 451-452 above), then, having regard to the Horizontal Guidelines and the Article 81(3) Notice, the OFT nonetheless concludes that there is a restriction of competition for the purposes of Article 81(1) and the Chapter I prohibition.728

722 See paragraph [425].
723 OJ [1999] L125/12, paragraph 65.
724 Paragraph 66.
725 See [406-414].
726 Paragraphs 68-72.
727 See paragraphs 451-472 of this Decision.
728 See paragraphs 451-473 and footnote 393 above.
8. The same is true in relation to the Cégétel case. Additionally, while the OFT accepts that, in that instance, the different parties contributed in different ways to the joint venture, there was clearly a joint venture company, Cégétel, which provided all downstream services (a full range of telecommunications services). By contrast, acquirers and issuers participating in the MasterCard scheme provide different services to different customers (merchants and cardholders, respectively).729

9. MCE/MCI has referred the OFT to the Commission’s Identrus decision, and argued that the arrangements considered there are a good parallel for the MasterCard scheme.730 The OFT disagrees. The cooperation agreement which the Commission considered in that case enabled the participants to enter a newly developing and emerging market. In addition, although it is noted in the decision that the joint venture company, Identrus, would apply “the same pricing policy…on the basis of objective and non-discriminatory criteria” to those using the Identrus network,731 it is not clear from this that the agreement required the payment of a fixed fee by one group of participants to another. Certainly, there is no evidence that fees paid to Identrus constituted a substantial, common proportion of prices charged to downstream customers. These factors alone distinguish that case from the facts which the OFT has considered in this Decision and mean that there are no useful analogies to be drawn.

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729 See paragraph 169 above.
730 Paragraphs 3.2.18-3.2.20, MCE/MCI Joint written representations on the R14 (23 January 2002).
ANNEX 10: DOTECON DISCOURAGEMENT SURVEY

1. In Annex 5 of its Joint written representations on the SO, MMF provided the results of a survey of cardholders it had commissioned from economic consultants DotEcon. The survey used conjoint analysis to examine the factors that influence cardholders’ choice of a shop and choice of payment method. In addition, there were some questions about shop attributes and customer reactions to unexpectedly being faced with discouragement.

2. In the conjoint analysis respondents were presented with a choice between pairs of hypothetical shops providing the same goods and services, but differing as to characteristics such as: travel time to the store; range of products; price level; availability of parking; quality of service; payment options and discouragement practices. Such pairings related to eight different types of goods or services: regular supply of groceries; a few groceries costing less than £15; CDs, books or DVDs/videos; clothes; a restaurant meal; a snack in a café/pub/fast-food outlet; a package holiday or plane tickets; an electrical appliance. Respondents were asked first to choose which store to purchase at and then which payment method to use.

3. The results of these survey responses were then subjected to econometric analysis in order to determine the effect on store choice of various store characteristics including whether or not cards were accepted and whether a surcharge was imposed on credit card transactions.

4. DotEcon notes that the results obtained need careful interpretation as a result of the hypothetical nature of the choices. DotEcon observes that other characteristics of merchants not identified in the questions are assumed to be identical and consumers are informed of differences in characteristics of the merchants in the hypothetical choices. As a result DotEcon concludes that the impact of attributes tends to be overstated.

5. The conclusions that DotEcon draws from this survey are that:

“Neither credit card acceptance nor discouragement practices (including surcharging credit card transactions at 2% and 5%) are at all decisive in the choice of retail outlet. Rather, discouragement practices are just one of a range of factors affecting choice of shop.”

“On the other hand, discouragement practices have a strong impact on payment method choice decisions. This clearly contradicts claims by the

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732 DotEcon: Discouragement of credit card use.
733 Paragraph 108 at Annex 5, Joint written representations on the SO.
734 Paragraph 98 at Annex 5, Joint written representations on the SO.
735 Paragraphs 126-127 at Annex 5, Joint written representations on the SO.
736 Paragraph 139 at Annex 5, Joint written representations on the SO.
OFT that surcharging credit card sales is not a viable option to merchants because customers would necessarily react by leaving a retailer’s premises and going elsewhere.\textsuperscript{737}

The OFT’s view

6. The OFT has considered carefully this survey and the conclusions drawn from it. However the OFT does not agree with those conclusions. The OFT does not contend that all MasterCard cardholders would switch retailer when faced with discouragement or non-acceptance. The OFT does not even contend that a majority of MasterCard cardholders would switch when faced with discouragement or non-acceptance. Instead it is the OFT’s contention that it is likely that a merchant would lose some sales from MasterCard cardholders if it were to cease accepting MasterCard branded cards or to surcharge those cards. As indicated in paragraph 198 above, in the event of a 10 per cent increase in the MMF MIF above the competitive level, a merchant with an average retail margin may find it profitable to continue accepting MasterCard branded cards even if as few as one in three hundred MasterCard cardholders were to switch store in response to discontinued acceptance. In this context, evidence that a merchant would lose the custom of even a few per cent of cardholders would offer support for the OFT’s position.

7. For various reasons discussed below, the OFT agrees that the results of the survey require careful interpretation and the estimates should not be relied upon as precise predictions of the likely behaviour of consumers in real purchase situations. Nevertheless, the OFT believes that the results of the survey provide confirmation of the OFT’s position that, when faced with a surcharge, a non-trivial and potentially large proportion of cardholders would choose to shop elsewhere. Similarly, were a merchant to stop accepting credit cards, or all cards, the merchant could expect to lose cardholder custom as a potentially large proportion of cardholders would switch to an alternative merchant.

8. There are a number of difficulties in interpreting the survey results.

9. First, as with all surveys of this kind the results relate to what respondents state they would do in relation to hypothetical situations rather than what cardholders are actually observed to do in a real-choice situation. The two may not coincide in all cases.

10. Secondly, in surveys of this kind the reliability of responses depends on the validity of the questions that are posed. When interpreting hypothetical questions concerning choices between stores it is important that the hypothetical choices bear a reasonably close relation to real choices. While the products chosen are reasonably typical, although not comprehensive, it is not clear that the store characteristics presented to the respondents do relate to realistic choices that consumers face.

\textsuperscript{737} Paragraph 140 at Annex 5, Joint written representations on the SO.
11. In particular, the focus of the survey was on discouragement. Characteristics of merchants in the choice options given to respondents were whether a surcharge of 2 per cent or a surcharge of 5 per cent was levied on credit cards and whether discounts for cash of 5 per cent or 10 per cent were offered. In the FACTS International Merchants Survey commissioned by the OFT a number of merchants reported levying a surcharge of 2 per cent. However none of the merchants in the survey reported levying a surcharge as high as 5 per cent. Therefore the relevance of results relating to a surcharge of 5 per cent is to be questioned. Similarly in order to rely on questions relating to cash discounts as high as 5 or 10 per cent the OFT would require evidence that such discounts on this scale are common. No evidence on this topic is provided with the survey. Accordingly, in interpreting the results of the survey, the OFT has chosen to focus on the effects of a 2 per cent surcharge.

12. Thirdly, the survey was constructed in a way that emphasises the choice of store rather than the choice of payment method. Respondents were first asked to choose a store and then to choose a payment method at their chosen store. This assumes that this is indeed the way in which consumers make decisions. An alternative is that at least some consumers may choose which payment method to use for a certain type of transaction and then choose the store. Since the conclusion that DotEcon draws from their survey is that store characteristics are more important than payment methods in choice of store, adopting the choice structure in the survey is tantamount to assuming what they have concluded.

13. Fourthly, DotEcon has stated that the full information that respondents possess of the characteristics of the stores in the conjoint analysis means that their responses are likely to be overstated. However there are equally reasons to think that the responses may be understated relative to a situation with more limited information. For example, if a credit card cardholder is uninformed about whether a merchant accepts credit cards or surcharges then he/she may assume that the merchant does accept credit cards and may also assume that the merchant does not surcharge since the vast majority of merchants do not surcharge. On entering a store and unexpectedly discovering that the merchant does not accept cards, or discovering that the merchant surcharges, he/she may not have sufficient cash or a chequebook on hand to use an alternative payment method, and thus no alternative but to leave the store (or pay the surcharge).

14. Effectively the survey assumes that at the time when the respondent faces discouragement he/she would have alternative payment methods available. This may not be the case and therefore the survey can underestimate the likelihood of leaving the store and may overestimate the likelihood of switching to an alternative payment method. Other results from the survey offer support for the view that, contrary to the opinion of DotEcon, the proportion of cardholders looking for another

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738 Table 57, FACTS International Merchants Survey.
store may be greater when a consumer has limited information rather than full information. For example, respondents were asked directly for their response to an unexpected 2 per cent surcharge on credit cards. The proportion reporting that they would search for another store in response to an unexpected surcharge is higher for each sector than the predicted proportion of cardholders who would switch store in response to a 2 per cent surcharge from the conjoint analysis.

15. It is arguable that since surcharging is rare in most sectors, a surcharge will in many cases be unexpected and therefore the situation of an unexpected surcharge accords most closely to real choice situations. This would especially be the case where a merchant has newly introduced a surcharge, for example in response to a hypothetical increase in an MSC.

16. The results on the effect of a two per cent surcharge are presented in Table Annex 10.1 below. For each sector this table indicates the estimated proportion of cardholders which would change their choice of store in the conjoint analysis in response to a 2 per cent surcharge on credit cards. This is where the respondent is aware in advance whether the store surcharges and therefore the surcharge is expected. In the second column the proportion of cardholders who reported that they would search for another store in response to an unexpected 2 per cent surcharge is presented.

Table Annex 10.1: Percentage of cardholders searching for or switching to another store in response to a 2 per cent surcharge on credit cards

<table>
<thead>
<tr>
<th>Sector</th>
<th>Expected surcharge %</th>
<th>Unexpected surcharge %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular supply of groceries</td>
<td>[0-10]</td>
<td>[11-20]</td>
</tr>
<tr>
<td>A few groceries</td>
<td>[0-10]</td>
<td>[0-10]</td>
</tr>
<tr>
<td>CDs books, DVDs</td>
<td>[0-10]</td>
<td>[11-20]</td>
</tr>
<tr>
<td>Clothes</td>
<td>[0-10]</td>
<td>[21-30]</td>
</tr>
<tr>
<td>A restaurant meal</td>
<td>[0-10]</td>
<td>[11-20]</td>
</tr>
<tr>
<td>A snack in café/pub</td>
<td>[0-10]</td>
<td>[0-10]</td>
</tr>
<tr>
<td>Package holiday or plane tickets</td>
<td>[0-10]</td>
<td>[11-20]</td>
</tr>
<tr>
<td>Electrical appliance</td>
<td>[11-20]</td>
<td>[31-40]</td>
</tr>
</tbody>
</table>

Data in Column 1 is drawn from Table 4 at Annex 5, Joint written representations on the SO
Data in Column 2 is drawn from Table 25 at Annex 5, Joint written representations on the SO

17. As stated above, given the potential problems with the survey, these figures cannot be relied on as precise estimates of the proportion of cardholders who would switch to a rival merchant in response to a two per cent surcharge on credit cards. Nevertheless, the results indicate that for each of the sectors a non trivial and potentially a very significant
proportion of cardholders would switch retailer in response to a two per cent surcharge.

18. The survey also looked at the importance of credit and debit card acceptance on a cardholder’s choice of merchant. Respondents were asked for the three most important attributes when looking for a shop. In addition, as part of the conjoint analysis, the proportion of cardholders who would switch store if a store were to cease accepting credit or debit cards was estimated. Table Annex 10.2 below summarises the results of the survey’s findings on this. In the first column the proportion of respondents indicating that acceptance of debit cards is one of the most important attributes is recorded. In column two the proportion of respondents indicating that acceptance of credit cards is one of the most important attributes is recorded. In column three the estimated proportion of cardholders who would switch store if the store no longer accepted credit and debit cards is reported.

<table>
<thead>
<tr>
<th></th>
<th>Debit card acceptance important %</th>
<th>Credit card acceptance important %</th>
<th>Switch store if cards not accepted %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular supply of groceries</td>
<td>[0-10]</td>
<td>[11-20]</td>
<td>[21-30]</td>
</tr>
<tr>
<td>A few groceries</td>
<td>[0-10]</td>
<td>[0-10]</td>
<td>[0-10]</td>
</tr>
<tr>
<td>CDs, books, DVDs</td>
<td>[0-10]</td>
<td>[11-20]</td>
<td>[11-20]</td>
</tr>
<tr>
<td>Clothes</td>
<td>[0-10]</td>
<td>[11-20]</td>
<td>[21-30]</td>
</tr>
<tr>
<td>A restaurant meal</td>
<td>[0-10]</td>
<td>[0-10]</td>
<td>[21-30]</td>
</tr>
<tr>
<td>A snack in café/pub</td>
<td>[0-10]</td>
<td>[0-10]</td>
<td>[11-20]</td>
</tr>
<tr>
<td>Package holiday or plane tickets</td>
<td>[11-20]</td>
<td>[21-30]</td>
<td>[41-50]</td>
</tr>
<tr>
<td>Electrical appliance</td>
<td>[0-10]</td>
<td>[11-20]</td>
<td>[41-50]</td>
</tr>
</tbody>
</table>

Data in Columns 1 and 2 is drawn from Table 1 at Annex 5, Joint written representations on the SO
Data in Column 3 is drawn from Table 4 at Annex 5, Joint written representations on the SO

19. As argued above, these figures cannot be relied upon as precise estimates of the proportion of cardholders who would switch store in the event of a merchant choosing to discontinue card acceptance. Nevertheless, the results broadly indicate that a significant proportion of cardholders regard card acceptance as an important feature of a store and would switch store based on card acceptance.
ANNEX 11: THE EDC BAXTER ANALYSIS

1. MMF commissioned EDC to undertake a study of costs, *UK Credit Card Market Review (Baxter analysis) Draft Report* (24 September 2002) (the 'EDC Baxter Analysis'). This purports to show that the optimal interchange fee flows from acquirers to issuers and that the MMF MIF is an appropriate proxy for the optimal level. MMF used costs from eight UK issuers and five UK acquirers over a 12-month period to represent both acquiring and issuing activity in the whole UK market.

**MMF’s approach**

2. To measure the costs of a payment system, EDC adopted a life cycle/activity-based approach for both issuing and acquiring 'customers' which considered costs on [REDACTED].

3. To calculate revenue, EDC measured [REDACTED]. EDC used these revenues as a proxy for willingness to pay, which is in turn a proxy for the 'benefits' used in the Baxter framework.

4. EDC has relied on two alternative approaches to using the above 'willingness to pay' indicators in order to calculate the optimal rebalancing of costs (the 'MIF proxy'). [REDACTED]. Table 11.1 below sets out EDC’s results.

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739 An earlier version of the analysis, EDC *Baxter Analysis of the UK MasterCard Credit Card Payment System* (13 March 2002), which used a more limited sample of banks, was also submitted to the OFT.

740 See paragraph 5.50 Joint written representations on the SO.

741 [REDACTED].

742 [REDACTED].
Table 11.1: MMF’s indicative results for MIFs under a Baxter-type approach\textsuperscript{743}

<table>
<thead>
<tr>
<th>Approach</th>
<th>Total payment system costs, excluding appropriate return (pence per transaction)</th>
<th>Relative willingness to pay merchant: cardholder</th>
<th>Optimal MIF (% transaction value)\textsuperscript{744}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full service</td>
<td>REDACTED.</td>
<td>REDACTED.</td>
<td>REDACTED.</td>
</tr>
<tr>
<td>Charge card</td>
<td>REDACTED.</td>
<td>REDACTED.</td>
<td>REDACTED.</td>
</tr>
</tbody>
</table>

5. EDC claims that these results illustrate that their approach is a reasonable proxy for the level of interchange as determined by a full cost-balancing study, since the current MIF lies within the estimated range (i.e. between the full service and charge card calculations).

The OFT’s analysis

6. Notwithstanding the OFT’s reservations over the use of the Baxter framework set out in paragraphs 548-557 of this Decision, the OFT does not consider that the methodology underpinning the \textit{EDC Baxter Analysis} is consistent with Baxter’s theoretical premise.

7. There are two inherent problems with the \textit{EDC Baxter Analysis}. First, EDC is using merchants’ acceptance of credit cards and the ensuing revenue for acquirers as a proxy for merchant benefits. In paragraphs 551-554 of this Decision, the OFT outlined why such credit card acceptance is a poor measure of merchant benefit because the collective benefits may be close to zero. Using such a measure will yield an inaccurately high measure of optimal MIF.

8. Second, the \textit{EDC Baxter Analysis} has a degree of circularity underpinning its methodology. In part, this is because the revenue paid by merchants to acquirers is used as a proxy for relative willingness to pay, which in turn is used as a proxy for merchants' benefits relative to cardholder benefits. Yet this revenue is calculated using merchant MSCs which are a direct function of the prevailing MIF – which is the variable whose optimal level the cost studies are aiming to establish.

9. In concluding that, for the reasons outlined above, the methodology does not measure benefits in a satisfactory way, the OFT finds it instructive to consider below how the \textit{EDC Baxter Analysis} would treat an inappropriate cost category that (i) benefits cardholders (or at least makes them no worse off); (ii) would be paid by merchants if it were recovered through

\textsuperscript{743} Page 19, \textit{the EDC Baxter Analysis}.

\textsuperscript{744} MIF = (total costs * WTP of merchants – acquirers’ costs)/ average transaction value.
the MIF; but (iii) does not offer any genuine Baxter externalities. For illustrative purposes, this might be thought of as the equivalent of what the EDC Baxter Analysis would conclude if a credit card system inappropriately doubled the length of the interest-free period via a higher MIF that was still accepted by merchants.

10. MMF has argued that merchants show increasing preparedness to surcharge credit card customers and that there is intense competition between acquirers and between issuers. If, as a result of the increase in the MIF (resulting from the inappropriately inflated cost category), there is an across-the-board increase in MSCs, MMF considers that merchant surcharging will also increase. Whilst credit card users will, in effect, face higher retail prices, competition in card issuing will mean that they will be compensated by issuers who receive the higher level of MIF. But whilst the net benefits to cardholders may not change (and indeed the benefits to merchants decline), the benefits as measured by the EDC Baxter Analysis would increase and point to the new higher MIF being appropriate rather than unjustifiable.

11. Even if no surcharging takes place, merchants may individually decide to continue accepting the credit card in this example in order to avoid losing sales to neighbouring merchants who also accept credit cards (as the level of MSC that each merchant incurs is based on the same MIF, they will also find it relatively easy to pass on this higher cost to customers via higher retail prices). But if merchants’ collective benefit is zero (i.e. Baxter benefits do not increase), the benefits as measured in the EDC Baxter Analysis would nevertheless still increase. The result would still inaccurately indicate that the new higher level of MIF was optimal and appropriate.

12. This critique of the EDC Baxter Analysis was put to the Parties during the joint oral representations meeting on the R14. EDC accepted the methodological problem and pointed out that the methodology relies on competition in the market place.\footnote{In response to a question by Gary Roebuck (OFT), Peter Sidenius said that “If there was a theoretical point of view that there were activities taking place within the payment system which did not belong in there, which was of no benefit for the payment system as a whole, then...What we would do, when we have measured the actual costs that were in there, and what we have done in measuring that, is to a degree relied upon the competition in the market place to ensure that the payment products are tailored to the requirements of the market place”. Page 60, transcript of the Joint oral representations meeting on the R14 (5 February 2002).} The OFT does not accept that such competition will guarantee either an optimal MIF or that the EDC methodology will produce accurate results. The OFT considers that the only way that the EDC methodology would show the prevailing MIF to be excessive would be in the event that, for a given cost category, the European credit card systems – used as a comparator in the study – have significantly lower unit costs than MMF. This is not the OFT’s central concern in this case.
ANNEX 12: EVIDENCE ON CORRELATION BETWEEN MERCHANTS EXITING AND THE LEVEL OF THE MMF MIF/MSCS

1. Paragraphs 243-251 of the Market Definition section in this Decision contain a summary of the OFT’s analysis of evidence of the correlation between the level of MIF and MSCs and merchants exiting, which is based on the following.

Table Annex 12.1

[REDACTED]

2. This is a series of hypothesis tests, each testing the null hypothesis that one variable does not ‘Granger cause’ the other. In order to reject the null hypothesis at the 5% significance level the figure in the far right column would have to be smaller than 0.05. None of the reported probability levels approach this level of significance, hence the results show no positive examples of ‘Granger causation’ between any of the pairs of variables tested, in either direction.
<table>
<thead>
<tr>
<th>Table Annex 12.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>[REDACTED]</td>
</tr>
</tbody>
</table>
Table Annex 12.3

[REDACTED]