Summary

- Which? welcomes the CMA's evidence paper *Algorithms: how they can reduce competition and harm consumers*. We largely agree with the harms set out in the paper and believe that these should be the focus of the CMA's algorithm programme.

- Which? believes the CMA should investigate algorithmic pricing in general insurance markets. The FCA has shown that firms in these markets use extensive personal data to optimise the prices offered to individuals and that this is done for both new business and renewals. Such personalisation is likely to be causing harm to consumers because they cannot avoid it. In fact, the lack of transparency of these practices means that consumers are unlikely even to be aware of them. There are also concerns that pricing practices in these markets may be leading to indirect discrimination that breaches equality law.

- We welcome the role of regulators as set out in the evidence paper, but we believe that the auditing of AI should include auditing and scrutiny of the data being processed. Oversight and scrutiny of quantity, quality, standard, origin and necessity of data are all critical considerations. Just as there is an intention for companies to be held responsible for the outcomes of their algorithms, they should also be responsible for the data used to generate these outcomes.

Responses to specific questions

Question 1: Are the potential harms set out in the review paper the right ones to focus on for our algorithms programme? Are there others that we have not covered that deserve attention?

Yes, we believe that the harms set out in the review paper are the right ones for the CMA to be focussing on.

We welcome that the paper specifically considers harm caused by ineffective platform oversight. In many platform markets, an individual platform fundamentally shapes the way in which a market operates by setting the terms by which businesses and consumers engage and if the platform fails to use an algorithm effectively to protect consumers then this will lead to harm. As the paper notes, this is the case where platforms have not been able to detect fake reviews.

Question 2: Do you agree with how we have described each harm, and are there other examples that demonstrate them in addition to the examples we have included?

Yes, we largely agree with the way these harms are described.

We would expand on the description of the harm caused by ranking and recommendation algorithms. These may be used unfairly to directly cause harm, but we have also found that they can indirectly lead to harm because they incentivise bad practices by businesses. At a highly competitive online marketplace then a platform endorsement, such as Amazon's Choice, can be hugely impactful on sales. However, our research has shown that such recommendations are awarded to products promoted with fake reviews. Further, since returned products are monitored by Amazon and high return rates can affect the chance of an Amazon's Choice endorsement then this can encourage businesses to have no return policies.[1] When coupled with ineffective platform oversight, this will increase the harm experienced by consumers and businesses acting honestly.

Question 3: How likely and impactful are the identified harms now, and how might they evolve in the next few years?

We believe that many of these harms are likely to be having a substantial impact on consumers now and that without regulatory action this will increase in the coming years. Recent Which? investigations have set out the volume of financial and health data that is collected about consumers.[2] As such data becomes increasingly widely used in businesses' algorithms then the potential for harm will increase.

Question 4: Are there specific examples that we should investigate further to consider whether they are particularly harmful and potentially breaching consumer or competition law?

We would like to draw the CMA's attention to the algorithmic pricing practices currently being used in the UK's general insurance markets as we believe that these practices warrant more detailed scrutiny.

Your paper notes that the FCA found some home and motor insurance firms use complex and opaque pricing techniques to identify consumers who are more likely to renew their policy and that this has contributed to the loyalty premium in these markets. However, we think that this underplays the extent to which price personalisation occurs in general insurance. The FCA reports that margin optimisation is used for new business as well as renewal pricing, so that in addition to retention, propensity modelling is used for conversion from price offer to sale and for the selling of ancillary products.[3]

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[1] See for example, Which? (March, 2020) *Amazon's Choice badges removed after Which? Investigation* and Which? (March, 2021) *The big business of fake reviews.*
[2] Which? Computing (August, 2020) *A dose of data* and Which? Money (March, 2021) *Who do they think you are?.*
[3] FCA (2018), General insurance pricing practices market study, MS18/1.2 Interim Report

Which? is concerned about the revelations in the FCA's Interim Report about the nature of the personal data used by general insurers to optimise prices (margins). The FCA notes that the number of factors used by firms in their pricing models ranges from under 50 to over 400, and that these include factors that are "*...unrelated to risk including, for home insurance, customers' occupation, where they shop and what else they buy*" and "*Factors relating to customers' buying and media habits, including their browser type...*". The use of such an extensive set of items of personal behavioural data means that these insurance prices have a high degree of personalisation that is not to do with the risk of the insured.

Although general insurance markets can usually be considered to be competitive in the UK, we believe this personalisation is consistent with many of the factors that are more likely to make it harmful.[4]

First, it would not be possible for a typical consumer to avoid personalisation. This is because:

- Motor and (often) home insurance are essential products;
- The pricing models are complex and opaque;
- Insurance prices necessarily vary across consumers due to differences in expected claims and so a reasonable baseline can rarely be established by comparison with friends and family;
- The practice appears, to varying degrees, to be widespread across the market, but even the prices of insurers employing the least sophisticated forms of price discrimination are likely to be indirectly influenced by the highly personalised pricing of other firms. This is because all prices will be adjusted according to demand and so not all firms need to personalise prices for the entire distribution of prices to shift in a way that might be harmful to a consumer.

Second, there are distributional concerns as the consumers with the most inelastic demand will suffer most as prices become increasingly personalised. This may be reasonable where elasticity of demand reflects willingness to pay and is determined by factors such as income and value of time. However, a lower demand elasticity may be a consequence of low capability to search for better prices, and price discrimination in these circumstances can dampen competition and lead to worse outcomes for consumers. In a study of the UK motor insurance market, McDonald and Wren (2017) find that older and unemployed consumers face higher prices that are not explained by the level of risk of those consumers. Since these consumers are relatively low income and/or time rich then this is not an obvious case of these consumers having a higher elasticity of demand, but it is consistent with these groups having lower online search skills. The implication is that prices reflect the average ability of these consumer groups to find a good price, and markets in which search is less effective are less competitive.[5] Moreover, the FCA finds that firms are price discriminating based on consumer awareness with higher prices paid by consumers with less financial knowledge, no internet access, and who trust firms to offer competitive prices, some of which may be correlated with characteristics of vulnerability.

Thirdly, the cost of personalising prices could be passing through to consumers as higher prices overall or decreasing the relative incentive of firms to invest in other innovations that may lead

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[4] OECD (2018), Personalised Pricing in the Digital Era – Note by the United Kingdom
[5] McDonald, S, & Wren, C (2017). Consumer search ability, price dispersion and the digital divide. *Oxford Bulletin of Economics and Statistics*, *79*(2), 234-250.

to longer term benefits for consumers. There has been a large increase in the number and type of factors in pricing models, and a further increase is expected in the coming years.[6] The acquisition of this data is undoubtedly costly and such an arms race of investment in machine learning for price optimisation will result in the extensive use of personalised pricing that is unlikely to benefit consumers. By contrast, this investment might be societally improving if it were instead made in other parts of the insurance value chain such as product development or claims management, for example identifying fraud.

In addition to the potential harm from price personalisation, we cannot be confident that insurance companies are fully compliant with equalities legislation. In 2016, Which? reported instances of drivers born overseas paying considerably more for motor insurance, which we believed to be a breach of the Equality Act 2010.[7] As pricing algorithms use machine learning on an increasing range of consumer variables there is an increased risk that biases will emerge that might lead to indirect discrimination on protected characteristics. McDonald (2015) compares UK motor insurance prices before and after the implementation of the Tests-Achats ruling in 2012 that banned the use of gender as a risk rating factor. The research finds evidence of indirect gender discrimination among young consumers as the impact of occupation on price changed over time.[8] Pricing models have become increasingly sophisticated in the intervening years and we note that the FCA considers firms' oversight of pricing practices to require significant improvement.[9]

When insurance pricing happens in a black box then it is impossible to be sure that consumers are not being unfairly discriminated against by price optimisation practices. Our observational study of pricing suggests that consumers may even be made worse off by searching for prices. We have found instances in which a consumer who compares different levels of coverage can subsequently face higher prices. This is because the act of comparing prices for different levels of cover is itself used as a factor in price algorithms and these update in real time. We understand that firms may argue that this is behaviour correlated with an individual's risk or the likelihood of fraud, but this search is necessary to discover that 3rd party insurance is poor value for money[10]. In effect, consumers can be punished for searching.

Which? research on the use of consumer data found that consumers tend to have fundamental and deeply held concerns about personalised pricing.[11] For many, personalised pricing undermines their sense of control and consumer choice since it is impossible to act as a savvy consumer if you have no way of knowing if you are being shown the lowest prices.

Given all this, we think the CMA should look more closely at algorithmic pricing in general insurance markets.

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[6] See, for example, Eiopa (2019), *Big data analytics in motor and health insurance: A thematic review*

[7] Which? (2016), *Insurers in breach of equality law, says Which?*, September 2016.

[8] S McDonald (2015) *Indirect Gender Discrimination and the TestAchats Ruling: An Examination of the UK Motor Insurance Market* (presentation to Royal Economic Society, April 2015). https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=RES2015&paper_id=791

[9] FCA (2018), General insurance pricing practices market study, MS18/1.2 Interim Report

[10] Cannon, E., Cipriani, G. P., & Bazar-Rosen, K. (2016). More for less? Puzzling selection effects in the insurance market. *Oxford Economic Papers*, *68*(4), 879-897.

[11] Which (2018), *Control, alt, or delete? The future of consumer data*. https://www.which.co.uk/policy/digitisation/2659/control-alt-or-delete-the-future-of-consumer-data-main-report

More generally, we think the absence of evidence on personalised advertised prices is out of step with the technical capability of many personalisation services. Our early research on popular e-commerce 'personalisation' solutions, which offer retailers the ability to personalise the customer experience, has indicated that some overtly offer personalised pricing as a feature. Therefore, Which? recommends undertaking further research into the commercial solutions that enable retailers to personalise their experience to uncover the scale of the capability and its use.

Question 7 - Is the role of regulators in addressing the harms we set out in the paper feasible, effective and proportionate?

Which? welcomes many of the actions for regulators that are set out in the paper. These include:

- Providing guidance to businesses to help them quality assure and be transparent about their algorithms. The design and build of machine learning algorithms should be accountable, ethical and responsible, but for an individual business it can be difficult to know the appropriate standard to hold itself to and so regulators need to provide guidance on what these are.

- Identifying potential harms from algorithms. This will be an ongoing process as new harms may be created by evolving business models. For example, we have recently learned of personalised versioning, in which the quality of a good or service is tailored to an individual.[12] The CMA will need to remain vigilant to emerging harms and we welcome the intelligence gathering that the Data, Technology and Analytics Unit is undertaking to identify new harms.

Finally, we support the view that auditing of AI should be a requirement of the regulators, this should include auditing and scrutiny of the data being processed. As we have highlighted in this submission, the use of data in general insurance pricing is profoundly worrying and poses questions around the ethics of the practice, not to mention the responsibility of the companies around necessity, proportionality and the requirement under data protection law to collect only the data needed. The mission creep of necessity and proportionality is of serious concern. Oversight and scrutiny of quantity, quality, standard, origin and necessity of data are all critical considerations. Just as there is an intention for companies to be held responsible for the outcomes of their algorithms, they should also be responsible for the data used to generate these outcomes.

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[12] See Goli (2020) who identifies the case in which a streaming service may choose to personalise the number of adverts served to an individual. (Goli, 2020, Personalized versioning: Product strategies constructed from experiments on Pandora, PhD thesis, University of Chicago.)

About Which?

Which? is the UK's consumer champion. As an organisation we're not for profit - a powerful force for good, here to make life simpler, fairer and safer for everyone. We're the independent consumer voice that provides impartial advice, investigates, holds businesses to account and works with policymakers to make change happen. We fund our work mainly through member subscriptions, we're not influenced by third parties and we buy all the products that we test.