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# CMA working paper on gains from trustee engagement

## Response from Aon

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QAS Institute and Faculty of Actuaries Quality Assurance Scheme

Aon Empower Results®

# CMA WORKING PAPER ON GAINS FROM TRUSTEE ENGAGEMENT

# RESPONSE FROM AON

## INTRODUCTION AND SUMMARY

Aon welcomes the opportunity to respond to the CMA's Working Paper on gains from trustee engagement dated 10 May 2018 ("**WP**").

We have previously submitted a detailed paper (dated 26 April 2018) to the CMA in response to its findings in its Working Paper on trustee engagement (the "**April Response**").

In the April Response (which must be considered in conjunction with this response) we explained that it would be wrong for the CMA to draw conclusions that differing levels of engagement across pension schemes were signals of a market not working effectively. We set out why we believe this is the case and explained that we had a number of concerns about the CMA's approach.

We also have significant concerns with the approach taken by the CMA to its analysis of gains from trustee engagement in this WP. The CMA has taken an overly-simplistic approach to its analysis which is flawed in a number of material respects:

> *First*, the CMA's analysis does not reflect the fact that we encounter very high levels of customer engagement taking many different forms, and arising throughout the course of our customer relationships. The sustained pressure placed on us by our customers, together with the constant competitive threat we face from a significant number of other IC and FM providers, incentivises us to compete hard for all our customers. As such, the competitive market we face protects pension schemes by ensuring they receive competitively priced, but equally importantly, high quality advice.
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> *Second*, the CMA (consistent with its approach in the Trustee Engagement working paper) has adopted an unduly narrow approach to measuring engagement. It has focused its analysis on a very small group of engagement indicators. These are not representative of the broad nature of engagement we face from our customers, nor are these engagement indicators characteristic of the way customers typically engage in long-term professional services relationships. The CMA has therefore overlooked the forms of engagement that we experience when competing for customers, particularly the forms of engagement that challenge us to improve the quality of our service.
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> *Third*, the CMA's analysis does not reflect the complex and nuanced nature of engagement by pension schemes. The CMA has not undertaken any detailed analysis of the factors which influence the need to engage and the form it takes. Rather, the CMA seems to take a binary approach to engagement, with the implication that schemes are materially less engaged in the absence of one of CMA's indicators of measurement.

*Fourth*, the CMA's analysis is based only on IC and FM fee rates and spend, and ignores other measures of schemes outcomes, including most of the measures of outcomes identified by the CMA. Importantly, the CMA overlooks that higher prices could reflect higher returns or higher quality. This fundamental weakness of the CMA's assessment renders its analysis largely meaningless and we do not regard this as a 'reasonable approach'.

*Fifth*, the CMA's analysis is subject to a number of methodological flaws that the CMA has inadequately considered and has been too quick to discount. Because no data room or confidentiality ring has been provided we have not been able to assess the data ourselves in order to seek to reach conclusions that eliminate these flaws.

We previously set out our views on potential remedies at Section 3 of our April Response. We stated that whilst we welcome initiatives to encourage trustee engagement, we commented that a more nuanced approach is required in order to support the varying needs of schemes, to provide practical support to encourage engagement and to avoid burdening schemes with excessive costs and regulation.

We are concerned that an overly simplistic analysis should not result in the imposition of simplistic remedies to address trustee engagement. We are concerned that mandating forms of engagement will not necessarily drive the right behaviours, could result in tick-box forms of engagement, could increase pension scheme costs and may make no meaningful impact for trustees.

Thus, if the CMA is seeking to establish that some trustees are disengaged, that disengagement leads to detriment and that this outcome is sufficient to make a finding of an AEC, we expect the CMA to address fully the flaws in its analysis and for it to undertake a more robust and comprehensive review of engagement before drawing conclusions and identifying effective and proportionate remedies.

## 1. WE ARE STRONGLY INCENTIVISED TO COMPETE FOR ALL CLIENTS

***Our experience is that trustees are highly engaged and that engagement is broader than is measured by the CMA***

1.1 We fully support and agree with the notion that fully engaged customers drive competition. Our consulting approach is built with client commitment and engagement at its core.

1.2 The reality of our experience of dealing with schemes is that we face constant pressure from trustees to deliver a high-quality service at competitive rates in order to win and retain business. The advice and service that we provide, as well as the fees that we charge, are frequently tested and subject to review. Other firms beyond TPEs, such as scheme sponsors, scheme actuaries and accountants also review our services on behalf of schemes and challenge us as they see fit.

1.3 IC and FM services are professional services. Purchasing such services is not characterised with a single or one-off purchase. Rather, the relationship is a continuing one, with the ongoing provision of services. Service quality, relationship management and importantly in this sector, investment returns, are as or in many cases more important to trustees as service fees. Engagement on all these attributes occurs continually during the course of this relationship.

1.4 This means that whether a client is 'engaged' under the CMA's narrow metrics or not, we cannot be complacent with respect to either price or service. If we are not competitive on price or service a competitor will bring this to our client's attention. It is essential that we stay competitive in order to retain our customers.

1.5 We therefore strive to deliver the highest quality service and encourage our customers to measure us on service performance throughout our mandates. We also undertake regular service reviews with clients. If we do not meet the standards that trustees expect of us, or offer competitive terms, our clients will switch, or at least threaten to switch. This is well-evidenced by [✂].

1.6 In any given year, [✂].

1.7 As such, we consider that that nature of substantive customer engagement is much more than simply the three metrics identified by the CMA at paragraph 43 of the WP. On the contrary, as we explain further in Section 2 below, engagement is embedded into our ongoing client relationships. This nature of engagement and the potential gains achieved, have been wholly overlooked by the CMA. Focusing on fees achieved on the basis of limited engagement metrics does not provide any basis for the CMA to draw meaningful conclusions concerning the existence of an AEC.

***Aon's clients are more engaged than the industry average***

1.8 Even on the CMA's narrow measures, our clients are particularly well-engaged. Using the CMA's metrics:

1.8.1 [✂]% of Aon's scheme customers are externally acquired (EA) (that is, deemed automatically engaged by the CMA);

1.8.2 [✂]% are internally acquired but considered by the CMA to be engaged via another metric (IA).[1]

1.9 This means that [✂]% of Aon's schemes demonstrate a measure of 'engagement' based on the CMA's restrictive definition of engagement which, as is explained further at Section 2 below, excludes a number of features that demonstrate the sophistication of our clients and their ability and willingness to ensure our price, quality and service is competitive.[2]

1.10 This is significant. The CMA's findings in the WP must be considered in the appropriate broad context and to the extent that the CMA considers remedies are required, they must be a proportionate response focused on addressing the underlying causes of weak engagement.

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1 These values most closely match those of 'Firm 4' in Figure 11 of the WP, paragraph 141.
2 Here 'engagement' is defined according to the measures selected by the CMA at paragraph 43 of the WP.

## 2. THE CMA HAS ADOPTED AN UNDULY NARROW APPROACH TO MEASURING ENGAGEMENT

2.1 The CMA's focus on just three binary definitions of engagement is flawed. This is principally because the degree of engagement of schemes that appoint professional trustees ("**PTs**"), third party evaluators ("**TPEs**") or run tenders may in fact depend far more on other cultural or environmental factors that the CMA has not explored, as opposed to the method chosen to effect engagement in itself. For example, a scheme that chooses not to appoint a professional trustee may be just as engaged as one that does, because the existing non-professional trustees determine, quite properly, that they can continue without this step being necessary. In this section we explain the significant omissions of analysis that result from the CMA's approach.

***The CMA ignores measures of schemes' outcomes other than IC and FM prices***

2.2 Despite listing several measures of a scheme's outcome, the CMA focuses only on 'price'. In the WP, the CMA explains that there are various outcomes which include not only the price paid, but also the success of the FM provider in discounting AM fees, returns on their assets and quality of service.[3]

2.3 However, there are a number of other forms of engagement which have not been measured by the CMA which are used by schemes and trustees to apply constant pressure to achieve better deals in terms of both price and quality. We note that even with respect to hedging, which the CMA has sought to consider to an extent, the approach taken is blunt (whether or not bespoke liability hedging is used) and does not control for a range of quality factors outside of the CMA's measures of engagement that will impact on the price that a scheme would pay for this service. These include asset capacity constraints, perceived performance quality, active or passive fund, asset class mix, pricing model and the performance target.

2.4 The CMA explains that IC or FM prices are the focus "*primarily because they are measurable*"[4] meaning that the analysis ignores most of the measures of outcomes the CMA identifies and, importantly, overlooks that higher prices could reflect higher returns or higher quality. This fundamental weakness of the CMA's assessment renders its analysis largely meaningless. For example:

2.4.1 Purported "disengaged" schemes may be *engaged in reality* but may not 'engage' on the CMA's measures simply because they are satisfied with the quality of service and level of returns that they received. For example, a scheme – through being aware of its needs – may correctly identify that it needs a higher than average degree of service (and so would be willing to pay more for it). Due to the scheme's awareness, it considers that there is no need for a TPE, PT or a tender. Instead, it appoints an FM provider and monitors it closely. In that case, the CMA would treat the scheme as

[3] WP, paragraph 56.
[4] WP, paragraph 57.

disengaged and paying a higher than average fee, when in fact it is an engaged scheme obtaining good value for the higher services obtained.[5]

2.4.2 Purported "disengaged" schemes may be *engaged in reality* but take a different approach to resolving a given problem. Two identical schemes, for instance, may both be unhappy with how their investments are working and both decide to hire an FM: one hires a PT and TPE as well and gives the FM a more restricted brief as a result; the other is happy with their engagement but gives the FM a fuller role and pays more for this. The former scheme would be classed by the CMA as engaged and to pay less for FM. However, in reality, that would just reflect a difference in quality of service offered. It would ignore additional expenditure (e.g. on the TPE) made elsewhere.

***Variances in the level of engagement will always exist***

2.5 Notwithstanding the effective levels of engagement that we experience and have described above, there will inevitably always be variances in levels of trustee engagement and there will often be objective reasons for variances in engagement. We addressed this in detail in our April Response. As set out in that response, the CMA cannot conclude that such variances are signals of a market not working effectively.

2.6 In addition to the points made in that response, two additional issues are relevant to the CMA's findings in the current WP:

2.6.1 *First*, whilst the CMA has collated some evidence that tendering is a particularly effective form of engagement, the CMA has not undertaken any qualitative assessment of what constitutes effective engagement, nor conducted any analysis of the differences between broader types of engagement, the factors which influence trustees' choice of form of engagement or trustee's perceptions of the benefits of different forms of engagement. This analysis should be integral to the CMA's assessment.

2.6.2 *Second*, and as set out at paras 1.8 – 1.10 of our response to the WP on the provision of FM by IC firms, an absence of an obvious measure of engagement does not mean that a client is not engaged and is therefore being 'steered' to a bad FM deal. Our incentives to offer value for money remain as strong for clients who move 'internally' from IC to FM as they do for externally acquired FM clients.

2.7 In general terms, as existing IC clients, trustees will be well-appraised of an IC firm's capabilities in strategic and tactical asset allocation, operational due diligence, manager selection, risk management, fee negotiation and investment execution. These are core criteria in choosing an FM, just as they will have been when a scheme was selecting its IC. It is therefore natural for many trustees to

[5] This would be an example of complexity being negatively correlated with the CMA's measure of engagement. It would lead the CMA to overstate the gains from engagement. This is discussed in more detail at the Annex.

conclude that their existing IC provider (who has an established FM offering) would be best positioned to provide FM. Although such a customer would likely to be characterised by the CMA as ‘not engaged’ they would nevertheless be able, through negotiation, to achieve pricing equivalent to a typical ‘engaged’ client.

***Trustee engagement is increasing***

2.8 As shown in the WP on trustee engagement, our experience is that all measures of trustee engagement are increasing year-on-year. This includes each of the measures selected by the CMA at para 43 of the WP, as well as other recognised metrics. We expect engagement levels to continue to increase, irrespective of any remedies that the CMA may impose.

## 3. WE HAVE CONCERNS ABOUT THE CMA’S ANALYSIS

3.1 We are concerned that despite the data-focussed analysis that the CMA has undertaken as part of its work to produce this WP, the CMA has made no provision for parties to review the underlying data, or the accuracy of CMA’s analysis of it.

3.2 As the CMA is aware, following a review of data made available in connection to the CMA’s WP on asset manager recommendations, we found that the CMA had made a number of significant analytical errors. We cannot exclude that errors of a similar magnitude have been made in the course of preparing the current WP. As a result, we reserve the right to update our position in response to this WP, should further data be made publicly available.

3.3 Our concerns are heightened by a number methodological flaws that we have identified in the WP, which we set out below. We urge the CMA to consider these issues carefully before using this WP to support any conclusion as to whether there is an AEC; or the extent to which remedies may be required.

***The CMA’s FM/IC spend ratio is not meaningful***

3.4 To compare the gain from engagement when transitioning from IC to FM the CMA calculates the ratio of each scheme’s average post-transition FM spend to their average pre-transition IC spend.[6] The CMA presumes that if this ratio is lower for engaged schemes then this is a gain from engagement.

3.5 The CMA’s overall conclusion from the transition analysis is that engaged schemes pay significantly less than disengaged schemes when moving into FM with the same provider they had used for IC.[7] However, FM/IC spend ratio is a flawed measure; it cannot be used to suggest a demand-side failure.

3.6 First, the spend ratio may in fact measure the opposite of what the CMA seeks to gauge. This is best illustrated by a hypothetical example. Suppose that there are two identical schemes, A and B. Both are engaged in reality. However, scheme B is measured as “disengaged” according to the CMA’s approach, while scheme A is correctly measured as “engaged”. Scheme B obtains *lower fees* from its IC

6 WP, paragraphs 70 and 97.
7 WP, paragraph 112.

provider than scheme A. Both schemes pay the same when transitioning to FM. In this case, scheme B's success at securing lower IC fees means that its ratio of FM spend to IC spend is higher than scheme A's. So despite paying *less* than scheme A overall, scheme B is measured by the CMA to have paid *more* and to have suffered from being disengaged.[8] This perverse outcome renders the CMA approach meaningless.

3.7 Second, the measure is silent on price levels (an absolute concept) obtained by engaged and disengaged schemes when transitioning from IC to FM, despite the CMA's inferences which suggest to the contrary (see below). At best, the CMA's analysis could be used to support a finding that engaged schemes have lower FM/IC ratios than disengaged schemes (a relative concept). However, as set out above, this conclusion would be meaningless; it does not imply a demand-side failure exists.

3.8 Finally, the CMA further claims that the transition analysis indicates that engaged schemes face lower *spend increases* than disengaged schemes.[9] That inference is also incorrect. Another hypothetical example demonstrates the point. Suppose, as in the example above, that scheme B pays less than scheme A for its advisory needs. Further, suppose that scheme A's increase in spend is the *same* as scheme B's when transitioning to FM. In this case, because schemes typically spend more on FM than IC, the ratio of scheme B's FM spend to its IC spend will typically exceed that for scheme A. So scheme B will appear to have suffered *despite paying less than scheme A* and despite having had the same spend increase as scheme A.[10]

***The CMA has been unbalanced and too quick in its dismissal of the limitations it identifies with its econometric analysis***

3.9 The CMA identifies several weaknesses with its own analysis, but claims that these each result in its estimates of gains from engagement being understated. In particular, the CMA identifies issues relating to omitted variables, measurement error and endogeneity. However, the CMA has been one-sided in its approach. In fact, the direction of the bias caused by the above limitations is either not clear or unsubstantiated. This is for the following reasons:

3.9.1 *Omitted variable bias*. As mentioned above, the CMA's analysis omits a number of variables that are important determinants of the price IC and FM clients pay, including complexity (which the CMA recognises), investment returns, service quality, asset capacity constraints, whether the manager focuses on active or passive products, asset class mix and the performance target. The CMA discusses the bias resulting from complexity not being accounted for in its analysis. However, its assessment does not

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8 For example, scheme A pays 100 to its IC provider and 400 to its FM provider (so the FM:IC spend ratio is 4). Scheme B pays 95 to its IC provider and 400 to its FM provider (so the FM:IC spend ratio is 4.21).

9 WP, paragraph 6.

10 For example, scheme A pays 100 to its IC provider and 400 to its FM provider (so the FM:IC spend ratio is 4). Scheme B pays 95 to its IC provider and 395 to its FM provider (so the FM:IC spend ratio is 4.16).

demonstrate why this omission results in an underestimation of gains from engagement. The reverse could be true. Moreover, the CMA does not discuss the effects of omitting the numerous other important factors listed here.

3.9.2 *Measurement error*. While the direction of the bias caused by the measurement error in the CMA's engagement proxy can be predicted if the error is independent of the true level of engagement, this condition is not satisfied in the CMA's analysis. As a result, the direction of this bias cannot be predicted.

3.9.3 *Endogeneity resulting from simultaneity*. Assessing the direction of the bias resulting from endogeneity requires additional analysis, known as "instrumental variables", which the CMA has not undertaken.

3.10 As a result of the above, the CMA cannot presume that the preceding factors mean that its analysis understates gains from engagement. The reverse may be the case. Further explanation of the direction of these biases can be found in the Annex to this response.

***The CMA is incorrect to suggest that IA schemes pay more than EA schemes***

3.11 The CMA states that there is some evidence that switching providers when moving from IC to FM reduces prices, but no such evidence is provided in the WP.[11] In fact, the CMA WP suggests that IA schemes pay *less* than EA schemes:

3.11.1 This can be clearly seen by considering the 'engaged' schemes in in Figure 4 of the WP. Here, IA engaged schemes pay fee of approximately 12 basis points (bps) while EA engaged schemes pay over 25 bps.

3.11.2 Moreover, when considering Aon schemes only, median fees paid by EA schemes are three bps higher than that paid by IA schemes.

***Higher IC fees are not necessarily indicative of a higher degree of engagement***

*3.12* We note that the CMA's analysis of IC pricing in comparison to measures of engagement is based on average costs per hour yet it does not appear to control for the intrinsic value of service that is provided for this fee. Lower average hourly rates may simply reflect lower values of service, which in turn may not require the same degree of engagement (as much non-specialist work could be done in-house). Higher average hourly rates may reflect higher quality service (e.g. as schemes draw on, and engage with, more experienced advisors for whom the hourly rate is greater). This means that it is not possible to accurately determine any link between degree of engagement, value and price unless these other factors are controlled for.

[11] WP, paragraph 124. We note that in paragraph 89 the CMA states that EA schemes receive prices which are 14% lower than those paid by IA *disengaged* schemes. This value is not statistically significant but even if it were, it is not clear whether this instead suggests a gain from engagement rather than a gain from switching (since the gain would be larger from becoming an IA *engaged* scheme).

*3.13* Another key factor which drives price, rather than engagement, is that smaller customers will tend to be relatively more expensive to service than larger customers and this is reflected in pricing. While the CMA does control for scheme size in part by breaking its analysis down into three scheme size categories, the CMA must be cautious in seeking to identify gains from engagement in this context.

***The CMA arbitrarily drops data and applies an inconsistent approach to averaging***

3.14 The CMA states that as part of its 'data cleaning' process, it dropped the largest 5% of all values.[12] There is no clear justification for dropping these observations and no discussion of the effect doing so has on its results.

3.15 Removing the 5% of schemes paying the highest fees from the dataset considered has the potential to materially change the CMA's result. If the majority of these schemes were engaged, this can be expected to result in an overstatement of gains from engagement.

3.16 The effect of this can be expected to be greatest in the CMA's 'econometric' analyses, as these consider 'mean' averages while the 'simple comparison of averages' analyses rely on 'medians'.[13] As the CMA states, median averages are less likely to be sensitive to outliers than are means.[14]

(a) More generally, we note that the CMA bases its conclusions on medians for its simple comparison of averages and means for it econometric models. To be consistent, the CMA should therefore also consider the simple comparison of mean averages and econometric models based on medians (i.e. quantile regressions).

## 4. INAPPROPRIATE FOCUS ON THE LARGEST THREE IC/FM FIRMS

4.1 At para 19 of the WP, the CMA explains that while it has considered views from "*the whole spectrum of parties who responded to the market information request*" its review of internal documents on gains from engagement has focussed only on the largest three IC-FM providers. The CMA itself concedes in the WP that this evidence is "*somewhat limited*" in demonstrating gains from trustee engagement yet presents these narrow findings in any event.

4.2 This excessively narrow focus perpetuates broader concerns that we set out in our response to the CMA's WP on the supply of FM by IC firms (see paras 2.25 – 2.30) with respect to the harm being caused by the CMA's over-emphasis on just three firms:

4.2.1 *First*, a continued focus on evidence collected from the largest three IC-FM firms does not allow the CMA to explore adequately practices across the entire market. This raises doubts concerning the robustness of the

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12 WP, paragraph 131(f).

13 Footnote 45 of the WP explains that the CMA uses a median when comparing averages and paragraph 165 of the WP states that the CMA's econometric models uses Ordinary Least Squares (OLS), which considers correlation between mean averages.

14 Footnote 45.

investigation generally and the basis on which the CMA will make its eventual findings.

4.2.2 *Second*, the CMA's approach means that any incorrect findings that the CMA makes in this paper (especially with respect to the alleged negative consequences for schemes of not being engaged) can appear to be unfairly associated with this small group of competitors, rather than the market as a whole. This distorts public perceptions of our business practices and adversely affects Aon's reputation.

4.2.3 *Third,* this WP perpetuates an asymmetry of information published by the CMA concerning these three firms, compared to the rest of the market. For example, in this WP, third parties obtain a more detailed picture of Aon's internal processes than of those of many of our competitors (notwithstanding certain CMA redactions).

## Annex

1. As set out above, the CMA dismisses the limitations it identifies with its econometric analysis but, as a matter of econometric theory, it cannot do so. In particular, the CMA recognises that its econometric analysis suffers from issues including omitted variable bias, measurement error and endogeneity resulting from simultaneity but states that these issues all result in an underestimation of gains from engagement.

2. This annex addresses each of the weaknesses the CMA identifies in detail and explains why none of them necessarily result in an underestimation of gains from engagement. The opposite may also be the case.

<u>*Omitted variable bias*</u>

3. As the services required by a scheme become more complex, the amount that a scheme pays to a provider may increase and so it is important to capture this influence on the fee paid. However, the CMA cannot fully control for the complexity of services received by schemes[15] or many other conceivable drivers of price, as it recognises.[16]

4. The CMA recognises that complexity is an omitted variable but it expects this to be positively correlated with engagement such that any gains are understated. However, the CMA cannot make this presumption for the following reasons.

5. *First*, as explained in the main text, purported "disengaged" schemes may be *engaged in reality* but take a different approach to resolving a given problem. A confident and engaged trustee may not only be willing to obtain complex services but also skilled enough to do so *without* the use of any of the CMA's measures of engagement. As such, there would be a negative relationship between complexity and *the CMA's measure of* engagement. The CMA's approach could, in that case, overstate gains from engagement.

6. *Second,* while the direction of bias is dependent on the correlation of the omitted variable (e.g. Complexity) with engagement, it is also dependent on the relationship between complexity and other explanatory variables, as well as on the relationship between all of the included explanatory variables. The direction of these relationships are difficult to determine as this would involve the calculation of partial correlations.[17]

7. *Third*, complexity is not the only relevant factor omitted from the CMA's model and so other biases may also be present. As the CMA recognises, it does not account for returns on assets which is directly related to the 'price' paid by investors through performance fees. [18] Moreover, its model also omits service quality, asset capacity

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15 WP, paragraph 165.
16 WP, paragraph 69.
17 See, for example, page 67 of Wooldridge, "*Econometric Analysis of Cross Section and Panel Data*", Second Edition.
18 WP, paragraph 56.

constraints, whether the manager focuses on active or passive products, asset class mix and performance targets.[19]

8. In summary, without substantial further analysis, the CMA is not able to predict the direction of bias arising from omitted variable bias. It therefore has no basis to presume that by leaving out important variables in its analysis it will have understated gains from engagement.

*Measurement error*

9. The CMA has measured engagement based on the following factors: (i) the use of a formal tender; (ii) the presence of a professional trustee; or (iii) the use of a third party evaluator. However, engagement is likely to be related to other factors as well, such as the financial expertise of the schemes trustees (beyond that captured by the presence of a professional trustee), the presence of an investment sub-committee and scrutiny by other interested parties (such as the scheme sponsor, actuary or chief investment officer).

10. The CMA recognises that "*'[e]ngagement' is essentially unobservable*" and hence its proxies of engagement are imperfect; as such, there is measurement error in this variable.[20] it goes on to state that this would result in attenuation bias, understating the true effect of engagement.

11. However, the direction of attenuation bias on gains from engagement can be predicted only under a strict assumption on the type of measurement error present, which is not satisfied by the CMA's model. Specifically, the type of measurement error must be 'classical', i.e. Independent of the true level of engagement. Under 'non-classical' assumptions of measurement error the direction of the bias introduced into the model cannot be predicted.

12. The true level of a schemes' engagement can be expected to vary *continuously* (i.e. Under the CMA's framework, engagement can be thought of as a willingness and ability to access, assess and act on the information provided in order to obtain better value for money). The CMA measures this with a *binary* (i.e. Dummy) variable only allowing schemes to be either fully engaged or not engaged at all. The type of error generated by this issue is therefore not 'classical', as it is clearly not independent of the true level of engagement. Put simply, if $e_i$ is the true level of engagement of scheme $i$ and $d$ the dummy variable used by the CMA, then the measurement error is $(e_i - d)$ which is clearly not independent of $e_i$.

13. As such, the CMA has not justified (and would find it very hard to justify) its claim as regards the direction of bias resulting from measurement error.

19 WP, paragraph 56.
20 WP, paragraph 174.

*Endogeneity resulting from simultaneity*

14. As the CMA explains, to the extent that levels of engagement affect prices, high prices may also affect engagement.[21] this factor is known as 'simultaneity' or 'reverse causality' and results in the CMA's econometric models suffering from what is known as ‘endogeneity’.

15. Assessing the direction of the bias resulting from endogeneity would typically require an instrumental variables technique. The CMA has not employed this technique and so it has not provided a basis to conclude that gains from engagement are understated due to simultaneity.

[21] WP, paragraph 176.