Financial Conduct Authority

Technical Annex to ‘Guaranteed Asset Protection insurance: a competition remedy’ CP14/29

1.1 This Technical Annex presents detailed information on our methodology for estimating the benefits to customers of the proposed remedy. It also presents sensitivity analysis showing how our estimate of these benefits would change in response to changes in the calculation’s underlying parameters. This sensitivity analysis demonstrates that the remedy would continue to generate significant benefits for customers across plausible ranges of these parameters.

Estimation of benefits

1.2 Our approach to estimating the benefits of the remedy is as follows:

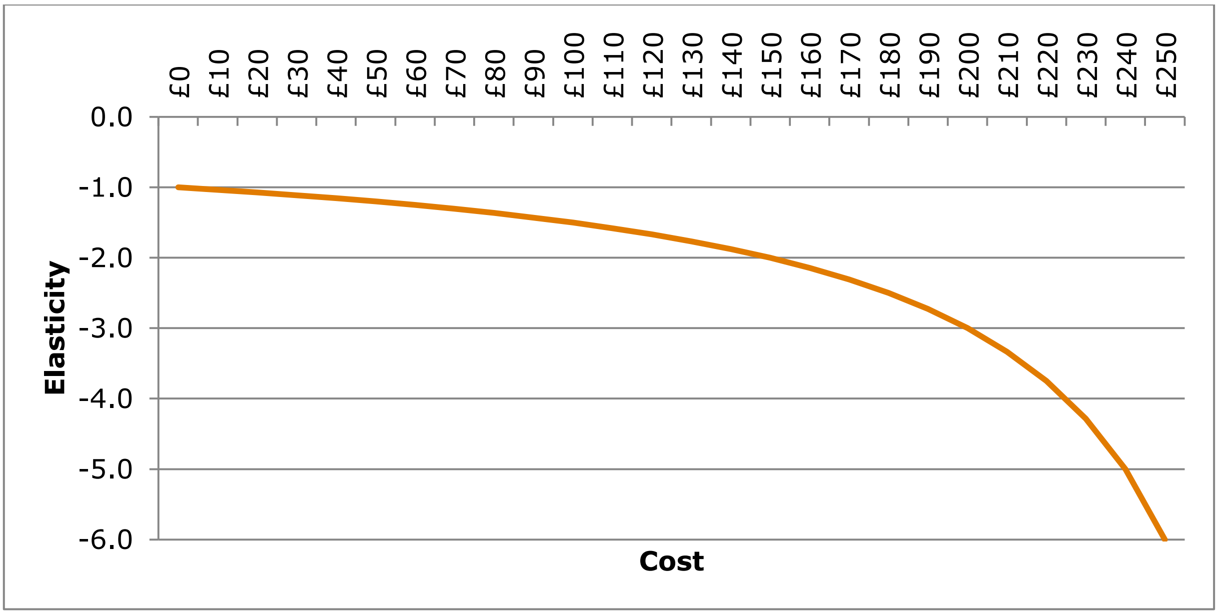
- We use information on the price and quantity of add-on GAP sales, combined with an estimate of the elasticity of demand, to calibrate a demand curve for add-on GAP insurance.
- We estimate consumer surplus in the relevant counterfactual situation, adjusting the demand curve for the proportion of customers that bought add-on GAP at a price that exceeded their willingness to pay.
- Based on the proportion of customers that we expect would shop around, and assumptions about the effect on the price of add-on GAP, we estimate the effect on consumer surplus for add-on GAP customers under the proposed remedy.
- Based on the proportion of buyers that we expect would shop around, we estimate the effect on consumer surplus of stand-alone GAP insurance buyers.
- We compare expected consumer surplus under the proposed remedy with our estimate of the consumer surplus in the counterfactual.

Demand curve for add-on GAP insurance

1.3 In the consultation paper we set out our analysis that, in the baseline or counterfactual situation in which we did not intervene, the add-on GAP insurance market would have 600,000 sales with standard three year policies retailing at around £300, against a cost per policy of £150. To model the demand side of the market for GAP insurance we combine this information with an estimate of the elasticity of demand, using a linear demand curve.

1.4 The Lerner condition can be used to infer the elasticity of demand. The condition states that, for a price-setting firm, the optimum price level is set so that the price-cost margin is equal to the (negative of the) inverse of the (firm-level) elasticity of demand.1 Using the condition for a price setting firm is appropriate because of the limited amounts of shopping around and lack of awareness of alternatives. Using this rule, Figure 1 below shows how the implied elasticity would vary depending on the marginal cost of add-on GAP insurance.

Figure 1: Variation in elasticity of demand according to GAP insurance marginal cost



1.5 Our estimate of marginal cost of add-on GAP insurance is £150, which implies a firm-level elasticity of demand in the region of −2. Because of the point of sale advantage, the competitive constraints that add-on GAP insurance distributors impose on each other and that stand alone distributors impose on add-on distributors are weak. The firm-level and market-level elasticities of demand are therefore likely to be similar. This means that we should treat −2 as a lower bound to the industry-level elasticity of demand, but the true value is unlikely to be significantly different to this.

1.6 Our baseline involves 600,000 policies sold at £300. With linear demand and an elasticity of −2, this suggests a demand curve of the form q = 1,800,000 – 4,000*p.

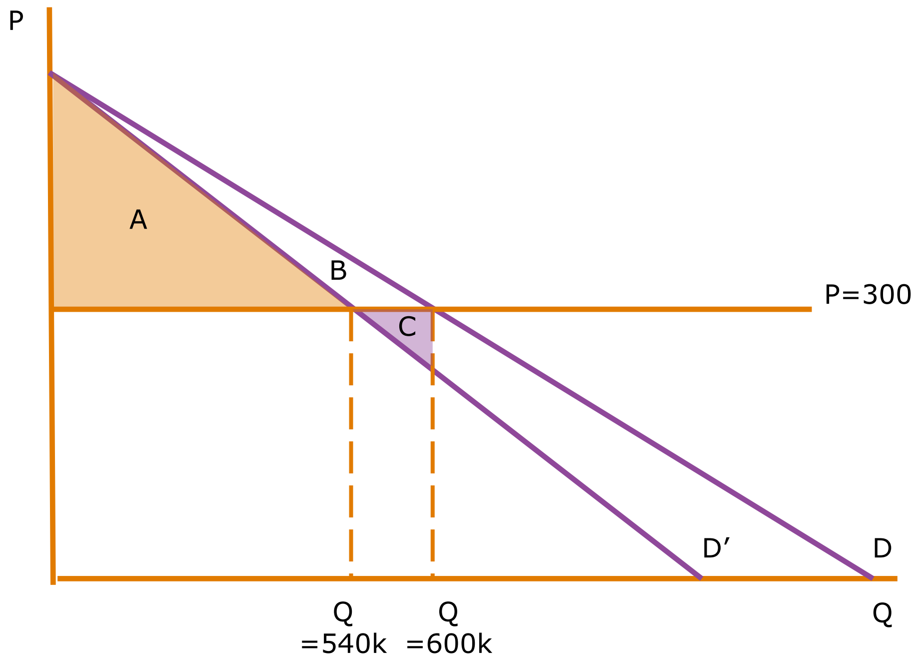
Consumer surplus in the counterfactual

1.7 As a baseline, we estimate consumer surplus under the counterfactual situation. In the Consultation Paper we examined evidence from our customer survey that around 10% of customers would not have bought GAP insurance had they had more time to consider their purchase. For these customers, the price of add-on GAP insurance would have exceeded their willingness to pay (WTP) for it. We therefore measure consumer surplus in the counterfactual situation with the demand curve adjusted down so that 10% fewer customers would buy add-on GAP insurance at £300. This is shown in the diagram below, with the demand curve adjusted down from D to D’, equivalent to a change from demand from q = 1,800,000 – 4,000*p to q = 1,620,000 - 3600*p. This means that, in Figure 2 below, although customers behave as though consumer surplus would be

[1] That is, (p – c)/p = -1/ε where p is price, c is marginal cost and ε is the (firm-level) price elasticity of demand.

equal to A+B, the true surplus is actually A-C, with price and quantity remaining at £300 and 600,000 respectively. This is because the final 60,000 customers buy GAP insurance at a price that exceeds their willingness to pay for it.

Figure 2: Estimation of consumer surplus in counterfactual



1.8 This reduces the estimate of consumer surplus in the counterfactual situation from £45 million (equal to A+B) to £40 million (equal to A-C).

Effect on add-on GAP insurance market

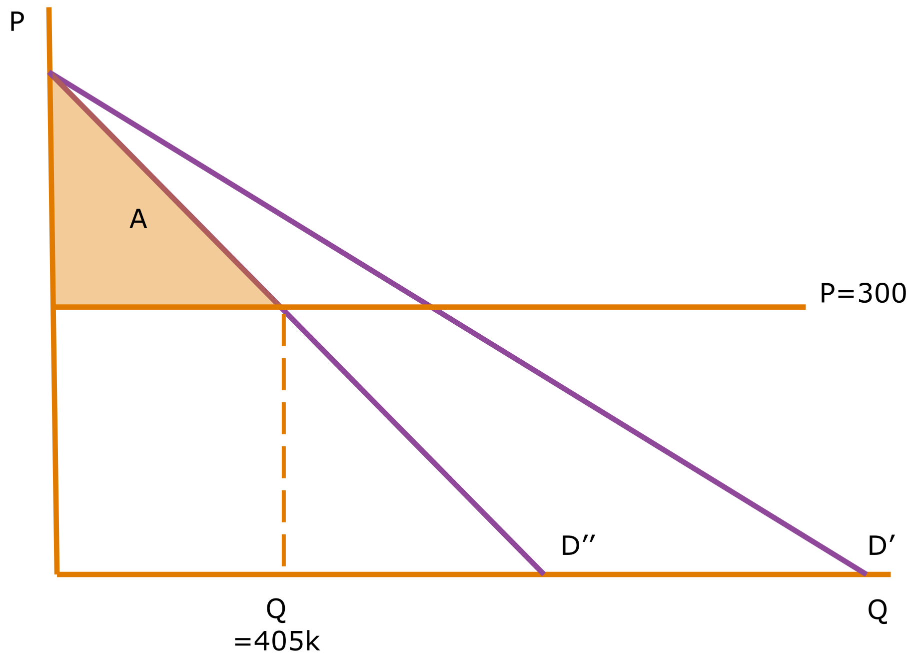
1.9 In the Consultation Paper we set out evidence from our customer survey that 25% of customers would shop around after the implementation of this remedy. To analyse the effect of this on add-on GAP insurance sales, we further reduce the add-on GAP insurance demand curve so that 25% fewer customers would have bought add-on GAP insurance at a price of £300. This implies that 25% of customers that previously bought add-on GAP insurance switch to stand-alone GAP insurance, given the £150 saving from buying a stand-alone product. We therefore adjust the demand curve for add-on GAP insurance further from D′ to D′′, equivalent to demand of the form q = 1,215,000 - 2,700*p.

1.10 In the Consultation Paper we set out our rationale for considering two situations, one in which the add-on GAP insurance price does not change as a result of intervention, and one in which the firm-level elasticity of demand for add-on GAP insurance (as opposed to the industry-level elasticity) changes so as to reduce the price of add-on GAP insurance by a modest amount to £250. This was on the grounds that the remedy would increase customers' awareness of alternatives, so that even if 25 per cent of customers shopped around, add-on prices would have to fall to stop this proportion being even higher.[2] Consumer surplus in the first case, with no change in the firm-level

[2] We have assumed throughout that the marginal cost of supplying an additional GAP policy is constant.

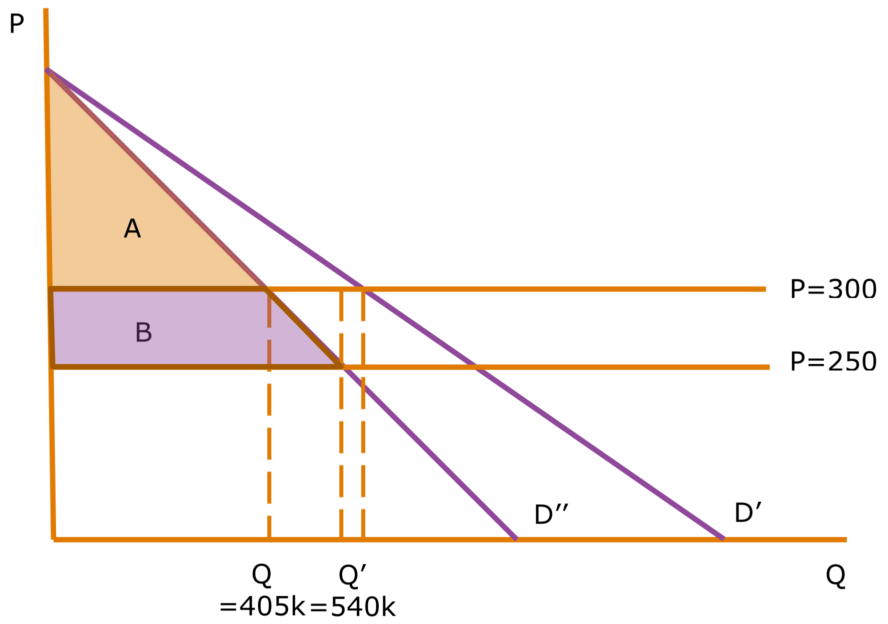
elasticity of demand, is equal to the area A in Figure 3 below. This equates to £30.4 million.

Figure 3: Estimation of effect on add-on GAP insurance market: no supply-side change



1.11 In the second case, in which the firm-level elasticity of demand changes in the response to the proposed remedy, consumer surplus is equal to the area A+B in Figure 4 below. In this case, whereas add-on demand would equal to Q at £300 as in Figure 3, at the new price of £250 demand would equal Q', with Q'>Q.

Figure 4: Estimation of effect on add-on GAP insurance market: fall in firm-level elasticity

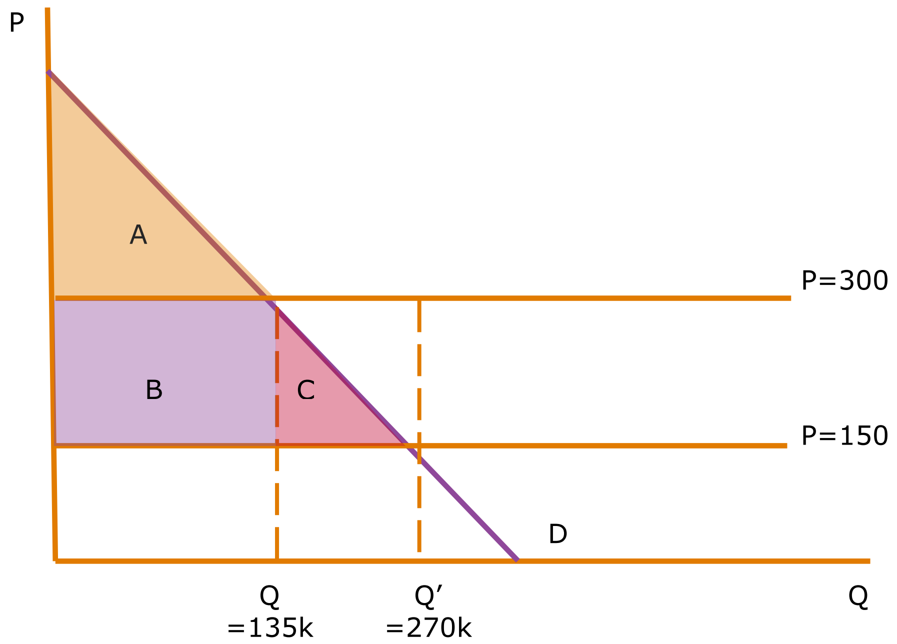


1.12 In this case, add-on customers' consumer surplus is £54 million.

Effect on stand-alone GAP insurance market

1.13 In the Consultation Paper we set out our estimate that 25% of customers would shop around. Since stand-alone GAP insurance prices are around £150 lower than add-on prices, shopping around would save these customers some £22.5 million relative to buying in the add-on market. This is equivalent to the area B in the Figure 5 below (their consumer surplus in the counterfactual is equal to the area A). In addition, our assessment is that the same proportion, 25%, of customers that did not purchase add-on GAP insurance would shop around and potentially buy GAP insurance. These customers did not buy GAP insurance at £300, but those customers who value GAP insurance above £150 would now buy GAP insurance. These customers would gain by the area C in the diagram below. This implies demand for stand-alone GAP insurance of q=405,000 – 900*p.

Figure 5: Estimation of effect on stand-alone GAP insurance market



1.14 With a stand-alone price of £150, consumer surplus is equal to the area (A + B + C) in the diagram above. This equates to £40.5 million.

Overall Effect

1.15 The table below summarises our overall assessment of the benefits of the remedy to consumers.

Table 1: Estimation of benefits to consumers

	Parameter
Counterfactual	
Starting Quantity	600,000
Starting Price	£300
Starting Marginal Cost	£150

	Parameter
Starting Elasticity of demand	-2
Counterfactual demand curve	q=1,800,000 - 4,000*p
Proportion of customers that buying at price greater than WTP	10%
Add-on demand at £300 in counterfactual situation	540,000
Implied 'true' willingness to pay in counterfactual situation	q=1,620,000 - 3600*p
Counterfactual consumer surplus	£40,000,000
Add-on sales	
Proportion of customers shopping around at £300	25%
Post-intervention add-on demand At £300	405,000
Implied add-on demand post-implementation	q=1,215,000 - 2,700*p
Add-on price: no change in firm-level elasticity of demand	£300
Add-on demand: no change in firm-level elasticity	405,000
Add-on consumer surplus: no change in firm-level elasticity	£30,375,000
Add-on price: price fall	£250
Add-on quantity: price fall	540,000
Add-on consumer surplus: price fall	£54,000,000
Stand-alone sales	
Stand-alone demand at £300	135,000
Implied stand-alone demand	q=405,000 – 900*p
Stand-alone market price	150
Stand-alone demand at stand-alone price	270,000
Stand-alone consumer surplus	£40,500,000
Overall effect	
Change in surplus - no price fall	£30,875,000
Change in surplus - price fall	£54,500,000

1.16 This analysis suggests total benefits to customers in the region of £31 to £55 million per year.

Sensitivity analysis

1.17 To examine the robustness of our £31 to £55 million estimate of net benefits to customers, we analyse how these benefits to customers would change in response to changes in the following parameters:

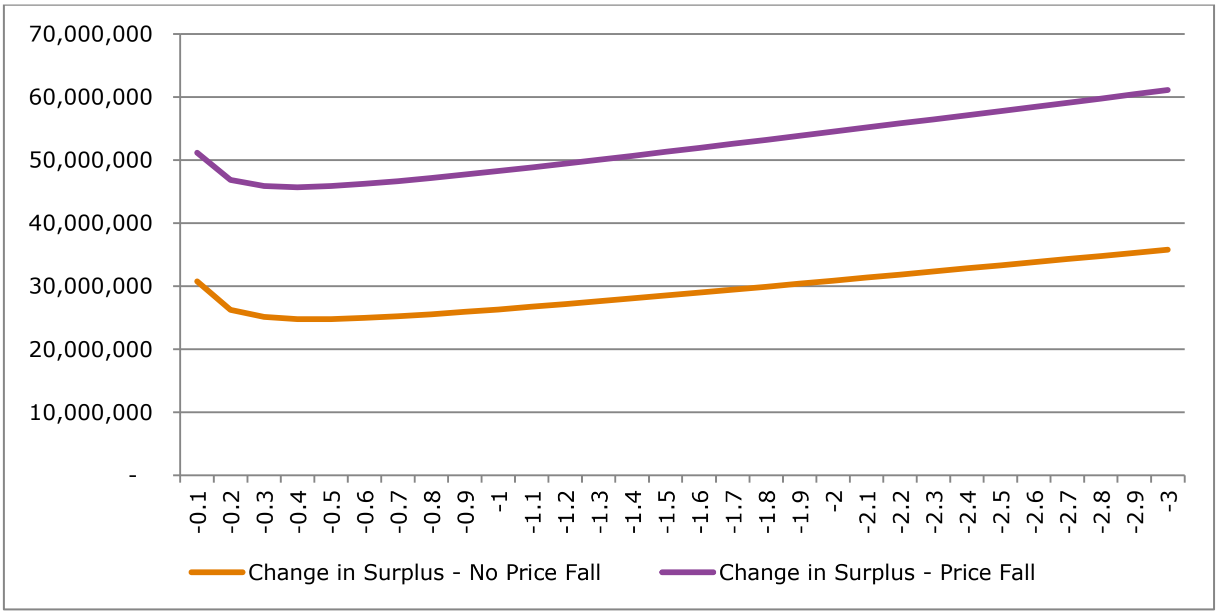
- the elasticity of demand;
- the proportion of customers that shop around;
- the proportion of customers that bought add-on GAP in the counterfactual at a price in excess of their willingness to pay;
- the marginal cost of add-on GAP post-intervention;
- additional reductions in add-on GAP demand, due to reduced convenience or customers forgetting to shop-around;
- the price of stand-alone GAP insurance; and

- the presence of cross-subsidies (“waterbed” effects).

Elasticity of demand

1.18 Our analysis uses an elasticity of demand of −2. Our assessment is that this was an upper bound, though the true number is likely to be sufficiently close to −2 to use this as our point estimate. Varying the elasticity of demand between 0 and −3 changes net benefits to customers as shown in Figure 6 below.

Figure 6: Change to consumer surplus (£) with variations in the elasticity of demand

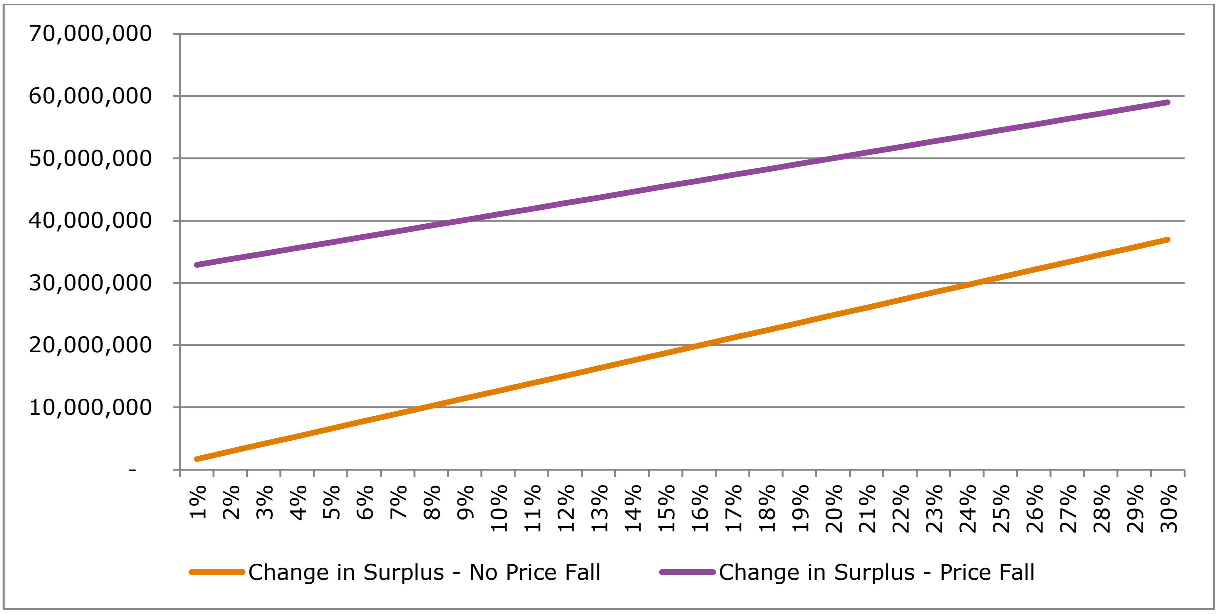


1.19 Changes to the elasticity of demand would not alter the conclusion that the remedy generates significant benefits for customers, and across all levels the remedy generates benefits to customers of at least £20 million per year.

Proportion of customers shopping around

1.20 Our assessment is that 25% of customers would shop around in response to the proposed intervention. In Figure 7 below we show how our estimate of benefits would change if we varied the proportion of customers shopping around from zero to 30%.

Figure 7: Change to consumer surplus (£) with variations in the proportion of customers shopping around

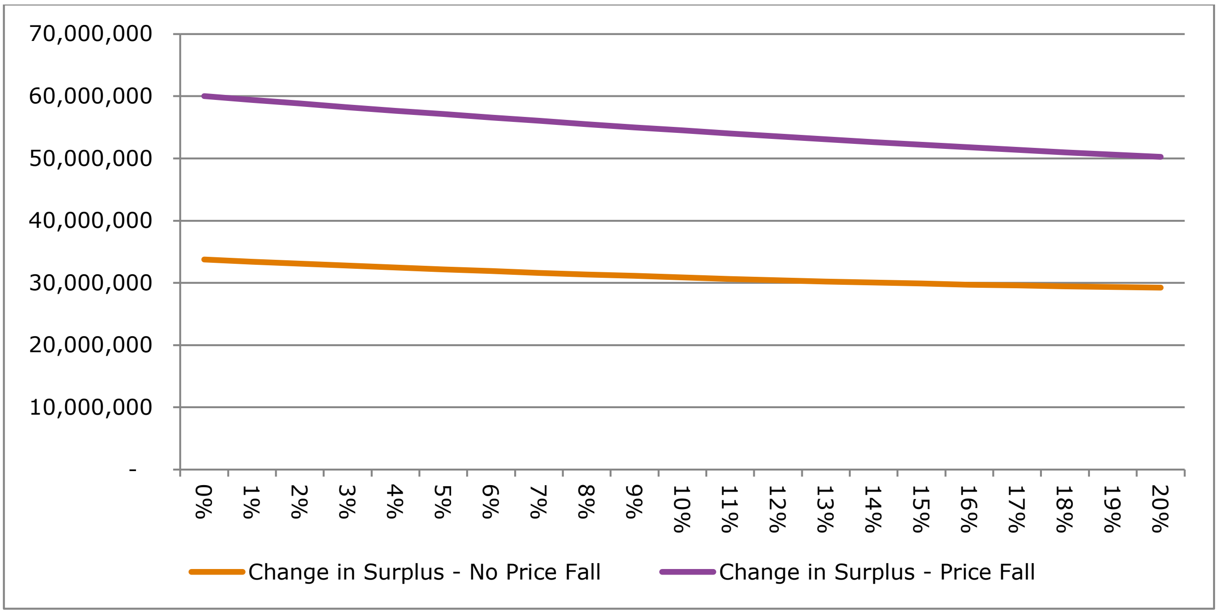


1.21 The remedy would still produce substantial benefits to customers across plausible ranges for the proportion of customers that would shop around. Even shopping around by 1 in 20 customers, which is 20 percentage points lower than our central estimate, would induce net benefits to customers of at least £5 million per year, the same level as our assessment of the implementation costs of the remedy.

Proportion of customers that bought add-on GAP in the counterfactual at a price in excess of their willingness to pay

1.22 In our original specification, in the counterfactual 10% of customers that purchased GAP insurance had a valuation of GAP insurance that was below the price that they paid for it. These consumers would cease to buy GAP after the implementation of the remedy. We examine how net benefits change when this proportion changes from zero to 20%.

Figure 8: Change to consumer surplus (£) with variations in the proportion of customers that bought add-on GAP in the counterfactual at a price in excess of their willingness to pay

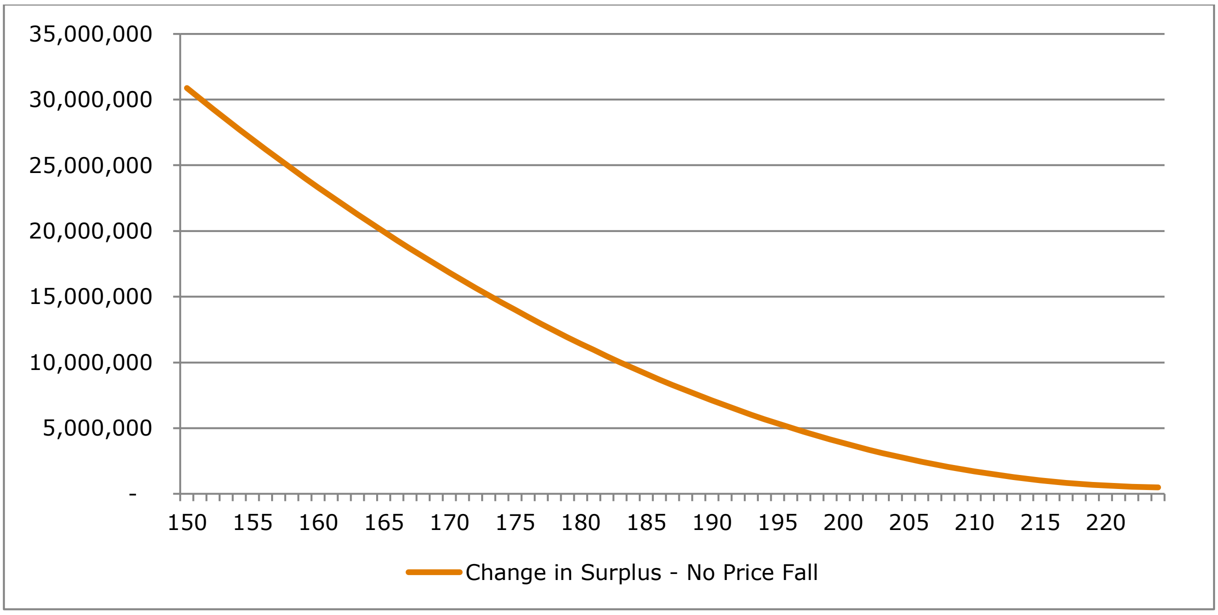


1.23 Varying this proportion does not therefore materially affect our conclusion that the remedy generates significant benefits to customers.

Increase in marginal cost

1.24 We have designed the remedy so that on-going costs to firms that could be recovered from customers are minimal. However, we acknowledge that there could be some additional costs and therefore examine how changes in the marginal cost of add-on GAP insurance affect our assessment of the consumer surplus. We examine the scenario in which there is no change in the elasticity of demand for add-on GAP insurance (which represents our lower bound for benefits) and change the price of add-on GAP insurance according to the Lerner condition.

Figure 9: Change to consumer surplus (£) with variations in the marginal cost of add-on GAP insurance



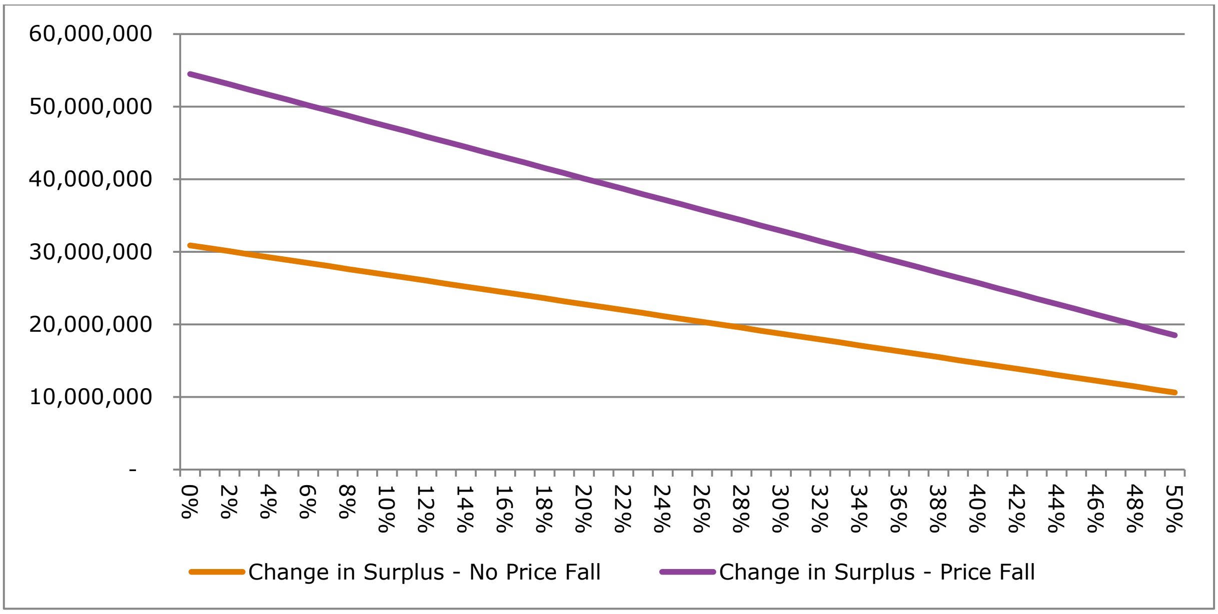
1.25 This shows that there would have to be a substantial increase in the marginal cost of add-on GAP insurance to change our conclusion that the remedy generates significant net benefits to customers. For example, to reduce the lower bound of our estimate of benefits to customers below £5 million, the marginal cost of add-on GAP insurance would have to increase by almost £50.

Additional reductions in add-on demand

1.26 We have considered the impact of reductions in add-on demand that are not generated by customers choosing to shop around (i.e. do not translate into higher stand-alone demand). This is to capture additional factors that could affect net benefits, such as reductions in convenience, that our original estimate did not incorporate. We have examined how benefits would change if up to 50% of add-on buyers would no longer buy a policy at £300. For reference, the Competition Commission's estimate of the loss of convenience for its more stringent PPI remedy was at most a reduction of 30% in the amount customers were willing to pay, which affected 60% of customers.[3] Such an impact from our proposed remedy would result in a fall in add-on GAP demand of just over 20%. This ignores any gain for customers that prefer to buy after the point of sale, which the Competition Commission found to exceed the loss of convenience for those that preferred to buy at the point-of-sale.

[3] Competition Commission, "Payment protection insurance market investigation: remittal of the point-of-sale prohibition remedy by the Competition Appeal Tribunal, Final report" Appendix I (http://webarchive.nationalarchives.gov.uk/20140402141250/http://www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/inquiry/ref2010/ppi_remittal/pdf/appendices_and_glossary_final_report.pdf)

Figure 10: Change to consumer surplus (£) with variations in the proportion of add-on customers that would continue to buy GAP insurance

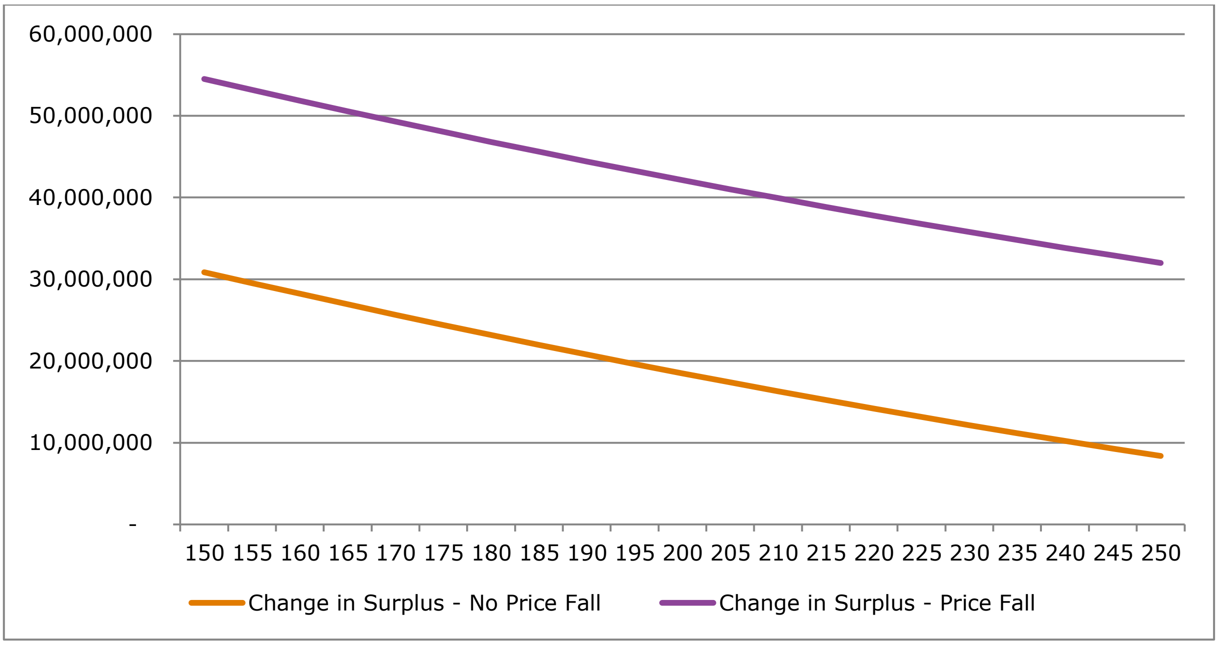


1.27 This implies that the remedy would still generate significant benefits to customers even if our original scenario underestimated the effects of factors such as loss of convenience from buying at the point-of-sale.

Changes to the price of stand-alone GAP insurance

1.28 We illustrate how benefits change when we vary the price of stand-alone GAP insurance. Although we are confident in our information on this price, increasing the price of stand-alone GAP insurance in our analysis is equivalent to reducing the saving that customers make from shopping around and therefore allows for the possibility that customers would incur search costs in buying stand-alone GAP.

Figure 11: Change to consumer surplus (£) with variations in the price of stand-alone GAP insurance

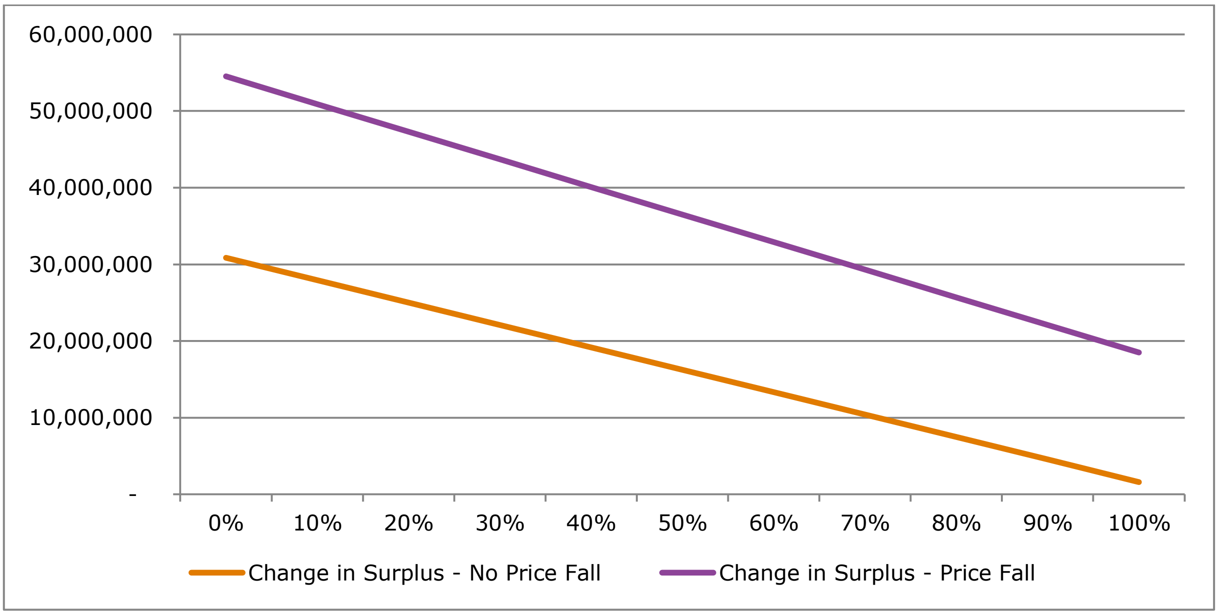


1.29 As shown in Figure 11, benefits to customers remain significant even for substantial reductions in the savings that customers would make from switching from add-on to stand-alone GAP insurance.

The presence of cross-subsidies ("waterbed" effects)

1.30 We acknowledge that it is possible that there is a "waterbed" effect, so that reductions in excess profits earned in GAP insurance could result in increases in vehicle prices due to reductions in cross-subsidies. To account for this, we examine how benefits to customers change according to the proportion of excess profits that are passed on to customers in the form of lower vehicle prices. This is shown in Figure 12 below.

Figure 12: Estimated change in consumer surplus (£) adjusted for waterbed effects of 0 to 100 %



1.31 As Figure 12 shows, the remedy still generates benefits to customers across all levels of waterbed effect, and for most levels these benefits are significant.

Conclusion on sensitivity analysis

1.32 We have examined how our estimate of benefits to customers changes when we alter the underlying parameters of our calculations. This shows that the proposed remedy continues to generate significant benefits to customers for plausible ranges around our point estimates for these parameters.