Fines and Reputational Sanctions: The Case of Cartels

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The Centre for Competition Policy is the UK’s leading inter-disciplinary centre focused on competition, regulation and consumer policy. We conduct independent policy-relevant research, organise bespoke professional development and provide specialist events such as conferences, workshops and seminars. We are a forum bringing together experts, government officials and practitioners from the fields of business, economics, law and political science to create and communicate high-quality research.

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On 9 November 2010 the European Commission fined 11 air cargo carriers €799 million for their role in the Airfreight price-fixing cartel. The next day, the Daily Mail wrote “BRITISH Airways has been slapped with a £90m fine by Brussels for colluding with rivals to operate a cartel on cargo routes...” and The International Herald Tribune reported, “After the 2001 attacks on the United States, the airlines were found by the European Union to have colluded on surcharges for fuel and security; Air France and KLM received the largest fines...” These are just two examples of many other news items that covered this cartel. In our paper (now published in the International Journal of Industrial Organization), we start from the assumption that impacts to the reputation of offending firms are an important part of the way markets react to the news of a cartel conviction, and media reports, such as the ones cited, play a central role in shaping the reputational impact.

In our article, we gathered 1,534 news articles documenting approximately 150 cartels convicted by the European Commission during the period 1992-2015 and with these provide evidence of the relative size of the reputational effect (when compared to the public fine) by introducing a novel way to measure this effect through how cartel-related news is reported in the media.

Public fines and reputational sanctions
Similar to other illegal behaviours, cartels face two types of sanctions: a public sanction, imposed by an administrative body or the court (the public fine); and a market-based one (the reputational sanction), which materialises through market mechanisms. One of the challenges researchers often meet is how to measure the size of reputational sanctions. A reasonable solution adopted in the literature is to link reputational sanctions to reputational impacts on corporations which, for publicly listed companies, can be measured by share price drop.

For publicly listed companies, the literature decomposes the share price effect of various corporate wrongdoings into the impact of the public sanction, a readjustment effect (without the wrongdoing profits are expected to be lower), and a residual that can be considered the reputational loss.

<table>
<thead>
<tr>
<th>Cartel</th>
<th>Sentiment Score</th>
<th>Number of Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airfreight</td>
<td>-1.04</td>
<td>88</td>
</tr>
<tr>
<td>Car Glass</td>
<td>-1.24</td>
<td>30</td>
</tr>
<tr>
<td>Prestressing Steel</td>
<td>-1.19</td>
<td>25</td>
</tr>
<tr>
<td>Methacrylate (Acrylic Glass)</td>
<td>-1.02</td>
<td>29</td>
</tr>
<tr>
<td>Banana</td>
<td>-1.19</td>
<td>18</td>
</tr>
<tr>
<td>Rubber (Chloroprene)</td>
<td>-1.31</td>
<td>13</td>
</tr>
<tr>
<td>Elevators and Escalators</td>
<td>-0.86</td>
<td>39</td>
</tr>
<tr>
<td>Belgian Beer Market</td>
<td>-1.06</td>
<td>17</td>
</tr>
<tr>
<td>Cement</td>
<td>-1.06</td>
<td>17</td>
</tr>
<tr>
<td>Professional Videotapes</td>
<td>-1.03</td>
<td>17</td>
</tr>
</tbody>
</table>

Table 1: Cartels with the most negative news coverage (average sentiment score, weighted by exposure)

For each article, we calculated a sentiment score. The range of article-level sentiment scores was between -1.5 and 0.5. Negative scores imply a dominant negative sentiment in an article.

Sentiment analysis enables one measurement of reputational impacts
We provide a methodological contribution to the literature by offering a way to measure key determinants of the reputational effect. We exploit recent developments in opinion mining and natural language processing to extract the opinion in the media coverage of corporate offences. We count the number of news items per cartel member as an indicator of exposure, and then quantify the extent to which the opinion of each news item is negative using sentiment analysis; together these two measures proxy the reputational sanction. The loss or gain in a firm’s market valuation is used as a proxy for the combined deterrence power of the sanctions. This method, applied to all the news items reporting on the Airfreight cartel, produced a very negative average sentiment score. In our sample, the Airfreight cartel received the most extensive and the most negative media coverage, leading to similarly negative movements in the stock prices of the businesses that committed wrongdoing.
Policymakers should appreciate the power of reputation
We find that, if media exposure is low, the marginal effect of the fine is strong, irrespective of the sentiment of the news coverage. This confirms that, if businesses are not exposed to much media criticism, the main thing affecting the market valuation of a misbehaving business is the size of the administrative penalty (fine) they receive. However, as exposure grows, the negative effect of the fine disappears, if the news sentiment is negative (i.e. there is a reputational penalty). We conclude that this is evidence that, in the specific case of cartels, public and reputational sanctions act as substitutes.

This evidence has strong policy implications. Most importantly, how the media cover the conviction of cartels matters. Competition agencies should take the drafting of their press releases very seriously, making sure that the severity of misconduct is clearly explained in a manner accessible to the press and public, since the reputational effect of bad press can potentially deter future misconduct, in a similar way to imposing fines.

Our empirical strategy allows us to look at the relative role of public and reputational sanctions in deterring misconduct. If the two types of sanction are substitutes, a smaller lower public sanction will not result in a smaller share price drop, if the size of reputational sanctions increase at the same time.

Regulating Data Privacy and Cybersecurity: Two Sides of the Same Coin?

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Consumer data are an ever more valuable commodity in today’s digitalized economy. The value of the global data market is estimated at $25-49 billion, and consumer data accounts for a substantial portion of the market value of many of the world’s largest and most innovative companies (up to 16% in the case of Amazon, for example). Against this backdrop, the decisions that firms make with respect to disseminating consumer data attract significant policy attention, as demonstrated by the GDPR in Europe and related legislation in the US. In a new research paper, we distinguish between two ways in which dissemination may occur. Data privacy describes the voluntary agreements that firms make to share data. Cybersecurity captures firms’ efforts to prevent the unauthorized accessing of data by computer hackers. We demonstrate the interdependence of firms’ decision-making in these areas and the need for a co-ordinated approach to regulating data privacy and cybersecurity.

3) An offending company’s share price should fall due to expectations that a weaker reputation will reduce future profits.

how the media cover the conviction of cartels matters
Interest in data protection – that is, preventing the uncontrolled dissemination of consumers’ personal data – is rising in the wake of privacy scandals at Cambridge Analytica\(^1\), Facebook\(^2\), and other technology platforms that, like Google\(^3\) and Twitter\(^4\), have become foundations of our everyday lives. However, privacy violations involving excessive data sharing between firms are only part of the data protection story. Equally important are the measures that firms adopt to prevent cyber-attacks, whereby computer hackers gain unlawful access to the information firms hold about their customers.

Data protection concerns both data sharing and cybersecurity
These two dimensions of data protection – the voluntary agreements firms make to share data and the cybersecurity investments they commit to prevent hacks – are likely to interact. The more widely consumer data are shared, the greater the harm consumers are likely to suffer from a cyber-attack on any individual data-holding firm. This matters to firms if they are liable, at least in part, for the harm suffered by consumers from successful hacks. Hence, the questions of how to regulate data privacy and cybersecurity cannot be considered in isolation of one another. Instead, a co-ordinated approach that accounts for the interdependent nature of firms’ decision-making is needed.

Economic research in this area focuses on firms’ incentives and the design of regulations to align these incentives with society’s interests. Despite the links between privacy and cybersecurity highlighted above, existing work treats these as separate problems. Our new research paper, “Co-ordinating Data Privacy and Cybersecurity Regulations”\(^5\), is the first to study the interactions between data privacy and cybersecurity in a theoretical model. We analyse firms’ incentives to share consumer data with third parties, and their incentives to invest in cyber-defences to reduce the likelihood of successful hacks. By comparing the profit-maximising choices that firms make when competing freely with the choices that society would wish to impose on them, we derive implications for the regulation of data privacy and cybersecurity.

Levels of privacy and security may not be optimal
A number of interesting results emerge. Firstly, even when firms are fully liable for consumer harm, their cybersecurity investments fall short of socially optimal levels. Firms tend to sell a lower quantity of their product at a higher price than society would choose, which reduces their incentives to protect consumers because their liability in case of a successful hack is lessered.

Secondly, firms may choose levels of data privacy that are too high or too low from society’s point of view. Which outcome emerges depends on market conditions. One factor causing firms to choose excessive levels of data privacy is the proportion of ‘sophisticated’ consumers within the population. These consumers understand that data sharing between firms implies an increased risk of cyber-attack and respond by reducing their demand for a firm’s product, which discourages firms from sharing data. As a result, consumer policies that aim to educate consumers about data risks may exacerbate the excessive privacy problem by increasing the responsiveness of demand to a firm’s decision to share data.

Thirdly, while society always prefers data sharing to be accompanied by higher investments in cybersecurity, firms may reduce their investments in cyber-defences when they share data with a third party. The reason is that data sharing exerts two distinct effects. Firstly, by increasing the risk of a cyber-attack occurring, data sharing directly increases a firm’s marginal return to security investments. Secondly, data sharing can lead the firm to set a higher optimal price, which indirectly decreases these same incentives. Data sharing leads to lower security investments whenever the latter effect dominates the former. In this case, although the risk of cyber-attack for an individual customer increases because their data is shared, the firm’s incentive to protect consumers is reduced because total sales fall as a result of the higher price.

The need for regulatory co-ordination
Finally, our model highlights the need for regulatory co-ordination. We show that interventions that bring firms’ data sharing practices into line with society’s interests affect their incentives to invest in cybersecurity (and vice versa), but not in a way that resolves the market failure. Therefore, regulations targeting data privacy and cybersecurity have to be co-ordinated so that any offsetting effects can be balanced and both objectives be met simultaneously.

This result echoes recent arguments made in favour of regulatory co-ordination by the National Infrastructure Commission.\(^6\) In addition, our results are applicable to the design of data protection legislation, such as the General Data Protection Regulation (GDPR) in Europe, and the California Consumer Privacy Act of 2018. The GDPR sets out a list of principles for the processing (including sharing) of personal data. Separately, there have been a number of initiatives in the UK to promote investments in cybersecurity, for example the 2016 Early Stage Accelerator Programme.\(^7\) To achieve co-ordination and avoid the unintended side-effects of competing regulations one possibility could be to align cyber-security investment schemes more closely with the GDPR.

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5) Paper available on request from the authors.
6) National Infrastructure Commission, 2019, ‘Strategic investment and public confidence’.
Are cases too good to litigate? Cost and fee recovery in antitrust collective actions in the UK

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The new opt-out collective action regime in competition law relies on external funding. Funders expect to recover their costs and receive a return on their investment if the case is won. However, the current interpretation of section 47C(6) of the Competition Act 1998 supposedly limits funders’ cost and fee recovery, thus, severely limiting the incentives to fund opt-out damages claims. We argue that this understanding of section 47C(6) is wrong because it is not supported by the parliamentary record.

In 2015 the UK introduced opt-out collective actions in competition law to improve access to compensation for victims whose harm fell short of the cost of bringing an individual case for damages. Opt-out collective actions enable a representative to bring a claim on behalf of a group (class) of individuals in the UK’s Competition Appeal Tribunal (CAT). Aggregating small individual claims into one large compensation action makes pursuing compensation claims worthwhile in scenarios where individual losses are small but a large number of individuals mean losses are large in the aggregate. However, opt-out collective actions are complex, costly, uncertain of success, and normally require up-front external funding. For investments in opt-out litigation to be attractive, funders expect to recover the costs associated with litigating the case (the costs) and a return on that investment (the fee). In our recently published paper, we show that the main understanding of cost and fee recovery does not provide incentives for investors to fund opt-out collective actions. Restricting the recovery of costs and fees is likely to harm the compensation objective in competition law and runs contrary to the intentions of Parliament.

The need for external funding
Opt-out actions are usually time-consuming and complex. Firstly, upon an application by the class representative, the CAT needs to make sure that the claim is suitable for an opt-out collective action. The defendant is likely to challenge this application. Secondly, if deemed suitable, the actual damages claim needs to be brought. Proceedings of this length and complexity are expensive. Funds are needed to pay legal representation, court fees and experts, and, if the claimants lose, after the event insurance (ATE) covering the reasonable costs of the defendant(s).

The crucial question is: who is going to pay for this? The class members do not enter into a fee agreement with the solicitors and representative because they are usually unaware of the legal action, and the numbers of class members would make such agreements impractical. Neither do class members pay the costs, if a case is lost. It is also unlikely that the representative has the necessary funds or is willing to pick up the tab. While law firms may offer their services on the basis of a ‘no win, no fee’ agreement (a conditional fee agreement), there are still considerable funding gaps that need to be filled – ATE alone can be over £1 million. This is why commercial litigation funders are central to the opt-out collective action regime. They provide the funds to ensure that costs are covered and, if the claim is lost, that defendants are able to recover a reasonable share of their own costs. However, funders are only willing to finance litigation if they can expect a return on their investment; in other words, if they can recover their cost and receive an additional fee. The size of the investment can be considerable. For example, in Merricks v MasterCard, Merricks’ lawyers have secured third party funding of £43 million to enable them to bring the case.

A funder’s recovery of costs and fees in opt-out collective actions
The current understanding of cost and fee recovery in opt-out collective actions reduces funders’ incentives to fund small and mid-sized opt-out collective actions. The recovery of cost and fees in opt-out actions is only mentioned in section 47C(6) of the Competition Act 1998 (as amended by the Consumer Rights Act 2015). This provision states that:

“the Tribunal may order that all or part of any damages not claimed by the represented persons within a specified period is instead to be paid to the representative in respect of all or part of the costs or expenses incurred by the representative in connection with the proceedings.”
Section 47C(6) is understood by many to contain a rule meaning funders and lawyers can only recover their cost, fees and reimbursements in a successful case after the damages award has been distributed to the members of the group (so-called post-distribution recovery). Section 47C(6) implicitly assumes a scenario where damages cannot be completely distributed to the members of the group and a sufficiently large amount of undistributed damages is available for funders to claim from.

If this understanding of section 47C(6) is correct – which we doubt – it is a departure from usual practice. In standard litigation, i.e. actions other than opt-out collective claims, the fee agreement between a client and lawyer will usually allow the lawyer and funder to receive costs and fees out of the damages award before damages are distributed to the claimant(s). If section 47C(6) is actually meant to limit recovery of costs and fees to post-distribution, it undermines the incentives to fund opt-out collective actions. This may not be a problem in very large cases, such as the MasterCard litigation, but will affect cases with smaller groups where the class representative can (almost) perfectly identify victims and distribute damages. In these smaller claims the risk is that insufficient damages remain after distribution to pay a funder’s success fee, or a solicitor’s uplift from a conditional fee agreement. Thus, if section 47C(6) is interpreted as a post-distribution cost allocation rule, cases with a good chance of (almost) fully allocating compensation will not be brought because they are unattractive to potential funders. This would mean no compensation for victims in these cases.

**Limiting fee recovery to post-distribution is wrong**

In our view, the understanding that section 47C(6) limits costs and fee recovery to post-distribution is wrong. Costs as well as funders’ fees ought to be paid before any damages are awarded to the class (i.e. pre-distribution).

We have already highlighted that limiting recovery of cost and fees to post-distribution undermines the willingness of funders to invest in group actions if it reduces the expected return on their investment. Thus, good compensation cases would not be brought and the opt-out mechanism would fail to deliver compensation to those who have been harmed by breaches of competition law. While our preferred interpretation of section 47C(6) means that in some cases less compensation is paid to class members, the alternative would be no compensation.

The origins of section 47C(6) demonstrate that this provision was designed to deal with the distribution of unclaimed damages, not with the recovery of costs and fees. The Parliamentary debate related to section 47C(6) is not always clear, but it appears that opt-out collective actions were thought of as relating to pro bono actions, in other words, lawyers were supposed to represent the class voluntarily and without payment. It seems that this was an overestimation of the willingness and resources of law firms to engage in opt-out collective actions as no pro bono case has so far appeared. Even if section 47C(6) is interpreted as a rule concerning fees and costs, the scope of the rule is limited to left-over funds in the context of pro bono actions.

Limiting recovery to post-distribution funds would also create a clear conflict of interest on the part of the class representative. The representative must act in the best interests of the class, i.e. they must ensure that damages are effectively distributed. At the same time, the representative, because of their contractual obligations, is incentivised to ensure that sufficient undistributed damages remain to be passed to the funder.

Finally, there are additional reasons to argue against costs and fee recovery post-distribution. These are the discretion the CAT enjoys in awarding cost and fees, as well as the principle of effectiveness, i.e. that post-distribution recovery severely undermines the ability to receive compensation.

**Conclusions**

We demonstrate in our paper that section 47C(6) deals with the special case of when funds are left over after distributing damages to all identifiable class members, It is a damages distribution rule and must not be understood as a rule limiting recovery of costs and fees to post-distribution. Instead, the usual rules for costs and fee allocation pre-distribution apply. Section 47C(6) has not been tested yet, but if opt-out collective damages actions are to become a mainstay of competition law enforcement, they require proper funding. Funders, in turn, require monetary incentives to invest in risky litigation. Without these incentives for funders, cases will be simply too good to litigate.

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1. In the UK only the CAT has jurisdiction over opt-out collective actions, see section 47B Competition Act 1998. The scope of opt-out collective actions is limited to breaches of competition law. See also CAT Rules 75ff.
3. If the claim and the representative are deemed suitable, the CAT will make a collective proceedings order (CPO).
4. For example, in the MasterCard opt-out collective action, the applicant spent around £1.75 million and the defendant (MasterCard) around £2 million on the application for a collective proceedings order (certification) in the CAT. These figures do not include appeals to the Court of Appeal and the Supreme Court. Walter Hugh Merricks v MasterCard [2017] CAT 16.
5. CAT Rule 98(1).
6. See https://mastercardconsumerclaim.co.uk/Home/Faq#faq6.
7. CAT Rule 93(4) replicates section 47C(6).
8. Reasonable costs can be recovered from the losing party, but they may not cover all a funder’s costs.
The Pizza Night Game: Conflict of interest and payoff inequality in tacit bargaining games with focal points

We developed the novel Pizza Night game to disentangle in an experiment the effects of payoff inequality and conflict of interest on coordination success when communication is impossible, and coordination relies on commonly known cues. We found that conflict of interest is the main barrier to successful coordination.

The challenges of coordination

Coordination problems are ubiquitous in economic and social life. In many cases, such as setting prices in illegal cartels and driving on the roads, when the Highway Code does not give guidance, solutions often need to be found tacitly, i.e. without explicit communication. A typical coordination problem often involves the creation of surplus (the excess of benefits over costs) through successful coordination, and its division among parties. Such a bargaining problem is not always easy to solve, especially when communication is impossible.

Economists often use games to model coordination problems. A coordination game usually contains two or more equilibria. Each equilibrium represents one of the ways in which coordination can be achieved, with each player earning a positive amount in case of successful coordination (an agreement), and nothing otherwise. Sometimes, all possible agreements are as good as each other, and parties share the surplus generated from reaching an agreement equally. In these ‘Pure Coordination’ games, success is driven by the presence of commonly available cues that suggest one of the possible agreements. But when different agreements result in different surplus shares to different parties – as in games with a ‘Battle-of-the-Sexes’ structure – these same cues are used much less effectively.

Our research sheds light on the causes of such coordination failures, as illustrated by the following illustrative story.

The concept of the Pizza Night game

An Italian couple have decided to meet for a meal in the evening but have not agreed whether to go to a steak house or a pizza restaurant, and they cannot communicate. Because the couple are Italian and pizza is an Italian food, they could use this jointly available cue to coordinate. How successfully they do so may depend on their preferences for the two foods. If they both have an identical taste for steak and pizza – as in a Pure Coordination game – the fact that pizza is Italian is the only discriminating factor. But suppose the husband prefers steak, the wife prefers pizza, and she enjoys pizza as much as he enjoys steak, and vice versa. As in a Battle-of-the-Sexes game, there is conflict of interest – each spouse strictly prefers a different food – and payoff inequality – wherever they meet, one is better off than the other. Intuitively, although the arbitrary fact that both share Italian origins still suggests the pizza restaurant, it may be more difficult for the spouses to choose on the basis of this cue. If they fail to co-ordinate, is it because the couple dislike inequality or because they cannot resolve the conflict of interest?

Beyond such stylized situations, the relative strength of these two mechanisms is a matter of real economic significance. A salient outcome that benefits both parties may not be achieved because it requires one party to sacrifice their own personal interest, and/or requires them to accept a smaller share of the surplus than the other. If the presence of unavoidable payoff inequality were sufficient to prevent the realisation of mutual benefit, it would be bad news for market economies: many profitable transactions could not take place. But if ‘stoicism’ in the face of unavoidable inequalities in rewards prevails, inefficiencies would be confined to cases where there are obvious conflicts of interest between the parties.

To discriminate between these two factors, we devised a new coordination game – the Pizza Night game. Suppose the couple has a convention to eat pizza on Saturday nights, and on a ‘pizza night’ the choice is between two pizza restaurants, one of which is Italian. Because the female spouse likes pizza better, both spouses know that she will enjoy food more wherever they eat. So, as in a Battle-of-the-Sexes game, there is payoff inequality – the wife strictly prefers pizza – and conflict of interest – the husband strictly prefers steak. But now the cue is more powerful, and they are more likely to choose on the basis of it. If they fail to co-ordinate, is it because the husband dislikes inequality, or because the wife cannot resolve the conflict of interest?
inequality. However, neither spouse has a strict preference between restaurants, so, as in Pure Coordination games, there is not conflict of interest. If coordination success in the Pizza Night game is as high as in Pure Coordination games, then the cause of coordination failure is a conflict of interest. If coordination success is as low as in Battle of the Sexes, the cause is payoff inequality. If it is intermediate, both factors are important.

The experiment and resulting evidence
We conducted an experiment including Pure Coordination games, Pizza Night games and Battle-of-the-Sexes games. Each game was presented as a bargaining table,5,6 in which a player (‘You’) was assigned to the red base at the bottom and faced an ‘Other’ player whose grey base was at the top. The players’ objective was to agree, without explicit communication, on how to allocate the two discs shown on the table (see Figure 1). Each disc had a value to each player, represented by the number shown on the half of the disc facing the player’s own base. The values and positions of the discs were known by both players. So, for example, in the Pizza Night game in Figure 1, the ‘You’ player’s value of each of the two discs was £8, hence, successful coordination always favoured the ‘You’ player. Pure coordination and Battle of the Sexes games were framed in a similar way. The discs could take values of £8 and £13 as in the Figure 1 example, or £10 and £11, or £6 and £15, or £4 and £17, thus spanning different extents of inequality. Each player could claim either none, one, or both discs, without knowledge of their co-player’s claims. There was an agreement whenever no disc was claimed by both players. In that case, each player earned the value to them of the disc(s) that they claimed. Otherwise, they earned nothing. In the table shown in Figure 1, the commonly available cue suggests that each player only claims the disc closest to them.

Figure 2(a) shows that, as in previous experiments, the commonly available cue was used by most participants in Pure Coordination games, but much less often in Battle-of-the-Sexes games. In the Pizza Night game, the close disc was claimed nearly as frequently as in Pure Coordination games. The coordination success for each game is shown in Figure 2(b). Two randomly chosen players would reach a successful agreement 80% of the time in Pure Coordination games, 73% of the time in Pizza Night games, but just 51% of the time in Battle-of-the-Sexes games. What is more, the degree of inequality did not matter in the Pizza Night game, the close disc was claimed much less often in Battle-of-the-Sexes games. In that case, each player earned the value to them of the disc(s) that they claimed. Otherwise, they earned nothing. In the table shown in Figure 1, the commonly available cue suggests that each player only claims the disc closest to them.

Figure 1: Pizza Night game bargaining table

Figure 2: (a) Proportion of close disc claims, and (b) expected coordination success

Night games, with participants being nearly as likely to coordinate when the difference in payoffs was £13 as when it was just £1.

Concluding remarks
Successful coordination often requires economic agents to take action without knowledge of the other party’s actions. The challenges posed by these bargaining problems can be alleviated by the presence of arbitrary, but commonly available, cues that point to a certain agreement. Our results suggest that inequality per se is not an obstacle to the use of such cues. The main impediment is conflict of interest. Since most market transactions involve the creation of mutual benefit but may result in distributions of surplus that systematically favour one of the parties, this is good news for the functioning of market economies.

References
Energy Brokers: A help or a nuisance for small businesses navigating the energy market?

Amelia Fletcher  Professor of Competition Policy
David Deller  Senior Research Associate

While householders’ engagement with the retail energy market has been the subject of considerable research, little attention has been paid to the experiences of micro and small businesses. Using unique data from a 2014 Ofgem survey, this article shows how energy brokers are key enablers of firms switching supplier, but that brokers’ excessive marketing is a source of significant dissatisfaction. This evidence suggests regulatory oversight of energy intermediaries could be beneficial. These insights also illustrate the additional knowledge that can be gained by regulators making anonymised raw survey data publicly available.

Market engagement by small businesses is under-researched
Consumers’ engagement with the retail energy market has attracted significant academic and policy attention. Concern that domestic (household) customers were potentially being overcharged for energy was a key factor leading to the Competition and Market Authority’s (CMA) investigation into the British energy market and the subsequent passing of legislation to place a cap on certain tariff types for domestic consumers. However, the CMA also concluded that there was room for improvement in the supply of micro and small business (MSB) customers. Using data from a 2014 survey by commissioned Ofgem (the British energy regulator), we provide the first econometric investigation of MSBs’ satisfaction with the energy market.

Policy concern around MSBs relates to perceived limits on their capacity to negotiate commercial energy markets. MSBs may exhibit capabilities and behaviours closer to domestic customers than to large corporate entities. At the same time, price comparisons in the non-domestic (MSB) market are more challenging than in the domestic market, and price comparison websites have a limited presence, because energy prices result from individual price negotiations, at least in theory. These concerns have led Ofgem to introduce a number of regulatory protections for MSBs, similar to those for domestic customers, including measures to enhance price transparency.

Small businesses dislike energy brokers’ frequent contact
In this complex environment, the stated role of energy brokers is to help firms identify, and switch to, cheaper energy tariffs. However, while descriptive statistics show that MSB satisfaction in this market is positive or neutral on a broad range of dimensions, a significant exception relates to the marketing behaviour of energy brokers and suppliers, which is widely disliked. Equally, views of energy brokers do vary across MSBs. Figure 1 shows that the views of brokers are broadly positive or neutral among those MSBs that used them as their main method to choose their current supplier. However, views are negative for other MSBs, especially those that had been contacted by energy brokers but chose not to use them. In this last group, 38.3% of MSBs reported a Very negative view of energy brokers.

Why do we observe negative views of brokers?
Figure 2 highlights that holding a Very negative view of energy brokers is correlated with firms recalling a large number of marketing approaches from brokers. While 15.7% of MSBs recalling 1 to 5 broker approaches reported a Very negative view of energy brokers, this percentage rose to 52.7% for MSBs recalling 50 or more approaches or too many approaches to remember.

![Figure 1: Population estimates of micro and small businesses' overall view of brokers by their use of brokers when selecting their current supplier/tariff (whiskers show the 95% confidence interval)](image1)

![Figure 2: Population estimates of the percentage of micro and small businesses with a Very Negative view of brokers by the number of broker approaches they recalled receiving in the 12 months prior to interview (whiskers show the 95% confidence interval)](image2)
We used ordered logit regressions to examine further the factors associated with MSBs’ view of brokers, after controlling for multiple variables. These regressions confirm that an increase in the number of broker approaches recalled by MSBs is associated with an MSB reporting a less positive view of energy brokers. When the number of approaches is treated as a continuous variable, an additional broker approach is associated with a 1.2 percent drop in the odds of having a more positive view of brokers, a result significant at the 1% level. This result holds even after controlling for whether an MSB used a broker as the main method to select their current deal.

**But using a broker is also associated with switching**

This dislike of brokers due to their intensive marketing contact is unfortunate, given the positive role that brokers can play in switching. Logit regressions show that MSBs using a broker to select their current energy deal are associated with a greater probability of having switched in the 5 years prior to interview, including after controlling for a wide range of variables. MSBs with higher energy expenditure are also more likely to use a broker, perhaps reflecting the greater financial gains to them from switching. However, recalling a large number of broker approaches (more than 6) is not associated with a higher probability of having switched compared to recalling 1-5 broker approaches. This suggests that while brokers play a positive role in switching, especially for MSBs with higher energy expenditure, the promotion of switching does not justify intensive broker marketing contact.

If MSBs have a low opinion of brokers, then a key route for MSBs to search and switch may appear undesirable to them. MSBs with a greater number of employees are associated with reporting a more positive view of energy brokers, so the issue of brokers being unattractive is most significant for the smallest firms.

**Nuanced regulation of intermediaries seems necessary**

The results above are directly relevant to the recommendations of the CMA’s investigation. The CMA concluded that increasing MSBs’ engagement with the energy market would be beneficial. Our results suggest that excessive broker marketing contact may be reducing the attractiveness of an important engagement route for many firms. The key policy challenge is to limit the extent of broker contact, which is currently at levels considered problematic, while still ensuring that brokers can help MSBs to identify and switch to better energy deals. An important question, which cannot be answered from the existing data, is whether the MSBs who used a broker as their main supplier selection method did so as a result of unsolicited broker contact or proactively sought out the broker they used. The answer to this question would indicate the extent to which restricting unsolicited broker marketing might, or might not, threaten MSB switching.

Our findings also support the case for greater regulatory oversight of third-party intermediaries (TPIs). The CMA (2016) noted, and supported, Ofcom’s intention to implement a Code of Practice for non-domestic TPAs. However, the progress made in implementing this code to date is unclear.

Regulators sharing survey data by default is recommended

Finally, exploring Ofcom’s survey data raises a wider policy point. It highlights the benefits of regulators allowing academics and other parties to access the data from the surveys that regulators commission. External parties can identify insights and methodological issues that a regulator may not be in a position to investigate by itself. Maximising insights from existing surveys may improve the evidence base on which regulatory decisions are made, thereby ensuring the best outcomes for consumers. We propose a presumption in favour of UK regulators sharing the anonymised raw data from the surveys they commission, with a public explanation being made when this is not possible. The approach of UK regulators, as of March 2019, appeared inconsistent. The authors are grateful to have been given special access by Ofcom to the data used here. However, and in contrast, Ofcom (the UK telecoms and media regulator) makes equivalent raw survey data covering the telecoms market for 2016 publicly available on its website.

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5. After responses of Don’t know are dropped, the categories of the broker opinion variable have a natural order, i.e. Quite Negative lies above Very Negative etc.
6. Odds refer to the ratio formed by the probability of being above a certain satisfaction category divided by the probability of being in or below the same satisfaction category.
8. In the CMA’s proposal, this risk would have been mitigated by allowing MSBs to opt out of the database and by permitting supplier marketing by letter only.
9. This could be the regulator, a consumer organisation or a consumer’s current supplier.
We take the locally collected price-quotes used to construct the Consumer Price Index in the UK for the period 1996-2013 and explore the impact of the Great Recession (2008-9) on the pricing behaviour of firms. We develop a time-series framework that captures the link between macroeconomic variables and the frequency of price changes, the dispersion of price levels and the size and dispersion of price growth. Changes in the behaviour of prices during the Great Recession are largely explained by changes in inflation and VAT. Gross Domestic Product is found not to influence prices. Nevertheless, the magnitude of the inflation effect is sufficiently small that it need not influence monetary policy.

Figure 1: Quarterly inflation and output growth 1996-2013

Large macroeconomic events and pricing behaviour
Until the onset of the COVID-19 pandemic, the period 2008-2009 saw the biggest recession in terms of lost output (Gross Domestic Product, GDP) in British post-war economic history. We investigate the impact of this big macroeconomic event by analysing the price quote microdata used to construct the UK’s Consumer Price Index (CPI): a series of over 20 million price quotes covering a wide range of items across the CPI, spanning the period 1996 to 2013.

Analysis utilising millions of price quotes
Our analysis consists of two parts. Firstly, we describe the behaviour of aggregate prices built up from the price quote data, including the proportion of prices that change in a given month (“frequency”), measures of the dispersion of price levels for each product, and indicators of the distribution of the growth of prices (absolute size, dispersion, and kurtosis). Secondly, we adopt a time series approach to uncover the relationship between these price statistics and the macroeconomic variables of output (GDP) and inflation. We also examine the effects of the three VAT changes that occurred over the period 2008-2011, as well as the impact of the Great Recession (GR). Our UK data complements studies using data from the US and France. The current research also extends the many studies on pre-crisis pricing behaviour.

Pricing behaviour depends on inflation not GDP
Our main finding is clear. For all our statistics, inflation matters but output does not. If inflation is higher, firms change prices more often (and there are more price increases and fewer price decreases). Theory indicates the connection...
between output and pricing is mainly via the link between output and marginal cost. The lack of any link between output and the statistics supports the view that marginal cost are ‘flat’ and respond little to output. This affirms findings that the Philips curve was flat, or disappeared entirely in this period.

Inflation increases the frequency of price changes, in particular, price increases. We estimate that a 1 percentage point increase in annual inflation causes an increase in the monthly frequency of about 0.5 percentage points. This implies that an increase in inflation from 2% per annum to 5% per annum would cause the proportion of prices changing in a given month to increase by 1.5 percentage points. Additionally, inflation reduces the dispersion of price levels, and reduces the dispersion of price growth, but increases its kurtosis.

The behaviour of these statistics during the GR is relatively similar to other time periods. Inflation was on average higher during the GR than during the preceding decade, which explains most of the changes to our pricing statistics, once the effects of the VAT changes are considered. Our findings can be seen as complementing and contrasting with Costain and Nakov’s (2011) study using Nielsen scanner data for the US which concluded that the response of prices to the macroeconomic environment is small, and also the findings of Berardi et al. (2015) for France that “during the Great Recession patterns of price adjustment were only slightly modified”.

The magnitude of inflation’s effects on pricing behaviour are currently too small to be important

**Links to firms’ pricing behaviour**

Our study looks at the aggregate effect of inflation on the pricing decisions of firms across many sectors of the economy. For each individual price, local cost and demand conditions are likely to be the most important factor. Nevertheless, inflation can have a small effect across a wide range of prices which shows up in aggregate. The CPI dataset we use does not include firm or price-specific data, so we cannot disentangle aggregate effects from local effects. However, Dixon and Grimme (2019) use a panel of German firms to analyse firm specific data and find that while inflation is a statistically significant variable, the firm-level effects are much more important in determining the probability of price changes.

**Links to monetary policy**

Our findings’ message for modelling monetary policy is that the magnitude of inflation’s effects on pricing behaviour are currently too small to be important. The inflation targeting policy followed by many central banks over the past quarter of a century has led to low and stable inflation so that, in the current environment, the feedback from macroeconomic variables to pricing statistics is a minor second-order effect that will not normally be of importance for monetary policy.

In contrast, if monetary policy led to a large long-term increase in trend inflation, then our results imply that this would have a significant impact on aggregate pricing behaviour, an impact which would need to be taken into account in monetary policy design. Our analysis of the impact of inflation is focussed on annual inflation, effectively a moving 12-month summation of past monthly inflation. It takes time for monetary policy to influence annual inflation. A sustained change in monthly inflation is needed to alter annual inflation and, in turn, the frequency of price changes and other price statistics.

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2. This measures the extent to which data is located in the ‘tails’ of the distribution.
One way to deal with apparent Coronavirus-related profiteering, apart from competition law enforcement, is to use regulation to cap the wholesale and retail prices of some products in high demand. However, the use of price controls and price caps has been criticised for running against the spirit of competition policy. This policy brief explains why price regulation is a highly disputed in contemporary regulatory practice and argues that, in the presence of persistent excessive prices, pragmatism justifies price regulation.

Price regulation as an alternative to excessive pricing litigation
Given the conceptual and practical difficulties that national competition authorities and the European Commission may encounter in excessive pricing cases, competition law enforcement may be a risky and time-consuming form of intervention. As a result, some countries, like France and Cyprus, have used regulation to cap the wholesale and retail prices of some products in high demand due to the Coronavirus pandemic. In the United States of America, many states already have laws against price gouging. These state laws apply during times of disaster or emergency and concern certain product classes, generally those necessary for survival or for coping with the problems created by a disaster.

Price regulation refers to “regulatory methods of determining and imposing controls on firms or industries” with the aim of restricting independent price setting. This may involve a fixed price or rate of return, a maximum price ceiling or minimum price floor. The use of price controls and price caps has been criticised for being in tension with competition policy. The free formation of prices, involving the interaction of supply and demand, is essential to the effective functioning of competitive markets and the efficient allocation of society’s resources. Price is “the most immediate parameter upon which undertakings compete”, and price movements can indicate whether demand exceeds supply. Prices also make consumers assess the value a product holds for them.

The challenges of price regulation
Moreover, it can be complex and difficult to determine a regulated price. On the one hand incentives for firms to operate efficiently need to be preserved and excessive profits avoided, while, on the other hand, the firms’ viability as profit making entities must continue and unintended distortions to actors’ behaviour minimised. Being fair to suppliers, it has been argued that price regulations do not consider the increased costs that may arise due to a crisis or disaster. It is unreasonable for firms to have to absorb increased costs to the benefit of consumers, particularly if firms invest in resilience systems to ensure they function during a crisis. As a result, this article suggests that price regulations should be flexible enough to enable price increases when they are attributable to increased costs for suppliers.

Within the EU, there are also concerns that applying price controls contradicts the pursuit of a competitive internal market. The internal market is built on open and undistorted competition, which presupposes the avoidance of unnecessary public restraints that may impact on efficiency or integration. Hence, any state-imposed limitations on the free functioning of the price mechanism constitute an “anathema to the underlying philosophy of the internal market”, as they are “a
Firms setting excessive prices provide the room for other firms to set excessive prices as well, thereby taking advantage of consumers in need of essentials. Therefore, this exploitation can arguably justify regulatory intervention, as society should protect its members from this kind of conduct in a time of crisis.

In conclusion, though price regulation is widely disputed, pragmatism justifies it, especially when excessive prices are likely to persist for long periods.

"each rival's response to competitive moves made by others is individually rational, and not motivated by retaliation or deterrence nor intended to sustain an agreed-upon market outcome, but nevertheless emboldens price increases and weakens competitive incentives to reduce prices or offer customers better terms."  

1. See paragraph 7, European Commission, 2008, ‘Guidance on the Commission’s Enforcement Priorities in Applying Article 82 EC Treaty to Abusive Exclusionary Conduct by Dominant Undertakings’, according to which “Conduct which is directly exploitative of consumers, for example charging excessively high prices or certain behaviour that undermines the efforts to achieve an integrated internal market, is also liable to infringe Article 82…. For the purpose of providing guidance on its enforcement priorities the Commission at this stage limits itself to exclusionary conduct and in, particular, certain specific types of exclusionary conduct which, based on its experience, appear to be the most common”.


5. See page 6, Dunne, 2017.


7. Opinion in Case C-58/08 The Queen, on the application of Vodafone Ltd and Others v Secretary of State for Business, Enterprise and Regulatory Reform EU:C:2009:596, para 38.


10. For example, see BBC News, ‘Coronavirus: Worst Economic Crisis since 1930s Depression, IMF says’, 9 April 2020.


When the escalation in Covid-19 sparked panic buying and shortages of key products, UK supermarkets asked the government to consider suspending competition law to allow them to co-ordinate supplies and reduce shortages. On 25 March 2020, the UK’s Competition and Markets Authority (CMA) published a document stating that, ‘Throughout the UK, businesses are... providing essential goods and services to consumers, to ensure key workers can carry out their important tasks and in getting the country through this crisis. The CMA understands that this may involve coordination between competing businesses. It wants to provide reassurance that, provided that any such coordination is undertaken solely to address concerns arising from the current crisis and does not go further or last longer than is necessary, the CMA will not take action against it.’ (paras 1.4 and 1.5) (emphasis added) This article examines the consequences of providing this reassurance and asks whether it is a good idea.

What could coordination amount to?
It is fairly common in times of national and international crises for governments to deviate from the economic and commercial wisdom of ‘normal times’ and to turn to increased cooperation and concentration of economic interests. This has included wartime cartels and those permitted during the Great Depression of the 1930s. The academic studies into these periods in history are too numerous to list here, but it is far from clear that allowing coordination during times of crisis is a good idea.

Competition laws closely reflect what economic theory teaches us: in most cases it is competitive markets that can deliver the best outcome for society. For this reason, most forms of coordination between businesses is illegal in the UK. This includes coordination between supermarkets, even if it only relates to distribution and delivery lines. So why do supermarkets believe that a restriction of competition is needed to tackle the present crisis?

One argument is that coordination allows them to achieve a more reliable supply of food in the face of the current spikes in demand for key products. This means sharing stock data and coordinating supply networks, distribution depots, delivery vans, which stores should remain open and possibly also the exchange of staff. For example, if one supermarket is well stocked with fresh vegetables and the other one with non-perishable goods, then it might make sense to coordinate the distribution of these products between them, so customers have access to these products in both supermarkets.

Another reason is the danger of higher prices resulting from bidding wars, sparked by the shortage of some items coming from suppliers. Coordinated purchasing from suppliers might be able to eliminate this and keep prices low. Finally, staffing could also be a problem, if some areas are affected by large numbers of ill or self-isolating staff; it could make sense to shut down some stores, to ensure others can remain open. But how well do these arguments stand up to more nuanced scrutiny?
Is the problem really about competition law?

We are yet to hear a detailed and convincing argument from supermarkets to show it was unhindered competition that contributed to the recent difficulties in meeting demand. Arguably, the shortages in supermarkets have not come about because of any fundamental problems relating to supply, which coordination between competitors will address. Rather it has resulted from a failure by retailers and government to take decisive action to stop panic buying and stockpiling. This might have protected those hardest hit by the shortages: low income consumers, the vulnerable and essential workers who do not have time to visit multiple supermarkets to fulfil their basic shopping needs. Indeed, the need to visit more than one supermarket only contributes to the spread of Covid-19.

One driver of this high demand comes from those seeking to profit from the crisis by scooping up supplies of high-demand products like hand sanitiser, only to sell them on at an enormous mark-up. Ironically, it is old English common law offences of regrading and engrossing that would perhaps be better suited to dealing with such practices, as these practices are more reminiscent of the effects of plagues and bad harvests experienced in the Middle Ages. The CMA are already targeting these practices, using consumer and competition law powers, but ironically may have to ask the government for emergency legislation if problems cannot be addressed using existing laws.

It is in fact difficult to see how coordination will help ease any of the issues identified above. For example, balancing out stocks could as easily be achieved by supermarkets trading with each other. Such back-and-forth bargaining would be much more likely to keep prices down than allowing a concerted action and coordinated prices. It is also doubtful that coordination will help avoid unwanted bidding wars between supermarkets, which might naturally be constrained by competition on the prices charged to end consumers. Indeed, even if prices paid to suppliers did go up, it would only stimulate more production of those products, which is exactly what is needed. Coordination may simply result in more stable supply through higher prices and less being sold.

Even if these assertions turn out to be false, there are other reasons to be concerned about allowing coordination between competitors.

Public v private objectives of a retail cartel:

A key problem is that the private incentive to collude is not aligned with the public interest objective, of allowing coordination to help deal with the crisis. Private cartels are typically formed to increase prices either directly, by limiting supply. It is of course legitimate for the government to decide that the need to ensure reliable supply, or stable employment and prices, is a legitimate policy objective that justifies a short-term reduction in competition. This was the case, for example, in the US under the New Deal, where cartels were allowed in order to prop up wages and employment. But in the current climate the arguments for a UK retail cartel (albeit a partial one) are dominated by the need to increase or stabilise supply, i.e. exactly the opposite of the incentives driving a private cartel.

Historically, there are many instances of crisis cartels encouraged or set up by governments. Yet, these were often met with the realisation that the incentives of private cartels and public interest goals they were supposed to serve, were misaligned. This in turn led to state action to transform these into public cartels. Something similar was documented by Newman (1948), who noted that privately formed cartels in Germany, which were condoned by the Nazi regime in the state’s interest, were gradually replaced by government-run cartels, once the government realised that,

> “a captain of industry who determined the kind, quantity, and price of his products exclusively from the point of view of his own convenience and profit had to be converted into a servant who cooperated in accordance with the wishes of a public authority standing above the interests of the producers.” (Newman, 1948, p.577)

Many other wartime cartels, whose objective was to maximise supply, were government run, which was the reason that there was little deviation from the government objective of allowing these cartels – the government could enforce the increase in supply.

For this reason, a lot hinges upon the ability to ensure that the cartel operates along the public interest lines, rather than following their own private incentives to limit supply, raise prices and share markets. It is notable that many cartels begin with legitimate exchanges of information between competitors, often encouraged by a government department or regulator, but these often go on to become harmful cartel arrangements.
extent that is necessary and in the public interest. By being allowed to fully share data on their stocks, businesses develop a level of familiarity with their competitors that did not exist before. This means that even after the relaxation of competition rules ceases, there will still be an increased ability to continue colluding (but now tacitly). This sort of behaviour, coined *residual collusion* by Harrington (2004), is not unprecedented in the history of cartels. The government could still consider that a higher post-crisis price level is worth accepting for more stable and increased supply during the crisis. However, that would assume that collusion increases supply – which is doubtful.

**If output under competition was not sufficient, why would cartel output be any better?**

The epidemic, and the subsequent government measures, have created a sizable challenge to UK businesses. Supermarkets are no exception. They are facing an enormous increase in demand, there is an unprecedented increase in the need to deliver, both of which are creating shortages and sporadic supply, which is why they are asking to be allowed to co-ordinate to better meet this increased demand. As the price elasticity of consumer demand is eroded, supermarkets are seemingly pushed to compete on other dimensions (such as supply stability, or to preserve a ‘can-do’ reputation). Imagine that one supermarket cannot cope with the increased demand and folds. This is something that would have implications far beyond the crisis period.

There are two ways to avoid this. One is, by competing, i.e. trying to be better than their competitors. As students of competition policy, we believe this is the solution which provides the best outcome for society. But supermarkets can also start rent seeking, i.e. asking the government to exempt them from anti-cartel laws, and thereby they can agree that none of them will outperform the others. The relaxing of the present rules may even cause supermarkets to close some stores, so as to concentrate supply where it is needed most. Coordination will ensure those closures do not overlap with each other (thereby ensuring that at least one supplier remains in each geographic location). But ensuring that there is at least one supplier in any area does not equate to ensuring that there is sustained supply of food in these areas. On the contrary, economic theory would suggest that reduced competition is unlikely to lead to a sustained increase in the supply of food.

To conclude, the relaxing of competition law may be justifiable in the face of such an unprecedented crisis, but the wisdom of allowing coordination is far from clear and the CMA should work to ensure that any relaxation of competition laws has as few unwanted effects as possible. The effects on markets will also be closely scrutinised by academics, who will study both the impact during the crisis and what happens afterwards.