

Appendix K: Analysis of Dignity Price Trials and Quantitative Submission by Co-op

1. This appendix presents our analysis of Dignity's price trials and quantitative submissions by Co-op.

Analysis of Dignity Price Trials

2. This appendix first uses data on volumes and revenues of different funeral types within Dignity's trial to assess how outcomes (share of supply and average revenue per funeral (ARF)) changed when the prices of Simple and Standard funerals changed, and new funeral types were introduced. Dignity's ongoing trial started in April 2018 (following a change to its price of Simple funerals in January 2018)¹ and involved changes to the prices of its Standard funerals, and the introduction of new funeral packages.²
3. In the results of the analysis, we note the following.
 - (a) Dignity's pricing trial's characteristics, for example its scale, have enabled us to test impacts in a way that cannot be reproduced for other funeral directors. As such, we only analyse Dignity's pricing trial data in this appendix.
 - (b) Dignity is not present in all areas of the UK, meaning there are some funeral customers it is unable to serve. This means the aggregated shares of supply calculations are underestimated, as the number of deaths for which Dignity competes across the areas where it is present is less than the total number of deaths being used to calculate the aggregated shares of supply. We noted in the Market Study that [✂]. This high level of population coverage reduces the likelihood such an underestimation would be significant (although it may differ across regions).
 - (c) We only look at changes in the share of supply of one firm. It may therefore not be clear where changes in volumes have originated from (that is, if they come from another funeral director, or from within the same funeral director).
 - (d) We have combined two datasets in our analysis – data initially analysed and provided by LEK (which undertook analysis on behalf of Dignity until

¹ <https://www.dignityplc.co.uk/investors/news/press-releases/2018-01-19/1077/pre-close-trading-update-and-market-positioning/>

² <https://www.dignityplc.co.uk/investors/news/press-releases/2018-05-14/1306/first-quarter-results/>.

November 2018) and data collected directly from Dignity (from October 2018 to July 2019). There appear to be discrepancies between these datasets which limit the extent to which we can compare changes over the entire time period that we have analysed.

- (e) The time period between changes in prices before and during the trial, for which we have data, is short (for example, there were approximately two months between the price reduction of Simple funerals and the trial starting), such that longer-term changes in shares of supply may not be evident. Longer term trends are considered in other analyses.
 - (f) This analysis does not control for any other changes which occurred within this period (for example changes made by other funeral directors to their prices or propositions). This analysis can therefore only consider correlations between the changes in price and proposition and changes in ARF and shares of supply.
4. This appendix includes:
- (a) first, the details of the price trial are summarised;
 - (b) second, the data used in this analysis are described;
 - (c) third, the results from this analysis are reported; and
 - (d) fourth, we briefly summarise the findings.

Dignity's price trial

5. Dignity started a pricing trial from April 2018 'to understand how wider changes to our prices and range affect our ability to gain volume and reduce market share erosion,' and which is ongoing. Initially the trial tested the effect of three possible scenarios, which were: [✂].
6. Dignity's branches in different regions were allocated to a 'cell' which trialled one of the scenarios above, or to a control cell where none of these changes was implemented [✂].

Figure 1: Details of Dignity's price trials

[✂]

7. [✂].

8. During the trial, Dignity modified the scenarios tested, namely it:
- (a) [REDACTED]³ [REDACTED]⁴;
 - (b) [REDACTED]; and
 - (c) [REDACTED].
9. This trial overlapped with the reduction in Dignity's Simple funeral price by approximately £700 in January 2018 [REDACTED],⁵ such that we can examine Dignity's outcomes in each cell after the change in Simple funerals price but before the scenario testing began.

Data

10. We received data on the results of the trial from Dignity and LEK, the latter being a consultancy which analysed the results of the trial for Dignity until November 2018. From these datasets we extracted volumes and revenues (excluding disbursements) for each funeral package in the trial (Standard, Simple, Limited, Tailored) for each region on a weekly basis. We note that there are discrepancies between these datasets which limit the extent to which we can compare changes over the entire time period of data we have. Where we have data from the same time period from both Dignity and LEK, we use the data from Dignity.
11. We have adapted LEK's approach and have calculated shares of supply as a proportion of at-need funerals. The shares are calculated by dividing the number of funerals carried out by Dignity branches in each test cell by the estimated at-need number of deaths in each test cell.⁶ An estimated number of deaths in each test cell is used as Dignity's regions do not fully align to the Office for National Statistics' (ONS) regions, the areas by which the death data on a weekly basis is provided.⁷

³ [REDACTED].

⁴ [REDACTED].

⁵ Dignity plc. (2018) *Pre-close Trading Update and Market Positioning* [Press release]. 19 January. Retrieved from <https://www.dignityplc.co.uk/> (Accessed: 04/02/2020).

⁶ This is estimated using data from the [Funeral Planning Authority](#), England & Wales deaths sourced from [ONS](#); Northern Ireland deaths from [NISRA](#); Scottish deaths from [NRS](#). The estimated proportion of pre-paid funerals is 17% in 2019, 16.0% in 2018, and 14.8% in 2017.

⁷ For this analysis, we have lagged the deaths by two weeks – the approach taken by LEK. This is because the UK death data is recorded at the time at which the death is registered (registration takes place within five days of the death). Registration of the death must take place before a burial or cremation takes place. Funeral directors record their revenues and volumes when the funeral had taken place, which occurs at some point after the registration of the death. Therefore, the UK death data is lagged to more accurately reflect total shares of supply. A sensitivity test tested the lagging of death data. When compared to a 1-week lag, a 2-week lag changed the total number of deaths per week by an average of 0.16% and introducing a 4-week lag changed the total number

12. For this analysis, shares of supply of Standard, Simple, Limited and Tailored funerals are reported, and Dignity's overall share of supply is calculated as the sum of these. However, we note that this overall share excludes other funeral packages not included in the trial, for example: pre-paid, child, contract and direct cremations (known as 'Simplicity'). In addition, not all Dignity branches were part of the trial.⁸ Finally, although Dignity has branches in a large proportion of the UK, they are not present everywhere.⁹ As a result, the number of deaths for which Dignity competes is less than the total number of deaths in each cell.¹⁰ We continue to use LEK's approach as it is the most appropriate for the data available. As a result of these factors, these product by product and overall shares of supply will underestimate the actual shares of supply of at-need funerals.
13. This analysis does not control for any other changes which occurred within this period (for example changes made by other funeral directors to their prices or propositions). This analysis can therefore only consider correlations between the changes in price and proposition and changes in ARF and shares of supply.¹¹

Results

14. This section details the results of the analysis of Dignity's price trials. Firstly, figures showing changes in Dignity's share of supply and ARF (outcomes) over time are presented. These should be used for reference in the remainder of this appendix. The first set of charts show Dignity's share of supply in each of the four cells; the second set of charts show Dignity's ARF for different funeral types in each cell. Each of the major changes relevant to our analysis is illustrated by the vertical lines: the reduction in Simple price (line 1); the start of the trial (line 2); the change in data source used in the analysis (line 3); the introduction of Tailored (line 4); and the withdrawal of Limited (line 5). The vertical axis should be read across from the charts on the left to the

of deaths per week by 0.2%. These results are therefore not sensitive to the choice of how long to lag the UK death data, so for consistency with LEK's approach, the death data is lagged by two weeks.

⁸ [REDACTED] branches were excluded from the trial [REDACTED]. These branches are not included in the analysis in this appendix, and therefore the share of supply estimates may be underestimated within this appendix.

⁹ Therefore, the total number of deaths in each region is only an approximation for the number of deaths for which Dignity competes. This is because Dignity may not be present in some areas of each cell (and therefore cannot compete for customers in those areas). Dignity highlighted it does not cover all regions equally and so the underestimation of share of supply will be uneven. Additionally, a number of funerals will not be handled by funeral directors and may instead be handled by religious groups or organised by relatives of the deceased, and therefore further reduce the number of deaths for which Dignity competes. Further, as submitted by Dignity, Dignity does not compete for all deaths in the areas covered. [REDACTED].

¹⁰ [REDACTED]. This high level of population coverage suggests the underestimation in share arising from this particular issue is likely to be low.

¹¹ Dignity submitted that the limitations suggesting underestimation of changes in share of supply means finding evidence of changes suggest there was a strong customer response. We have noted that the changes observed may be underestimated, although we cannot tell by how much. However, compared to the quantum of price changes (particularly with regard to Simple prices) they still appear small.

charts on the right. The horizontal axis marks the start and mid-point of each calendar year.

15. Following the charts, the changes in outcomes within the relevant cells are described under the themes set out below.

(a) The interaction between Simple and Standard funerals: [✂]

(b) The interaction between Limited and Standard funerals: [✂]

16. [✂].

Figure 2: Charts of share of supply of trial funeral packages by cell



Figure 3: Charts of average revenue per funeral for trial funeral packages by cell



Interaction between Simple and Standard funerals

17. To assess the interaction between Simple and Standard funerals, this section reviews the changes in Dignity's outcomes across all cells after the price of Simple funerals was reduced, but before the price trial began, and during the price trial in the Control cell and Cell 3.

All cells – pre-trial reduction in the price of Simple funerals

18. The changes in outcomes across all cells following the reduction in the price of Simple funerals but before the price trial began are shown in Figures 2 and 3 in the area between the vertical lines 1 and 2 on the charts.¹² The charts show (see footnotes for example figures from Cell 1):
- (a) the share of supply of Simple funerals [X],¹³ though with some variation over the period, [X];¹⁴
 - (b) Simple funerals ARF initially [X];¹⁵ and
 - (c) the ARF of Standard funerals [X].¹⁶
19. Over this period Dignity's overall share of supply [X] by around [X] percentage points (pp).¹⁷

Control cell – during the price trial, where no treatments were applied

20. During the price trial (shown in the area from vertical lines 2 and 3 in the charts), the overall, Standard and Simple funerals shares of supply [X]. The average shares of supply of Standard and Simple funerals over this period were approximately [X]% and [X]% respectively.
21. Over the same period, the ARFs in the Control cell [X], with the Simple ARF for the period averaging around £[X] and the Standard ARF averaging around £[X] over the period.

¹² Note, the time period between the price reduction of Simple funerals and the start of the trials was approximately 2 months.

¹³ For example, in Cell 1, Simple funerals 4-week average market share [X] (before the price trial began) and Standard funerals market share [X]%, though with some variation over the period.

¹⁴ Note, there is a large spike in Dignity's overall share of supply before the price reduction of Simple funerals, this appears to be a seasonal trend over the Christmas period.

¹⁵ For example, in Cell 1, following [X], Simple funerals ARF is £[X] over the period.

¹⁶ For example, in Cell 1, Standard funerals ARF is approximately £[X] over the period.

¹⁷ Note, due to data volatility in the volume of Standard funerals, this pp calculation is made by comparing the average shares of supply across all cells four weeks after the price reduction of Simple funerals and four weeks prior to the start of the price trial.

22. Starting at line 4, we see Dignity's outcomes after having introduced Tailored funerals on Dignity's outcomes.¹⁸ From Figures 2 and 3, the changes seen are:
- (a) Tailored funerals broadly [REDACTED];¹⁹
 - (b) the ARF of Tailored funerals is approximately £[REDACTED] the ARF of Standard funerals before the Tailored funeral package was introduced;^{20, 21} and
 - (c) ARF of Simple funerals [REDACTED].
23. Note that after the introduction of the Tailored funeral package, Dignity's overall and Simple funerals average shares of supply are [REDACTED] respectively.²² However, these [REDACTED] may be due to the change in data source (at line 3), rather than a change in purchasing decisions.

Cell 3 – [REDACTED]

24. Following the [REDACTED] in Cell 3 (shown in the area from vertical line 2 to 3, due to the change in data source), Figures 2 and 3 show:
- (a) the share of supply of Simple funerals [REDACTED];
 - (b) the average share of supply of Standard funerals [REDACTED], when compared to Standard funerals average share of supply between lines 1 to 2, and as such Dignity's overall share of supply [REDACTED];
 - (c) after the initial fall in Standard funerals ARF, [REDACTED] for the period; and
 - (d) Simple's ARF [REDACTED] for the period.

Interaction between Limited and Standard funerals

25. As a sensitivity, this section reviews the changes in Dignity's outcomes in Cell 1 during the price trial, [REDACTED].

¹⁸ [REDACTED]. [REDACTED] we are comparing the new Tailored package in isolation to the Standard funeral [REDACTED] to understand what those purchasing Tailored funerals are paying. We note the remaining Standard funerals after Tailored was introduced are unlikely to have a stable volume/revenue relationship [REDACTED].

¹⁹ Note, as the Tailored funeral package was not introduced in [REDACTED] and in [REDACTED], we still see Standard funerals in the data following the introduction of Tailored funerals. Additionally, [REDACTED]. We note that this [REDACTED] is unlikely to affect the results materially as the recorded Standard funerals [REDACTED].

²⁰ Note, the Tailored funerals ARF used in this calculation excludes the first three weeks following the introduction of the Tailored funeral package due to [REDACTED].

²¹ Note, the remaining Standard funerals ARF, following the introduction of the Tailored funeral package, is £[REDACTED]. However, [REDACTED] over this period, so this is less likely to be reflecting a stable volume/revenue relationship.

²² To the extent this represents an actual change in shares of supply rather than a data issue, this result may be counterintuitive, as the price of Simple was [REDACTED] and the ARF of Tailored was [REDACTED], which we would expect to have a positive effect on share of supply.

Cell 1 - [REDACTED]

26. Following [REDACTED] in Cell 1, shown between vertical lines 2 to 3 (due to the change in data source), Figures 2 and 3 show:
- (a) the average share of supply of Limited funerals is [REDACTED]%, whilst the overall share of supply [REDACTED];
 - (b) Standard funerals average share of supply [REDACTED] when compared to its average share of supply between lines 1 to 2;
 - (c) Simple funerals average share of supply [REDACTED] when compared to its average share of supply between lines 1 to 2; and
 - (d) the ARFs of Simple, Standard and Limited funerals [REDACTED].
27. Between vertical lines 3 and 5, capturing the period from the change in data source to the [REDACTED], Figures 2 and 3 show:
- (a) the overall share of supply [REDACTED];²³
 - (b) Standard funerals 4-week average share of supply [REDACTED], whilst Simple funerals 4-week average share of supply [REDACTED]; and
 - (c) the ARFs of Limited and Simple funerals [REDACTED], whilst there is [REDACTED] in Standard funerals ARF.

Summary

28. This section has analysed the take-up of different funeral options and ARF following changes in price and product range within Dignity's price trial. This analysis does not control for any other changes which occurred within this period (for example changes made by other funeral directors to their prices or propositions). This analysis can therefore only consider correlations between the changes in price and proposition and changes in ARF and shares of supply.
29. On the basis of our analysis of the interaction between Simple and Standard funerals in the relevant trial cells, the changes in Dignity's shares of supply across the trial cells suggest that [REDACTED].
30. In particular, looking at the substantial pre-trial reduction in the price of Simple funerals across all cells, we note the following.

²³ Note, this average includes the volatility in share of supply over the Christmas period.

- (a) The changes in shares of supply suggest that there was [redacted] between Simple and Standard funerals, as the [redacted].
 - (b) The ARFs of Standard and Simple funerals [redacted].²⁴
31. Further, the results in Cell 3 after the [redacted], suggest that there was [redacted] between Simple and Standard funerals, as the share of Simple funerals [redacted].
32. On the basis of our analysis of the interaction between Limited and Standard funerals in the relevant trial cell (that is, Cell 1) suggests the following.
- (a) The presence of the Limited funeral package had [redacted] effect on the take up of Standard funerals than of Simple funerals. This is shown by [redacted].²⁵
 - (b) There appears to be [redacted] between Limited and Standard funerals than between Simple and Standard funerals. This can be seen when comparing [redacted]²⁶ [redacted].²⁷ We also note that the [redacted], while [redacted], which may also indicate that [redacted] had a larger effect on Standard funeral take-up.

Analysis of Quantitative Submissions by Co-op

33. This section summarises the quantitative analysis submitted by Co-op to evidence the constraint imposed on Standard funerals by Simple funerals.
- (a) It first summarises the evidence submitted by Co-op regarding the relationship between the take-up of Simple funerals and price differences between funeral packages. It then uses branch-level data provided by Co-op to analyse whether there is evidence of a positive correlation between the take-up of Simple funerals and the listed price of Standard funerals, and summarises some of the caveats of this methodology.
 - (b) It then summarises the econometric analysis submitted by Co-op, which seeks to evidence the substitutability between Simple funerals and other types of funerals. It also measures the importance of transparency as a driver of customer choice in the funerals industry.

²⁴ [redacted].

²⁵ Note, when looking at the changes in shares of supply in percentage terms, the [redacted].

²⁶ [redacted].

²⁷ [redacted].

Submission regarding relationship between the take-up of Simple funerals and price differences between funeral packages by Co-op

34. Co-op submitted that its Simple funeral acts as a constraint on the other types of funerals it provides, and that there is substitutability between its Classic/Traditional funerals and Simple funerals. As evidence of this, Co-op submitted evidence which shows that in its branches, the take-up of Simple funerals is greater when there is a greater differential between the price of its Simple and Classic/Traditional funerals.
35. Co-op stated that it is a case study for how consumers will switch between Standard and Simple funerals in response to price differentials when funeral packages are presented clearly alongside each other and price information is transparent. It submitted that it is not necessarily informative to extend this analysis to other funeral directors, as they may make it difficult for customers to compare Simple funerals with other funeral packages on offer. As evidence of this, it showed that it experienced an increase in Simple funeral sales following the national rollout of its Funeral Choices brochure, which sets out pricing and product information and enables consumers to compare funeral packages better. Co-op submitted that if Dignity's and Funeral Partners' version of the Simple funeral impose certain restrictions or otherwise lack features that are likely to be valuable to consumers, these would also affect the level of substitutability between these packages and other funeral propositions. In this analysis, we focus on Co-op.
36. Co-op's Simple funerals have a single national price throughout England, while for the Classic/Traditional funerals each of Co-op's branches is assigned to price bands primarily reflective of the differing costs to service funerals across the country. The price of its Traditional funeral varied between £2,895 and £3,405 across [redacted] price bands. Therefore, the branches in each of these bands have a different price differential between Standard and Simple funeral packages. Branches in band [redacted] (which Co-op stated were the lowest cost to serve areas) have the smallest price differential, while branches in band [redacted] (the highest cost to serve areas) have the largest price differential.
37. Figures 4 and 5, submitted by Co-op, shows the average percentage of Simple funerals in the funeral mix in the branches in each of its [redacted] price bands. Figure 4 shows this aggregated between 2016 to 2018.

Figure 4: Submission by Co-op (2016 – 2018 aggregated)

[redacted]

38. Figure 4 shows that using the data for 2016 to 2018, there is a positive correlation between the price band (and hence the price differential between Standard and Simple funerals) and the percentage of Simple funerals. Co-op has submitted that this indicates that there is substitutability between Standard funerals and Simple funerals.
39. Figure 5 shows this disaggregated into periods based on the timing of price changes and/or the reallocation of homes to different price bands. It submits that this shows the correlation between price bands and take-up of Simple funerals is consistently positive in the majority of the period under consideration.²⁸

Figure 5: Uptake rate of Simple funerals in Co-op branches in the United Kingdom (%) (Split into four time periods)

[✂]

40. Figure 5 shows that when the relationship between the price band and the percentage of Simple funerals is disaggregated into the chosen time periods, there is mixed evidence of a positive correlation, with some periods showing distinct falls in the proportion of Simple funerals as the price band increases [✂].
41. Co-op further submitted company-level data that showed that its re-launch of the Simple funeral in 2016 was accompanied by an increase in the uptake of the Simple funeral (growing from approximately [5-10%] [✂]% of Co-op's at-need funerals at the end of 2016 to approximately [10-20%] [✂]% at the end of 2018). It submits that the increase in the uptake of Simple funerals indicates high substitutability from the demand-side between the re-launched Simple funeral proposition and other Co-op propositions.
42. Co-op also submits that the uptake was particularly pronounced in Scotland (+[✂]%), where the rollout of Funeral Choices was accompanied by a price reduction down to £1,675. This finding is consistent with consumers distinctly responding to changes in relative prices of Co-op propositions (in addition to sales practice and non-price elements).²⁹

²⁸ Co-op: Response to PDR, paragraph 4.30 (a).

²⁹ Co-op: Response to PDR, paragraph 4.29 and Co-op (2020), 'Response to Working Paper on take up of simple funerals', para. 2.5

Our Analysis

43. We received branch-level data from Co-op. For each of its branches in the UK, we received data on the price band, and the number, revenue and disbursements of all its funerals for 2018. Each of its branches are placed into one of [§] price bands, which determines the price of its Standard funeral.³⁰
44. This section sets out the results of the quantitative analysis.
- (a) First, it summarises the take-up of Standard and Simple funerals.
- (b) Second, it considers the correlation between the listed price of Standard funerals and the take-up of Simple funerals for Co-op for 2018.
- (c) Third, it sets out a number of caveats with this methodology.

Take-up of Standard and Simple funerals

45. Table 1 presents summary statistics on the number of Simple and at-need funerals conducted by Co-op. For comparison purposes Dignity and Funeral Partners are also included.

Table 1: Number of Simple and at-need funerals per branch (2018)

Firm	Simple Funerals				All At-Need Funerals			
	Mean	Median	Min	Max	Mean	Median	Min	Max
Co-op	[§]	[§]	[§]	[§]	[§]	[§]	[§]	[§]
Dignity	[§]	[§]	[§]	[§]	[§]	[§]	[§]	[§]
Funeral Partners	[§]	[§]	[§]	[§]	[§]	[§]	[§]	[§]

Notes:

- (1) Data is for the calendar year 2018 and includes all branches operating throughout the calendar year.
- (2) Only includes branches which sold at least one Simple funeral in 2018. [§] of Co-op's branches did not (representing [§]% of branches), [§] of Dignity's branches ([§]%) did not and [§] of Funeral Partner's ([§]%) did not. This also excludes branches where the Standard ARF is less than the Simple ARF, and those that made no Standard sales.
- (3) "All At-Need Funerals" includes Standard, Simple, basic, essential, limited and direct cremations but excludes children, pre-paid funerals, repatriations (when separately identified) and contract/environmental funerals. "Simple" funerals include Basic and Essential funerals for Funeral Partners.

46. This shows that for Co-op, the average number of Simple funerals sold per branch in 2018 was [§], which is [§] Dignity and Funeral Partners. In the context of all at-need funerals sold, Simple funerals represented [20-30%] of funerals sold per branch, compared to [10-20%] and [10-20%] for Dignity and Funeral Partners. Across all three funeral directors there are some outliers.³¹

³⁰ The benefit of using the listed price is that the listed price reflects the initial price of the package which consumers are presented with, which would be the first piece of information they have on the cost of each of the packages.

³¹ There were [§] Co-op and [§] Dignity branches where all of the at-need funerals sold were Simple (ie 100% Simple), and these all sold [§] or fewer funerals in 2018. There were [§] Co-op branches and [§] Dignity branches where the proportion of at-need funerals which were Simple were above [§] in 2018.

When all three firms are combined, approximately [20 to 30%] of all at-need funerals sold in 2018 are Simple funerals.

*Correlation between listed Standard price and Simple take-up and caveats*³²

47. Using Co-op data, we have replicated Co-op's analysis as shown in Figure 4 (which relates to 2016-2018) but only for branches in 2018. Figure 6 shows the correlation between each branch's price band and the take-up of Simple funerals.

Figure 6: Average percentage of Simple funerals for branches in different bands (2018) (English branches only)

[§]

48. As shown in Figure 6, there is no clear positive correlation between Co-op's pricing band and the proportion of Simple funerals when considering 2018. [§].
49. Co-op submitted that we should not focus on 2018. It submitted that it is more informative to analyse data when it is disaggregated into time periods which correspond to price changes, which it included in its submission shown in Figure 5. This showed that there is mixed evidence of a positive correlation, with some periods showing distinct falls in the proportion of Simple funerals as the price band increases. For example, in January to December 2016, the proportion of Simple funerals [§]. We have not been able to recreate this analysis due to not being able to collect branch-level disaggregated data across different time periods from Co-op.
50. We believe that there are a number of considerations that must be taken into account when interpreting this evidence, such that the weight that can be put on this evidence is limited.
- (a) In both Figure 4 and Figure 5, the positive correlation is driven to a large extent by the two extremes of the distribution (i.e. the highest and lowest price bands). [§].³³
- (b) The differences in prices between bands [§] are in some cases not significant (the differences are £65, £85, £40 between September to

³² This also includes our assessment of responses received from funeral directors on this analysis.

³³ Due to the low sample sizes at the extremes of the distributions, we do not agree with Co-op's argument that we should put more weight on the positive correlation identified between the extremes of the distribution that display the highest price differential. There is no clear relationship between the price bands and the proportion of Simple funerals even for these extremes: in the period [§], the proportion of funerals which were Simple in Band [§] were higher than those in Band [§] ([§]% compared to [§]%). [Co-op: Response to PDR](#), paragraph 4.30 (b)).

December 2018) which means that we can only draw limited conclusions about the resulting differences in the take-up of Simple funerals. It is unlikely that price differences are the sole driver of the differences in the take-up of Simple funerals.

- (c) Co-op's analysis only shows customers switching within its own branches, and does not provide evidence on the propensity to switch between funeral directors. This would also be evidence of customers switching from Standard to Simple funerals. This implies that the analysis may be underestimating the extent to which price differences are correlated with customer switching.³⁴
 - (d) Co-op's submission does not provide evidence about the form of customer switching which would most demonstrate evidence of a competitive constraint, which would be when customers switch from the Co-op's Standard funeral to a different firm's Simple funeral.
 - (e) This analysis does not account for the initial price difference between Standard and Simple funerals set by a branch (eg in response to existing customer attitudes). The effect of this is that differences in prices between Standard and Simple funerals may be driven by factors which are idiosyncratic to the location of the funeral director branches, and therefore the difference in prices would not lead to customer substitution between Standard and Simple funerals.
 - (f) There are a number of changes which occur in the market throughout the period (eg Dignity's price trials, and the long-term decline in Co-op's and Dignity's market share), which are not reflected in this data. These factors are likely to also influence the take-up of Simple funerals.
51. Co-op submitted company-level data that showed that its re-launch of the Simple funeral in 2016; rollout of Funeral Choices; and its price reduction in Scotland down to £1,675 was accompanied by an increase in the uptake of the Simple funeral, which it stated was evidence that customers respond to changes in relative features of different funeral propositions (considering both price and non-price elements). However, given its overall loss in market share it is not clear to what extent this increase in the proportion of Simple funerals demonstrates customers switching from Standard to Simple or whether Co-op was better able to retain Simple customers than Standard customers.
52. We also analysed the correlation between the differences in Standard and Simple ARF and the take-up of Simple funerals within different branches. We

³⁴ Acknowledged by Co-op in [Co-op: Response to PDR](#), paragraph 4.30 (c).

found that across Co-op, Dignity and Funeral Partners there was no significant correlation between the two. We also analysed the correlation between the Standard ARF and the take-up of Simple funerals within different branches, and found no significant correlation. Co-op submitted that we should not use ARF (excluding disbursements) but focus on listed price of funeral packages, as the ARF also includes the money spent by customers on the subsequent choice of add-ons.³⁵ We believe that ARF and listed prices are two ways of analysing this and that there is value in analysing the ARF, but acknowledge that using the ARF has a number of limitations and consider that more weight put on the analysis of the listed price above.

53. [redacted] suggested that we analyse the change in the branch-level take-up of Simple funerals over time, which would account for some of the limitations identified above. However, this analysis will have other drawbacks such as the fact that other market conditions are likely to change over time, and that funeral homes are likely to make gradual changes in prices which would make it difficult to isolate the effect of these changes on funeral volumes. We therefore believe that the additional insight from this analysis would be limited, and we therefore have not undertaken it.
54. Dignity submitted that that its pricing trials found that [redacted]. It submitted that therefore, our analysis should take into account [redacted]. This section specifically focuses on the substitutability between Standard and Simple funerals for Co-op, and the analysis of [redacted] are outside its scope. We have analysed Dignity's pricing trials earlier in this appendix.

Econometric Analysis Submitted by Co-op

Co-op's Submission

55. Co-op submitted an econometric analysis that aims to understand the effect on its funeral mix of (i) changes in the relative price of Standard and Simple funerals at each of its branches (ii) the introduction of direct cremation in its branches and (iii) increased transparency in the way that funerals were offered to its customers.³⁶ Co-op finds that its baseline model:

(a) implies that a £[redacted] increase in the price of Standard funerals is associated with a one percentage point shift in Co-op's mix of funerals

³⁵ Co-op: [Response to PDR](#), paragraph 4.30 (d).

³⁶ It does this using a monthly dataset of 1,098 funeral homes across the period 2016 to 2018. It used a 'fixed effects' model, which allowed it to estimate the average effect of changes in price and funeral offering by exploiting the variation within funeral homes over time. Using this technique enabled it to control for factors which are constant over time, for example local customer demographics.

from Standard to Simple (or a [%] increase in the sales of Simple funerals). It submits that this underestimates the true effect of an increase in relative prices;³⁷

- (b) the introduction of Direct Cremation is associated with a [%] reduction in the share of Simple in Co-op's funeral mix. This effect can be seen in the short period after the product was launched but before its inclusion in the Funeral Choices brochure; and
 - (c) the introduction of the Funeral Choices brochure is associated with a [%] increase in the take-up of Simple funerals in Co-op's funeral mix.
56. Co-op conducts some robustness tests to understand the robustness of its baseline model. It finds that there are different effects of an increase in Standard prices and a decrease in Simple prices, despite the fact that these lead to the same change in the Standard to Simple price ratio. It concludes that this means that further caution should be taken in interpreting the likely effect of a further increase in the Standard price.
57. Co-op cautions that several of the variables move together to a substantial degree. This can be seen in Figure 7 below, which shows that significant changes in the price ratio between Standard and Simple funerals were closely matched with other 'events'. Therefore, it warns against focusing on the estimated magnitude of these effects and instead interpreting the results directionally.

Figure 7: Co-op's analysis of Share of Simple Funerals and Standard to Simple price ratio over time

[%]

58. It also notes some other caveats to its baseline model, including that using the Simple share in the mix as the dependent variable does not allow the analysis to disentangle the extent to which changes in the Simple share the result of (i) customers switching from Co-op's Standard to Simple funeral package; and (ii) customers switching from Co-op's Standard package to another funeral director, and thus reducing the volume of Standard funerals.³⁸ It also submits that other providers' versions of the Simple funerals may be more restrictive, and therefore less substitutable as a result.

³⁷ It would also expect customers to move to other funeral directors.

³⁸ We note that changes in the share of Simple funerals may also be driven by substitution to Co-op's Simple funerals from other funeral directors.

Our assessment

59. We accept some aspects of the directional conclusions of this analysis. In particular, this and other evidence we have assessed suggests that all else equal, if a funeral director improved its transparency over the range of funeral types offered or increased its Standard to Simple price ratio, this may increase the take-up of Simple funerals for that funeral director. Further, if a funeral director began offering direct cremation funerals we would expect its sales of Simple funerals to fall. We consider that in order to assess whether Simple funerals and direct cremations impose a significant competitive constraint on Standard funerals, we would expect there to be evidence of significant switching away from Standard to Simple funerals and direct cremations in response to relative price changes and of a subsequent price response in Standard funerals.
60. We do not consider that the size of the estimated effect of these events is informative, as changes in the price ratio and other 'events' occur at similar times and therefore their individual effects cannot be disentangled. Therefore, we cannot conclude that the estimates in paragraph 55 are meaningful and that the analysis presented gives evidence of a significant competitive constraint.
61. We have noted a number of limitations in Co-op's analysis.
- (a) Co-op notes that its baseline results imply that a £[§] increase in the price of Standard funerals is associated with a one percentage point shift in Co-op's mix of funerals from Standard to Simple. Co-op estimates that, if Standard volumes were to remain constant, this would be equivalent to an increase in the sales of Simple funerals by [§]%. However, it is likely that a change in the relative price of Standard and Simple funerals would lead to a reduced take-up of Standard funerals. Therefore, Co-op's estimate overstates the effect of Simple price increases on the sale of Simple funerals.³⁹
- (b) [§],⁴⁰ [§]. This may be the result of customers switching from Co-op's Standard funerals to Standard funerals offered by other funeral directors, rather than them switching to Co-op's Simple funeral, which would not indicate the presence of a competitive constraint between Standard and Simple funerals.

³⁹ The implied cross-price elasticity is [§].

⁴⁰ [§].

- (c) As noted by Co-op, the baseline model effectively assumes that there is a symmetric effect of increasing and decreasing the price ratio, regardless of the underlying variation in Simple and Standard prices. However as shown in Figure 7, there are only ever increases in the price ratio and therefore we cannot estimate what would occur if the price ratio decreased.
- (d) The Co-op's submission does not indicate how much the price ratio actually varies between funeral homes, and the average ratio shown in Figure 7 only changes significantly twice. Therefore, this indicates that these results are potentially based on a small sample of price changes.

CMA consideration of points made in response to the PDR

62. Co-op disagreed with the 'decision to disregard this as evidence of a competitive constraint from Simple funerals to Standard funerals' and raised a number of additional points.⁴¹ It submitted that due to the use of a time trend variable and the fixed effects model, and as shown by an alternative model, the model presented is likely to underestimate the effect of changes in the price ratio on the sale of Simple funerals. However, for reasons described below, we continue to believe that this evidence is not necessarily robust in indicating the magnitudes of the effect of price changes and changes in transparency to the sale of Simple funerals.
63. One of the limitations we noted is that changes in the price ratio and other 'events' (such as the introduction of its 'Funeral Choices' brochure and the inclusion of Direct Cremation in its 'Funeral Choices' brochure) occurred at similar times and therefore their individual effects cannot be disentangled. Co-op submitted that it disagrees with this observation and that its analysis shows that the effect does exist, is significant, both statistically and economically and the magnitude of the estimated coefficients⁴² is likely to underestimate the real effects.
64. Co-op submitted that an analysis presented within its first submission showed that when removing the indicator variables for the changes in other 'events' from the model, the magnitude of the price effect increases, implying that the true effect of price changes was underestimated.⁴³ However, we consider that this does not add any additional clarity as to the effect of the price changes on the sale of Simple funerals. The estimated coefficient of the effect of price

⁴¹ Co-op: Response to PDR, paragraphs 4.31 – 4.36.

⁴² The estimated coefficients being defined as the size of the estimated effect of the changes in the price ratio and changes in transparency on the take-up of Simple funerals.

⁴³ Co-op: Response to PDR, paragraphs 4.32(a).

changes on the sale of Simple funerals will now be overestimated, as it now also captures the positive effect of increased transparency. The fact that the two most significant price changes occurred at the same time as other 'events' is a feature of the underlying data.

65. In our assessment of Co-op's econometric analysis, we also noted that the price ratio only significantly changes twice, indicating that the results are potentially based on a small sample of price changes. Co-op noted that this does not constitute the only source of variation in the price ratio, with another source being branches reallocated between price bands over time (the reallocation changes the price of Standard funerals at the branch).⁴⁴ The decision to reallocate branches between bands is likely to be driven by local factors (such as the branch's current performance, local competitive conditions and local demographic factors). However, local factors which may influence decisions to reallocate a branch between price bands may also independently influence the take-up of Simple funerals. If the changes in local conditions which motivate a change in price band also affect take-up of Simple funerals, the model cannot disentangle the effect of the change in local factors from the effect of the change in price ratio on the take-up of Simple funerals. In other words, the relationship between price band re-allocations and the subsequent change in the sale of Simple funerals is not likely to be clear-cut.⁴⁵ The larger, nation-wide, price changes are less likely to have this confounding issue as these changes are likely made with less consideration of the specific local competitive conditions.
66. Co-op submitted that one reason as to why the estimated coefficients are likely to underestimate the real effects of price changes on Simple sales is that the analysis included a time trend variable, to capture a possible upward trend in take-up of Simple (due to social norms).⁴⁶ However, as all changes to price ratio are to increase it (thereby increasing the take-up of Simple), the time trend variable might be capturing part of the price effect and so leading to the price effect coefficient being underestimated. We agree that this may be the case, however the estimated monthly trend is very small ([X] percentage point increase in Simple share per month), so even if any part of the price effect is captured within the time trends, it is likely to be a small amount. In appendix A1.1 submitted by the Co-op, when the time controls are removed

⁴⁴ Co-op: Response to PDR, paragraphs 4.35.

⁴⁵ For example, if a branch is located within an area of decreasing average income, this may be associated with an increasing take-up of Simple funerals and may be associated with branches being re-allocated to price bands with lower Standard funeral prices. In this example, the model would confound the effect of changes in the local market with changes in the price band. As an alternative example, if a branch is in an area with greater price competition from other companies, the branch may sell a high proportion of Simple funerals (as a cheaper alternative to its Standard offering) and may also be re-allocated to a lower price band to allow it to compete more effectively.

⁴⁶ Co-op: Response to PDR, paragraphs 4.32(b).

the implied effect of a £[X] increase in the price of Standard funerals is a [X] percentage point shift in Co-op's mix of funerals from Standard to Simple (compared to a one percentage point shift in the baseline results). This indicates that any underestimation is likely to be small.

67. Co-op submitted that another reason as to why the estimated coefficients may underestimate the true effect is that the analysis uses a fixed effects model to control for unobserved home-specific characteristics specific to each branch. It submitted that this means that the model does not take into account between-home variation in the take-up of Simple funerals and the price ratio and subsequently the estimates are likely to be underestimations.⁴⁷ However, the reduction in variation will not necessarily cause an underestimation of the true effect. Instead, this will mean the model has less information to use to estimate the effect of price and transparency on Simple sales, meaning the estimates are likely to be less robust. There is no reason to believe that this causes a directional bias to the results.
68. Co-op stated that we have misinterpreted the calculations of how a 1% increase in the mix of Simple funerals translates to a change in Simple volumes.⁴⁸ We interpreted Co-op's analysis to mean that for a 1% increase in the mix of Simple funerals, this would equate to [X]% increase in the sales of Simple funerals, holding Standard volumes constant. Co-op has also stated that a 1% change in the mix assumes that total volumes, and not Standard volumes as we assumed, remain constant. This implies that a change in the price ratio could have a simultaneous effect on Simple and Standard volumes. However, if total sales were to remain constant following the change in price ratio, then the sales of Standard funerals would have to decrease to offset the increase in the sales of Simple funerals. This means that for there to be a 1% overall increase in the Simple funeral mix, the sales of Simple funerals would only have to increase by [X]% and the sale of Standard funerals would have to decrease by [X]%. If this is the case, then it would imply that the impact on the sale of Simple funerals is lower than the estimate that Co-op has presented. We note that in either case, the estimated effect on Simple volumes is small.
69. We noted that the results submitted by Co-op might be evidence of switching from Co-op Standard funeral to another funeral director's Standard funeral, rather than to Co-op's Simple funeral. In response, Co-op stated this is a source of underestimation of the overall competitive constraint faced by Co-op, as we have noted that switching to competitors is a stronger constraint

⁴⁷ Co-op: Response to PDR, paragraphs 4.32(c).

⁴⁸ Co-op: Response to PDR, paragraphs 4.33.

than just to a different proposition within the same funeral director.⁴⁹ We continue to believe that switching to a competitor's funeral offering is a stronger constraint, but that Co-op's analysis is not able to measure this. We agree that there are likely to be some customers switching from Co-op's Standard funeral to other funeral director's Standard funerals, and therefore this analysis does not capture some aspects of the competitive constraint faced by Co-op, but that this would not indicate the presence of a competitive constraint between Standard and Simple funerals.

Summary

70. Given the significant limitations in the analysis identified, both by us and Co-op, we continue to believe that this evidence is not necessarily robust in indicating the magnitudes of the effect of price changes and changes in transparency to the sale of Simple funerals. Further, this analysis only considers switching within Co-op, whereas evidence of switching to another funeral director would provide greater evidence of a competitive constraint. As noted by Co-op, the results of this analysis may not apply to other funeral directors.

⁴⁹ Co-op: Response to PDR, paragraphs 4.34.