

# Memorandum

To: CMA  
From: CRA  
Date: 31 July 2020  
Subject: Observations on the CMA Report quantitative analysis of fees

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The final report of the CMA on online platforms and digital advertising (the “Report”)<sup>1</sup> explains in a great level of detail why the ad tech market does not function properly, competition is weak, and Google’s dominant position is “*protected by such strong incumbency advantages – including network effects, economies of scale and unmatched access to user data*”.<sup>2</sup>

We welcome the Report as the most cogent and detailed analysis of the issues with the online advertising landscape and the one with the most concrete proposals for future intervention. We also agree with the vast majority of its reasoning and analysis. However, we have concerns with some of the analyses and conclusions in Appendix R: in particular the assessment that Google’s “take rates” are in line with other (non-dominant) intermediaries;<sup>3</sup> and its analysis of the extent to which Google has a systematic advantage in ad auctions which allows it to win at lower winning margins than rival bidders.<sup>4</sup> These analyses and conclusions differ from other studies including the recent ISBA/PWC study which estimated a take rate of 49%<sup>5</sup> (as opposed to 35% presented in Appendix R) and our own prior submission of Google’s winning margin based on News UK data.<sup>6</sup>

For reasons we explain in this document we consider that these aspects of the Report’s analyses and conclusions are likely to be non-robust and, notwithstanding the Report’s caveating of these findings, there is a risk that they could be misinterpreted as suggesting Google is not exerting its market power in ad intermediation to extract rents from other market participants. Some of our concerns may also result from a lack of precise understanding of the methodology and the data used in Appendix R. Therefore simple clarifications could alleviate some of our concerns or help shed further light on what

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1 <https://www.gov.uk/cma-cases/online-platforms-and-digital-advertising-market-study>

2 See Report para. 8.

3 Appendix R seems to conclude (albeit with caveats explained in the text) that “*Google take rates are [...] broadly in line with what non-Google intermediaries charge for similar services*” Appendix R para. 21.

4 Appendix R concludes (albeit again with caveats) that “*overall the evidence does not clearly support Google Ads having a systematic advantage over other bidders*” para. 28.

5 See ISBA Programmatic Supply Chain Transparency Study, Executive Summary, available at <https://www.isba.org.uk/media/2424/executive-summary-programmatic-supply-chain-transparency-study.pdf>

6 See CRA presentation “CRA analysis - Google's conduct in ad tech and transition to UPR” submitted to the CMA on 29 May 2020.

is driving the differences set out above. We would urge the CMA to consider these observations and requests for clarification in any further dissemination of the Report's findings.

Our observations and queries on both analyses are presented in turn in the following sections. Section 1 discusses the estimation of Google's take rate whilst Section 2 deals with the estimation of Google's winning margin.

## 1. ESTIMATION OF GOOGLE'S TAKE RATE

### 1.1. Summary of the analysis in the Final Report

The CMA analysis draws on four different data sources to estimate Google take rates: (i) Google aggregated 'market' data for 2019;<sup>7</sup> (ii) Google financial data for 2018;<sup>8</sup> (iii) a limited sample of Google impressions for the period June 21 to September 24, 2019;<sup>9</sup> (iv) an impression-level sample extracted for the CMA containing all queries from Google Ad Manager web traffic from 8 to 15 March 2020.

The most relevant data for the purpose of this analysis is the fourth data source containing impression-level information extracted specifically for the CMA. The other sources are less relevant because they either rely on very aggregated information (1<sup>st</sup> and 2<sup>nd</sup> data sources) or are limited and were extracted for other reasons (3<sup>rd</sup> data source). The fourth data source is the only one allowing the CMA to "follow the money" and run a more detailed analysis of the fees and take rates at each level of the chain and for various combinations of Google tools that can be used. In theory, this dataset allows one to match both sides of the market and compare, for a given set of impressions, advertisers' payments with revenues accruing to publishers.<sup>10</sup>

The CMA finds that over the period 8-15 March 2020 Google take rate relating solely to Google Ads intermediation was **12%** on average and when Google Ads was used in connection with Google Ad Manager (AdX) the Google take was **30%** on average. The CMA observes however that there is "*considerable variation in the overall Google take rate and Google Ads take rate across publishers. The overall Google take rate ranges between 15% and 35% whilst the Google Ad take rate ranges between -5% and 19%*".<sup>11</sup>

As for the overall market take rate, the CMA estimates that: "*[o]n average in 2019, publishers received around 65% of initial advertising revenue that was paid by advertisers (i.e. the overall 'ad tech take' was around 35 pence from every pound spent by advertisers)*".<sup>12</sup>

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7 Google reported market data for 2019 for all impressions delivered to UK-based users based on extracts from its systems.

8 Unaudited Google reported financial data for all impressions delivered to UK-based users for 2018;

9 We understand this data was submitted by Google in the context of a randomised control trial to estimate the change in publisher revenue when cookies are turned off.

10 In particular, one cannot rely on the aggregated market data reported by Google to accurately assess the Google Ads take rate, but instead should examine detailed impression-level data, which can only be done, as the CMA explains, from the fourth data source.

11 See para. 20 of Appendix R.

12 See para. 2.70 of the Report.

Based on this analysis the CMA states that the Google take rates when ads are purchased/sold through Google Ads/Google Ad Manager (AdX) are: “broadly in line with what non-Google intermediaries charge for similar services”.<sup>13</sup>

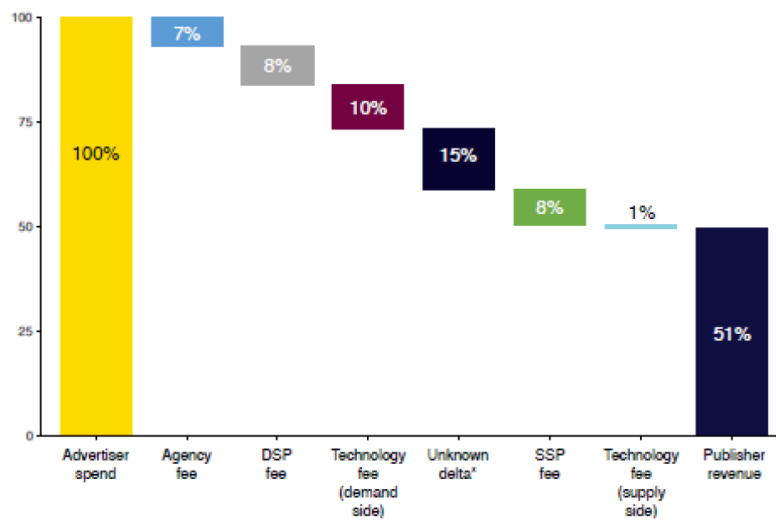
## 1.2. Comments on the analysis and conclusions presented in the Report

We are concerned that these findings may not take full account of a number of important factors and that these risk underestimating Google’s take rate and potentially leading some readers to the false conclusion that Google does not have, or is not exerting, market power to charge supra-competitive fees as compared to other intermediaries.

Our concerns are in the following main categories: the existence of arbitrage mechanisms that are not accounted for in the computation of the 35%; differences between the Report and other studies (e.g. the ISBA/PWC on the estimated take rate); the presence of other fees and charges (acknowledged elsewhere in the Report) which mean that the 35% figure will represent only a lower bound; and the reliance of a single week of data occurring during the Covid-19 crisis. We note also that the variation in Google take rates observed across publishers means that the comparison with other intermediaries is unlikely to be sound.

**Other studies (e.g. ISBA/PWC) found a much higher take rate.** The 35% figure estimated in the Report is much lower than other studies: the recent ISBA/PWC<sup>14</sup> found that publishers receive on average 51% of the ad spend, with ad tech intermediaries capturing the remaining 49%.<sup>15</sup> The authors of the ISBA study were also unable to attribute 15% of ad spend and used the term “unknown delta” to describe that gap.

**Figure 1: ISBA/PWC analysis of take rates across the ad tech supply chain**



Source: ISBA Programmatic Supply Chain Transparency Study.

<sup>13</sup> Appendix R para. 21.

<sup>14</sup> The Incorporated Society of British Advertisers.

<sup>15</sup> See ISBA Programmatic Supply Chain Transparency Study, Executive Summary, available at <https://www.isba.org.uk/media/2424/executive-summary-programmatic-supply-chain-transparency-study.pdf>

**The 35% figure does not include Google Open Bidding fees of 5 to 10%.** Publishers' share may be much lower than the average estimated in the Report because the CMA did not include the 5 to 10% charge imposed by Google on ads that are sold through Google Open Bidding. An additional 5 to 10% is far from being negligible. Even less so when we know – and as the Report explains – that Google has historically undermined the development of header bidding, aiming to replace rival solutions with its own header bidding offer (so-called Open Bidding) where it can charge a fee. Moreover, the fee mechanism in place creates a distortion in the market since only impressions that are not served through AdX will be charged while fees are waived if AdX wins the impression.

**The analysis does not appear to account for all hidden charges which would act to render the 35% a lower bound. We would welcome clarification on the structure of the dataset used so that this issue can be further explored.** The Report explains that “[a] number of categories that are suggested by the ISBA/PWC study as making up the ‘unknown delta’ may not be the fees/charges data reported to [the CMA], such as, for example, any measurement error or post auction bid shading”. Post auction bid shading is the practice of submitting to a subsequent auction a bid that is lower than the auction clearing price. We do not know to what extent this could influence the results, however we note that this naturally makes the analysis presented in the Report less conclusive. We would also welcome clarifications as to what potential hidden charges are accounted for in the CMA’s analysis and the structure of the dataset used.<sup>16</sup> For example, if part of the double auction mechanism set up by Google (whereby Google Ads submits a lower bid in the subsequent AdX auction) has not been taken into account, the presented take rates would be significantly underestimated.

Without further clarification it seems important that the 35% be seen as a lower bound estimate on Google’s take rate. While the Report rightly notes this in places “likely to be an underestimate and publishers’ share may be lower than this”<sup>17</sup> there are other places where its findings are not as fully caveated.

**The existence of a Google Ads margins also confirms that Google is able to engage in arbitrage activity that raises its effective take rate.** Google Ads has admitted that it may submit in the Unified Auction a bid which is lower than the price it charges in its own internal auction. Google used to challenge the existence of such a pricing arbitrage mechanism. For example, Google’s November 2019 response to Questions for the Record from the US House Committee on the Judiciary<sup>18</sup> read as follows suggesting that Google Ads does not charge any fees:

***“Assuming that an advertiser chooses to use Google’s ad tech at each step of the supply chain, please identify the average amount that would be debited at each step, assuming \$100 in ad spend.***

*Google Ads is designed to allow advertisers to take advantage of the benefits of online advertising and therefore boost advertisers’ return on their investment, while giving advertisers control over how much they spend on advertising. Advertisers placing ads through Google Ads*

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<sup>16</sup> In particular, it would also be useful to clarify whether the 12% margin estimated on Google Ads is entirely due to post auction shading behaviour from Google or whether it is also related to something else (e.g. explicit fees paid by advertisers).

<sup>17</sup> Para. 5.214 of the Report.

<sup>18</sup> Subcommittee on Antitrust, Commercial and Administrative Law.

*do not pay any fees, so \$100 of spending through that channel is entirely available for bidding on inventory.*<sup>19</sup>

Now Google clearly admits the existence of a margin made on Google Ads. Even if Google would not classify this as a “hidden fee” but claims this is just “take rate for intermediation services”, it still confirms the existence of a pricing arbitrage mechanism. Even considering that Google should be allowed to charge for its services, there exist less distortive ways to charge for Google Ads services giving rise of less conflicts of interest. But the mechanism in place contrasts strongly with a more “passive” or “neutral” conversion of the advertisers’ bids. Rather, Google has an *incentive* to engage in a pricing arbitrage whereby it aims to lower its bids as low as possible as long as it can win the Unified Auction. And given that Google Ads often wins the auction “unopposed”, as the Report has found, an advertiser will not be rewarded for submitting a higher bid in Google Ads (but Google Ads will win more by pocketing the larger spread).

**Most relevant dataset contain only one week of data during the Covid-19 crisis.** The only dataset that allows the CMA to conduct a deep dive into Google’s margins is the impression-level dataset. However, this dataset is limited to a period of one week. In addition, data has been collected during the Covid-19 crisis, which has strongly distressed the market, and therefore is likely to be less representative.<sup>20</sup> This probable lack of representativeness of the data seems to be reflected in the volatility of the CMA results, as is discussed next.

**Material variations are observed in the estimated take rates.** The CMA recognises that results “*vary significantly across the ten large publishers (by number of queries) in the dataset*”.<sup>21</sup> This lack of robustness of the results is apparent in the next table reporting Google Ads and Google total take rates for the top 10 publishers. The overall Google take rate ranges between **15%** and **35%** whilst the Google Ad take rate ranges between **-5%** and **19%**. We think that this volatility means that the numbers should be applied with caution, that the 35% figure should not be considered as definitive and should not be considered sufficient to reach the conclusion that Google is pricing at a comparable level to other intermediaries.

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19 Google’s Submission In Response To Subcommittee Questions For The Record Following July 16, 2019 Hearing, available at <https://docs.house.gov/meetings/JU/JU05/20190716/109793/HHRG-116-JU05-20190716-SD030.pdf>, page 38 (emphasis added).

20 In our submissions (which show that Google *is* significantly advantaged vs. other intermediaries) we replicated the results for multiple sampling periods to ensure robustness of the results.

21 See para. 19 of Appendix R.

**Table 1: Significant variation in the estimated Google take rates for selected publishers when ads are purchased/sold through Google Ads/AdX**

| <i>Publisher</i> | <i>Google total take rate</i> | <i>Google Ads take rate</i> |
|------------------|-------------------------------|-----------------------------|
| 1                | [20-30%]                      | [0-5%]                      |
| 2                | [30-40%]                      | [10-20%]                    |
| 3                | [20-30%]                      | [0-5%]                      |
| 4                | [20-30%]                      | [5-10%]                     |
| 5                | [20-30%]                      | [5-10%]                     |
| 6                | [20-30%]                      | [0-5%]                      |
| 7                | [10-20%]                      | [<0%]                       |
| 8                | [30-40%]                      | [10-20%]                    |
| 9                | [20-30%]                      | [0-5%]                      |
| 10               | [20-30%]                      | [0-5%]                      |

Source: CMA Report, Table R.3.

**Absolute Google margins could be higher.** Google’s take rate is only provided as a percentage of the amount received. However, Google absolute take rate would be much higher if Google collects higher bids in the first place. This is likely considering Google competitive advantages (on data, IDs etc.) and its dominant position at every level of the stack which act to bid up prices on its platform. This is another reason why the conclusion that Google’s take rate is comparable to other intermediaries is unsafe.

## 2. ESTIMATION OF GOOGLE’S WINNING MARGIN

### 2.1. Overview of analyses

The Report presents an analysis of Google’s and rivals’ winning margin (i.e. the difference between the submitted winning bid and second-highest bid).

The principle of the analysis is to assess buyers’ ability to win impressions in the Google Unified Auction at a small margin above the second price bid (or floor price if there is no other bidder in the auction). A smaller winning margin can be due to a significant informational advantage over other buyers and/or superior valuation for the impression (which stems from superior data and IDs) resulting in the buyer (e.g. Google Ads) being the only bidder exceeding the floor price.

The Report finds that Google’s average winning margin was similar to that of non-Google DSPs and concludes that overall, evidence does not indicate that Google is currently extracting significant hidden fees. However, we again have concerns that this conclusion is unsafe and could be misinterpreted as implying that Google is not exerting its market power.

Before turning to our concerns with respect to the conclusion of the Report, we recap our empirical findings based on News UK data which were cited by the Report. This analysis showed that Google Ads frequently won impressions at a moment “just above” the floor and did so more often than other bidders. These results suggested that Google Ads is able to anticipate accurately when it will be unopposed (because other bidders will not want to bid above the floor price) and, in these circumstances, it then outbids the floor only fractionally. This requires two things. First, Google Ads must have superior valuation for these impressions so it can afford to beat the floor (something which will naturally follow given Google’s data and IDs advantages). Second, Google Ads must know when it can safely bid just above the floor. This is possible due to information advantages (either in real time since Google both participates and organises the auction, or over time building sophisticated bid shading algorithms learning from bidding data that has been accumulated). The next figure summarises well our main finding.

**Figure 2: Comparison of the price paid (winning bid) and the maximum of the floor price and header bidding response – comparison between Google Ads and non-Google DSPs****[CONFIDENTIAL]****2.2. Comments on the analysis and conclusions presented in the Report**

We also have concerns regarding the winning margin analysis. These relate to: the interpretation of results based on alternative metrics; the inclusion of header bidding bids; the fact that Google Ads frequently – and more often than others – wins auctions “unopposed”; and data limitation and high volatility of results.

**The Report’s focus on median winning margins will tend to mask Google’s informational advantage.** First, regarding interpretation of results: the Report concludes that “*Google Ads had a much lower mean winning margin than all other types of bidder*”<sup>22</sup> but then the Report gives more importance to results derived from median estimates and relative difference in percentages which come out more similar.

However, it is unclear to us why median or percentages would be more appropriate to analyse the results. The fact that many bids are concentrated just above the floor is telling in itself and it not necessarily well captured with a median analysis. The relative difference (winning margin divided by the second ranked bid) does not seem appropriate either because Google Ads precisely wins at the floor more often than others, which is partly responsible for seeing a lower “second ranked bid” on those impressions. Indeed, the second ranked bid is then simply the floor in those cases. This is rather an indication that Google Ads benefits from data advantages and can bid above the floor where no one else can. We refer to our submission on UPR effects for a more complete analysis of knock-on effects on Google’s new set-up.<sup>23</sup>

In any event, our results hold even if we were to use different metrics like relative differences (in percentages) as opposed to absolute differences (in euro cents). So this would not explain entirely the divergence observed in the results.

**It is unclear whether header bidding responses has been accounted for.** It is unclear to us whether the analysis takes into account the header bidding response in determining the “second highest bid”. The Report explains that: “*This data set contains data for over [x] billion queries in the Google UA and includes data on all winning and losing bids, as well as the auction floor price. We calculate the winning margin as the winning bid minus the second ranked price in the auction (the maximum of the second highest bid and floor price).*”<sup>24</sup> This suggests that only bids *within* the Unified Auction have been considered in which case the header bidding response would be excluded which would represent a major difference with our analysis. If this were so then the “second highest bid” against which the winning bid is compared would be underestimated, since the header bidding response could have been higher than both the floor and all the bids in AdX. In this case, the actual winning margin (difference between the winning bid and header bidding response) would be lower than the winning margin estimated in the Report.

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22 Para 26. of Appendix R.

23 See “CRA analysis - Google’s conduct in ad tech and transition to UPR” submitted to the CMA on 29 May 2020.

24 Para. 26. of Appendix R.

As we know, it is usually impossible to see simultaneously in Google's files the AdX bids and the header bidding response and the floor price, due to data sharing restrictions newly introduced alongside UPR by Google. Therefore, unless Google shared "matched datasets", our concern is that the CMA may not have been in a position to do the analysis with a complete view and accounting for header bidding responses. In which case, the results would be incomplete and would potentially overstate Google's winning margin and understate Google's ability to "cherry pick" impressions and extract rents.

**The fact that Google Ads frequently wins auctions "unopposed" is given insufficient attention in Appendix R.** The Report finds, consistent with our analysis, that Google more frequently wins auctions at the floor price compared to other types of bidders. However this finding is only reported in a footnote of Appendix R and is appears to be seen as a benign explanation for why Google's average winning markets are lower:

*"Our analysis of the Google data shows that Google Ads wins a higher number of non-competitive auctions (auctions where there is only one eligible bidder above the floor price) compared to other types of bidder. For example of the impressions won by Google Ads 50%-60% were in non-competitive auctions, whereas of the impressions won by non-Google DSPs 20%-30% were in non-competitive auctions."*

We do not think that this observation should be seen as benign. Rather, the fact that Google Ads is – much more often than rivals – able to bid above the floor on those impressions is indicative that only Google has sufficient demand and data to bid high and above the set floor, while rival DSPs are likely "blind" due to insufficient data. This also reveals why Google's requiring of uniform floors is likely to be problematic, since the floor then determines the "bid to beat" in most cases for Google Ads. This is consistent with the evidence collected by the CMA on Google's documents confirming that one of the main motivations for this uniform floor imposition was to increase AdX competitiveness and Google demand's win rate.<sup>25</sup> This is because, before the recent changes, several publishers were setting higher floor prices for Google than for other sources of demand. We refer to our UPR analysis for further detail on the effects and the underlying dynamics at play.<sup>26</sup>

**Data is quite limited and obtained results are very volatile.** The only data collected by the CMA that allows to run such a winning margin analysis is again the fourth dataset, which presents several limitations as discussed in Section 1:

- It contains only one week of data;
- That week of data has been collected during the Covid-19 crisis;
- The results derived from it appear very volatile, as the Report explains.

On the latter point, the lack of robustness of the results seems to transpire from volatility of the estimated take rates of the top 10 publishers. Indeed, as mentioned above, the Report recognises that results "vary significantly across the ten large publishers".<sup>27</sup> For example, the estimated Google Ads take can be as low as **-5%** (a negative margin) for the 7<sup>th</sup> biggest publisher, whilst it is as high as **20%** for other publishers of the top 10. Such variations are unlikely to reflect actual differences across the top 10 publishers; they rather seem to confirm that the dataset used in the Report might be too limited, and potentially non-representative, to obtain robust results.

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<sup>25</sup> See para. 5.285 of the Report.

<sup>26</sup> See "CRA analysis - Google's conduct in ad tech and transition to UPR" submitted to the CMA on 29 May 2020.

<sup>27</sup> See para. 19 of Appendix R.



**Table 2: Significant variation in the estimated Google take rates for selected publishers when ads are purchased/sold through Google Ads/AdX**

| <i>Publisher</i> | <i>Google total take rate</i> | <i>Google Ads take rate</i> |
|------------------|-------------------------------|-----------------------------|
| 1                | [20-30%]                      | [0-5%]                      |
| 2                | [30-40%]                      | [10-20%]                    |
| 3                | [20-30%]                      | [0-5%]                      |
| 4                | [20-30%]                      | [5-10%]                     |
| 5                | [20-30%]                      | [5-10%]                     |
| 6                | [20-30%]                      | [0-5%]                      |
| 7                | [10-20%]                      | [<0%]                       |
| 8                | [30-40%]                      | [10-20%]                    |
| 9                | [20-30%]                      | [0-5%]                      |
| 10               | [20-30%]                      | [0-5%]                      |

Source: CMA Report, Table R.3.

To conclude, we reiterate that we agree with the vast majority of the CMA’s Final Report and welcome it as the most cogent and detailed analysis of the issues with the online advertising landscape and the one with the most concrete proposals for future intervention. However, we are concerned that the analyses presented in Appendix R are likely to be non-robust and, notwithstanding the Report’s caveating of these findings, could be misinterpreted as suggesting Google is not exerting its market power in ad intermediation to extract rents from other market participants and we would urge the CMA to consider these concerns in any further dissemination of the Report’s findings.