

ANNEX 1

Response to BDO comments on Descriptive Statistics

This Annex contains PwC's response to certain comments made by BDO in relation to our response to the CC's Descriptive Statistics Working Paper (the **WP**).

1 Switches versus tender no switch

- 1.1 BDO note that in our analysis of descriptive statistics, tenders with no switch lead to small price increases (median 3%) whereas direct switches lead to significant price reductions. BDO then suggest that this shows that companies therefore need to switch rather than simply tender in order to obtain benefits.
- 1.2 This position is flawed:
- (a) The fundamental competitive dynamic is the same irrespective of whether the company chooses to switch as a result of a tender.
 - (b) Companies which actually switch in such situations are more likely to have been particularly dissatisfied with their auditor prior to a tender, meaning that they have greater scope for improvement with a different audit firm.
 - (c) However, as we made clear in our response to the WP, descriptive statistics can be highly misleading and econometric analysis is far preferable.
 - (d) We have carried out an econometric analysis of audit prices. Our analysis, which is endorsed by Professor Andrew Chesher of UCL, shows that companies which tender or switch obtain a short term price reduction of 9% as compared with companies which choose not to tender or switch.
 - (e) If these variables (i.e. direct switch and tender no switch) were treated separately in such econometric analysis, it would show that companies which make a direct decision to switch obtain a price reduction of 10% (as compared with not tendering or switching), whereas companies which tender but do not switch obtain a price reduction of 6% (as compared with not tendering or switching). This confirms (a) and (b), although it is worth noting that the 10% and 6% are not statistically different from each other.

2 Potential sensitivity to outliers

- 2.1 BDO argue that if "obvious outliers" are removed, then the price reduction upon a switch is much greater than our analysis suggests. BDO then select three "outliers" (Pearl, ITV, and iSOFT) which may have had significant scope changes. These were the three largest observed price increases (all of which are greater than 100%) associated with a direct switch.

2.2 Our approach was to:

- (a) Not exclude any "outliers". No dataset of this nature will ever be perfect but considerable efforts have been made to ensure its accuracy. Excluding so-called outliers (which could involve price reductions as well as price increases) is subjective and could remove much of the richness of the data. We disagree with excluding from the analysis companies whose situations are somehow unusual.
- (b) Use the IDS. It would not have been appropriate for us to make unilateral changes to a heavily researched dataset which was compiled so that all parties to the investigation could carry out analysis using an agreed baseline.
- (c) Use medians (rather than means) because of how sensitive means can be to highly unusual observations.

2.3 Within this framework, it is worth noting that removing the three observations cited by BDO would not make any substantial difference to our analysis of descriptive statistics. More specifically, the median price reduction for:

- (a) Direct switches changes from -15% to -16%.
- (b) Direct switches and tender no switch changes from -6% to -8%.

2.4 With respect to BDO's specific suggested omissions:

- (a) Pearl acquired Abbey National and was not itself acquired, so our classification is correct. We note that in the set of non-tenderers and switchers there are also companies that acquired other businesses and hence had an increase in audit fee.
- (b) For ITV, BDO has correctly identified an error in the IDS. The statutory accounts do indeed show an increase of 50% (as compared to 196% in the IDS).

3 Andersen switches

3.1 BDO suggest that Andersen switches led to price increases, and that this was the result of market concentration.

3.2 The descriptive statistics are misleading. The demise of Arthur Andersen was highly unusual, so we excluded Andersen switches from our econometric analysis. However, had we included them it would have showed that Andersen switches were associated with price reductions.

4 Thomas Cook

4.1 BDO say that the Thomas Cook observation of a greater than 1000% price increase in the IDS is an error. This is correct but we chose to use the IDS consistently. Moreover, excluding Thomas Cook does not affect the median price change by more than 1 percentage point.

5 Switches from large to mid-tier firms

- 5.1 BDO claim that price changes brought about by switches from large audit firms to mid-tier firms do not then unwind (through prices returning to pre-switch levels over time).
- 5.2 It is not clear what is the basis for BDO's analysis but it should be treated with extreme caution. There are a very small number of such switches in the IDS, and any analysis would have to control for scope which requires econometric analysis. We considered analysing whether there is a large firm/mid-tier firm price differential in our econometrics and found that it was not possible to analyse this in a robust way.