

Title: Restricting volume promotions for high fat, sugar, and salt (HFSS) products IA No: 13011 Lead department or agency: Department of Health and Social Care (DHSC) Other departments or agencies: n/a	Impact Assessment (IA)			
	Date: 16/11/2018			
	Stage: Consultation			
	Source of intervention: Domestic			
	Type of measure: Secondary legislation			
	Contact for enquiries: Childhood Obesity Team Email: Childhood.Obesity@dh.gsi.gov.uk			
Summary: Intervention and Options				RPC opinion: Not Applicable

Cost of Preferred (or more likely) Option 3				
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANCB on 2014 prices)	In scope of One-In Three-Out?	Measure qualifies as
£2,940m	-£233m	£11.7m	Yes	N/A

What is the problem under consideration? Why is government intervention necessary?
Childhood obesity is one of the biggest health problems this country faces. Obesity is a major cause of ill health in the UK, causing heart disease, stroke, type II diabetes and cancer, imposing a substantial burden on the NHS. Price promotions, especially volume offers, have been found to cause consumption of high fat, sugar, and salt (HFSS) products above and beyond what would be expected as part of a normal response to pricing changes. Government intervention is necessary to ensure that all retailers establish shopping environments that do not encourage excess consumption of HFSS products.

What are the policy objectives and the intended effects?
The policy is intended to reduce excess purchases of products likely to lead to weight gain while minimising the distortionary effect on purchases that do not contribute to obesity. By increasing the likelihood, that stores provide healthier options on promotion further improvements in diets may be experienced. Mandating across the market ensures that a level playing field is created for businesses.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)
Option 1: Do nothing
Option 2: End all volume offers for HFSS products in all retailers and the out-of-home sector. This would include free refills of sugar-sweetened beverages (SSBs) that are in scope of the Soft Drinks Industry Levy (SDIL).
Option 3: End all volume offers for HFSS products included in Public Health England's sugar and calorie reduction programme and the SDIL in all retailers who sell food and the out-of-home sector. This would include free refills of SSBs.
Option 4: No more than 20% of sales from volume offers on food and drink per year can come from HFSS products included in Public Health England's sugar and calorie reduction programmes and the SDIL.
A preferred option has not been chosen. This choice will be informed by the consultation exercise. For the purposes of this document only (to aid clarity by comparing against a single option), Option 3 is presented as the preferred option. Furthermore, as part of the consultation, we are open to alternative suggestions from stakeholders on the best way to implement this policy to achieve these aims.

Will the policy be reviewed? It will be reviewed. If applicable, set review date: before 2023					
Does implementation go beyond minimum EU requirements?				N/A	
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.		Micro No	< 20 Yes	Small Yes	Medium Yes
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)				Traded:	
				Non-traded:	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible
SELECT SIGNATORY:



Date: 16/11/18

Summary: Analysis & Evidence

Policy Option 1

Description: Do nothing/business as usual

FULL ECONOMIC ASSESSMENT

Price Base Year	PV Base Year	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate:

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate			

Description and scale of key monetised costs by 'main affected groups'
 These are defined to be 0

Other key non-monetised costs by 'main affected groups'
 These are defined to be 0

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate			

Description and scale of key monetised benefits by 'main affected groups'
 These are defined to be 0

Other key non-monetised benefits by 'main affected groups'
 These are defined to be 0

Key assumptions/sensitivities/risks N/A	Discount rate (%)	
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BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs:	Benefits:	Net:	

Summary: Analysis & Evidence

Policy Option 2

Description: End all volume offers for HFSS products in all retailers and the out-of-home sector. This would include free refills of sugar-sweetened beverages that are in scope of the Soft Drinks Industry Levy.

FULL ECONOMIC ASSESSMENT

Price Base Year 2018	PV Base Year 2018	Time Period Years 25	Net Benefit (Present Value (PV)) (£m)		
			Low: -30	High: 8,670	Best Estimate: 5,190

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	5	Optional	30
High	5	Optional	785
Best Estimate	5	28	480

Description and scale of key monetised costs by 'main affected groups'

Over 25 years expected costs include lost retailer profits of around £340m and lost manufacturer profits of around £110m. Additional familiarisation and product assessment costs of £3m for the out-of-home sector and £2m for retailers. The opportunity cost to DHSC of enforcing these regulations is estimated to be around £25m across 25 years.

Other key non-monetised costs by 'main affected groups'

A significant reduction in profits for out-of-home businesses and food and drink manufacturers supplying this sector.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	0
High	Optional	Optional	9,455
Best Estimate			5,675

Description and scale of key monetised benefits by 'main affected groups'

Expected benefits are the health benefits that would accrue because of lower calorie consumption amongst overweight and obese people – equivalent to £3.1bn over the 25-year assessment period. There would be additional health benefits to the population from reinvesting cost savings back into the NHS, worth £2.1bn. Social care benefits would amount to £410m and reduced premature mortality would be expected to deliver an additional £80m of economic output.

Other key non-monetised benefits by 'main affected groups'

Consumers may experience an increase in consumer surplus because they no longer have to make excessive purchases but can still profit from price cuts.

Key assumptions/sensitivities/risks

Discount rate (%)

1.5/3.5

Key assumptions in the analysis include that retailers switch to using price cuts to promote HFSS products, that this switch reduces prices back down to their average level before these restrictions and that there is a degree of compensatory behaviour. Health benefits require the direct impacts of the intervention not to be offset and costs to industry are based on limited data on profit margins and a single analytical report. A discount rate of 1.5% is applied on health impacts and 3.5% on all other monetised impacts. There are likely to be various complexities in defining and implementing restrictions on price promotions. Our considerations in the following assume that these are successfully overcome.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 23	Benefits: 0	Net: -23	115

Summary: Analysis & Evidence

Policy Option 3

Description: End all volume offers for HFSS products included in Public Health England's sugar and calorie reduction programme and the Soft Drinks Industry Levy in retailers and the out-of-home sector. This includes free refills of sugar-sweetened beverages.

FULL ECONOMIC ASSESSMENT

Price Base Year 2018	PV Base Year 2018	Time Period Years 25	Net Benefit (Present Value (PV)) (£m)		
			Low: -30	High: 4,920	Best Estimate: 2,940

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	5	Optional	30
High	5	Optional	410
Best Estimate	5	15	255

Description and scale of key monetised costs by 'main affected groups'

Over 25 years expected costs include lost retailer profits of around £175m and lost manufacturer profits of £55m. Additional familiarisation and product assessment costs of £3m for the out-of-home sector and £2m for retailers. The opportunity cost to DHSC of enforcing these regulations is estimated to be around £25m.

Other key non-monetised costs by 'main affected groups'

A significant reduction in profits for the out-of-home sector and manufacturers supporting the out-of-home sector. A loss in consumer surplus for consumers who currently make extensive use of price promotions.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	0
High	Optional	Optional	5,335
Best Estimate			3,200

Description and scale of key monetised benefits by 'main affected groups'

Expected benefits are the health benefits that would accrue because of lower calorie consumption amongst overweight and obese people – equivalent to £1.7bn over the 25-year assessment period. There would be additional health benefits to the population from reinvesting cost savings back into the NHS, worth £1.2bn. Social care benefits would amount to £230m and reduced premature mortality would be expected to deliver an additional £45m of economic output.

Other key non-monetised benefits by 'main affected groups'

Consumers may experience an increase in consumer surplus because they no longer have to make excessive purchases but can still profit from price cuts.

Key assumptions/sensitivities/risks

Discount rate (%)

1.5/3.5

Key assumptions in the analysis include that retailers switch to using price cuts to promote HFSS products, that this switch reduces prices back down to their average level before these restrictions and that there is a degree of compensatory behaviour. Health benefits require the direct impacts of the intervention not to be offset and costs to industry are based on limited data on profit margins and a single analytical report. A discount rate of 1.5% is applied on health impacts and 3.5% on all other monetised impacts. There are likely to be various complexities in defining and implementing restrictions on price promotions. Our considerations in the following assume that these are successfully overcome.

BUSINESS ASSESSMENT (Option 3)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 12	Benefits: 0	Net: -12	

Summary: Analysis & Evidence

Policy Option 4

Description: No more than 20% of sales from volume offers on food and drink per year can come from HFSS products included in Public Health England's sugar and calorie reduction programmes and the Soft Drinks Industry Levy.

FULL ECONOMIC ASSESSMENT

Price Base Year 2018	PV Base Year 2018	Time Period Years 25	Net Benefit (Present Value (PV)) (£m)		
			Low: -80	High: 1,150	Best Estimate: 660

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	5	Optional	80
High	5	Optional	175
Best Estimate	5	7	140

Description and scale of key monetised costs by 'main affected groups'

Over 25 years expected costs include lost retailer profits of around £45m and lost manufacturer profits of £15m. Additional familiarisation and product assessment costs of £3m for the out-of-home sector and £2m for retailers. The cost of monitoring progress against the target is estimated to be around £9m for retailers and £18m for out-of-home businesses over 25 years. The opportunity cost to DHSC of enforcing these regulations is estimated to be around £48m across 25 years.

Other key non-monetised costs by 'main affected groups'

A significant reduction in profits for the out-of-home sector and manufacturers supporting the out-of-home sector. A loss in consumer surplus for consumers who currently make extensive use of price promotions.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	0
High	Optional	Optional	1,320
Best Estimate			795

Description and scale of key monetised benefits by 'main affected groups'

Expected benefits are the health benefits that would accrue because of lower calorie consumption amongst overweight and obese people – equivalent to £0.4bn over the 25-year assessment period. There would be additional health benefits to the population from reinvesting cost savings back into the NHS, worth £0.3bn. Social care benefits would amount to £58m and reduced premature mortality would be expected to deliver an additional £11m of economic output.

Other key non-monetised benefits by 'main affected groups'

Consumers may experience an increase in consumer surplus because they no longer need to make excessive purchases but can still profit from price cuts.

Key assumptions/sensitivities/risks

Discount rate (%)

1.5/3.5

Key assumptions in the analysis include that retailers switch to using price cuts to promote HFSS products, that this switch reduces prices back down to their average level before these restrictions and that there is a degree of compensatory behaviour. Health benefits require the direct impacts of the intervention not to be offset and costs to industry are based on limited data on profit margins and a single analytical report. A discount rate of 1.5% is applied on health impacts and 3.5% on all other monetised impacts. There are likely to be various complexities in defining and implementing restrictions on price promotions. Our considerations in the following assume that these are successfully overcome.

BUSINESS ASSESSMENT (Option 4)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 5	Benefits: 0	Net: -5	23

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Executive summary

Problem and justification for action

1. Childhood obesity is one of the biggest health problems this country faces. Nearly a quarter of children in England are obese or overweight by the time they start primary school aged five, and this rises to one third by the time they leave aged 11¹.
2. Obesity is a major determinant of ill health². This imposes a substantial burden on the NHS, with overweight and obesity costing the health service in England £5.1bn in 2014/15³. Obesity causes further costs to society through premature mortality, increased sickness absence and additional benefit payments.
3. Price promotions (volume promotions and temporary price cuts) in the UK are the highest in Europe. They account for around 40% of take home food and drink expenditure. Furthermore, higher sugar food and drink items are more likely to be promoted and deeply promoted⁴. Government intervention is necessary to ensure businesses establish shopping environments that do not encourage excess calorie consumption.

Policy objective

4. This impact assessment includes modelling of a range of options. Through this modelling we established the two best options to pursue and seek stakeholders views on (Option 3 and Option 4 in this document). The options analysed in the IA are:
 - Option 1: Do nothing
 - Option 2: End all volume offers of high fat, sugar, and salt (HFSS) products in all retailers who sell food and the out-of-home sector. This would include free refills of sugar-sweetened beverages (SSBs), provided they are in scope of the Soft Drinks Industry levy.
 - Option 3: End all volume offers for HFSS products included in Public Health England's (PHE) sugar and calorie reduction programme and the Soft Drinks Industry Levy (SDIL) in all retailers who sell food and the out-of-home sector.
 - Option 4: No more than 20% of sales from volume offers on food and drink per year can come from HFSS products included in PHEs sugar and calorie reduction programmes and the SDIL.
5. A preferred option has not been chosen. This choice will be informed by the consultation exercise. For the purposes of this document only (to aid clarity by contrasting against a single option), Option 3 is presented as the preferred option. It is helpful to point out that Option 3 is better targeted at the products that contribute the most sugar and calories to children's diets than Option 2 and delivers more benefits than Option 4.

Costs and benefits of options

6. The benefits from restricting the promotion of HFSS products are expected to be a reduction in obesity prevalence and obesity related morbidity and mortality.
7. The main categories of costs are transition costs associated with checking products and lost profits to industry due to reduced sales of HFSS products.
8. The figures presented below are taken from our central estimates, which assume that compensating behaviour by consumers and industry means that 40% of the calories removed from people's diets are replaced. High and low estimates based on different levels of calorie compensation are included in the cost and benefit of options section in the main text.

¹ NHS Digital (2017) National Child Measurement Programme 2016/17

² Guh et al. (2009) The incidence of co-morbidities related to obesity and overweight: A systematic review and meta-analysis, BMC Public Health

³ Estimates for UK in 2014/15 are based on: Scarborough, P. (2011) The economic burden of ill health due to diet, physical inactivity, smoking, alcohol and obesity in the UK: an update to 2006–07 NHS costs. Journal of Public Health. May 2011, 1-9. Uplifted to take into account inflation. No adjustment has been made for slight changes in overweight and obesity rates over this period. We assume England costs account for around 85% of UK costs.

⁴ Public Health England (2015) Sugar reduction: the evidence for action, available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/470179/Sugar_reduction_The_evidence_for_action.pdf (Accessed 15/06/2018)

Illustrative Preferred Option

9. Option 3 has been presented as the preferred option for the purposes of this document, though the consultation process will seek evidence to inform the final choice of options.
10. Our central estimates of the total net present value of costs to government and industry are around £255m. This is compared to total benefits of around £3.2bn. Over 25 years, expected costs to retailers include total transition costs of £2m and lost profit of approximately £1175m. Costs to out-of-home sector businesses include transition costs of £3m and an unquantified reduction in profit. Over this period, manufacturers of HFSS products would also experience total lost profits of around £55m.
11. The enforcement costs will be borne by the Department of Health and Social Care. The opportunity cost to the department of enforcing these regulations is estimated to be around £25m across 25 years.
12. The expected health benefits for Option 3 are estimated to be around £1.7bn over the 25-year assessment period. Reduced morbidity would also result in reduced cost pressures to the NHS. There would be additional health benefits to the population from reinvesting these savings back into the NHS, these are estimated to be worth around £1.2bn. Social care savings would amount to £230m and reduced premature mortality would be expected to deliver an additional £45m economic output through additional labour force participation.

Alternative Options

Option 2

13. The difference between Option 2 and 3 is that here all HFSS products would be banned from volume offers, not just those included in Public Health England's reformulation programmes and the SDIL. The total costs for this option are estimated to be £480m and total benefits £5.7bn over the 25-year assessment period.

Option 4

14. Under Option 4, retailers and out-of-home food outlets would be required to ensure that no more than 20% of their sales from volume offers on food and drink per year come from HFSS products covered by Public Health England's sugar and calorie reduction programmes, as well as any drinks within scope of the SDIL.
15. Total costs for this option are estimated to be around £135m and total benefits £0.8bn over 25-years.

Critical Value Analysis

16. It is possible that wider factors, such as changes to consumer behaviour, could offset the expected benefits of this policy. To assess the impact of this compensation, we consider the degree of offsetting required to result in a neutral net present value. Any offset would depend on additional consumption, and thus further profits to industry. Therefore, most of the costs and benefits of the policy tend to vary together. Considering this suggests that 99% of the benefits of the policy would need to be offset for the policy not to be considered socially beneficial (based on Option 3).

NPV Summary

17. The Table below outlines the expected impacts of the different policy options over the 25-year assessment period. Option 1 represents the do-nothing option against which the other options are compared. As such, the costs and benefits of this option are 0.

Summary of the central estimates for the policy options (£m)

Option	Total cost	Total benefit	NPV
1	0	0	0
2	480	5,675	5,190
3	255	3,200	2,940
4	135	795	660

Problem under consideration

1. Childhood obesity is one of the biggest health problems this country faces. Nearly a quarter of children in England are obese or overweight by the time they start primary school aged five, and this rises to one third by the time they leave aged 11⁵.
2. Obesity is a major determinant of ill health in the UK, causing heart disease, stroke, type II diabetes and cancer. Obese females are over ten times more likely to develop type II diabetes than their healthy weight counterparts are, with obese males over five times more likely⁶. This imposes a substantial burden on the NHS, with overweight and obesity estimated to have cost the NHS in England £5.1bn in 2014/15⁷. Obesity causes further costs to society and government through premature mortality, increased sickness absence and additional benefit payments.
3. In 2016, 61% of adults in England were classified as overweight or obese, with 26% being obese. Amongst children aged 2-15, the equivalent figures were 28% and 16% respectively⁸. Without action, the burdens of obesity and its related conditions are expected to grow substantially over time. Projections, suggest that the proportion of the UK adult population who are obese will increase significantly over the coming decades^{9 10}.
4. Childhood obesity is a complex problem with many drivers, including our behaviour, environment, genetics and culture. Therefore, the government is committed to pursuing a wide set of actions to target obesity. Despite the complexity of its drivers, at its root obesity is caused by consistently consuming more calories than we use to maintain our bodies and through activity. It is estimated that on average, compared with those of ideal body weights, overweight and obese children consume between 140 and 500 excess calories per day for boys and between 160 and 290 for girls, depending of their age¹¹. Taking action to help reduce this excess calorie consumption will decrease obesity prevalence and obesity related ill health.

Types of price promotions

5. Price promotions fall into two main categories¹² volume offers and reference pricing, both of which are outlined below.
6. Generally speaking, volume offers include:
 - Multi-buy offers - where the discount is obtained by purchasing more than one unit, such as in buy-one-get-one-free and 3 for 2 offers.
 - Combination offers - where a discount is given when individuals purchase a specified combination of products, as is the case in meal deals for example.
 - Linked offers - where the consumer is offered a free or discounted product when they purchase another product, such as a half price drink when they buy a sandwich.
 - Extra for the same price - when the consumer is given more for the same price, such as 50% extra free.

⁵ NHS Digital (2017) National Child Measurement Programme 2016/17

⁶ Guh et al. (2009) The incidence of co-morbidities related to obesity and overweight: A systematic review and meta-analysis, BMC Public Health

⁷ Estimates for UK in 2014/15 are based on: Scarborough, P. (2011) The economic burden of ill health due to diet, physical inactivity, smoking, alcohol and obesity in the UK: an update to 2006–07 NHS costs. Journal of Public Health. May 2011, 1-9. Uplifted to take into account inflation. No adjustment has been made for slight changes in overweight and obesity rates over this period. It is assumed that England costs account for around 85% of UK costs.

⁸ Health Survey for England 2016, NHS Digital

⁹ Tackling Obesities: Future Choices – Project report, Government Office for Science, 2007: <https://www.gov.uk/government/publications/reducing-obesity-future-choices> (Accessed 15/06/2018)

¹⁰ Pineda E, Sanchez-Romero LM, Brown M, Jaccard A, Jewell J, Galea G, Webber L, Breda J. Forecasting Future Trends in Obesity across Europe: The Value of Improving Surveillance. Obesity facts. 2018;11(5):360-71.

¹¹ Calorie reduction: the scope and ambition for action, Public Health England, 2018: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685359/Calorie_reduction_The_scope_and_ambition_for_action.pdf (Accessed 15/06/2018)

¹² Guidance for Traders on Pricing Practices, Chartered Trading Standards Institute, 2016. <https://www.businesscompanion.info/sites/default/files/Guidance-for-Traders-on-Pricing-Practices-Apr-2018.pdf> (Accessed 22/10/2018)

7. The second category of price promotions is reference pricing, i.e. pricing that demonstrates good value by referring to another price, typically of higher value. This category includes:
 - Was/now prices - which compare an advertised price to a price the retailer has previously charged,
 - After promotion or introductory prices - which compare the current price to a price that the retailer intends to charge in the future,
 - Recommended retail prices (RRP) - which compare the advertised price to one recommended by the manufacturer or supplier and,
 - External reference prices - which compare an advertised price to a price charged by another retailer for the same product.
8. For the purposes of this Impact Assessment, we use price promotions to cover all types of promotional offers on food and drink, temporary price reductions (price cuts) to describe all promotions falling under the reference pricing category above and volume promotions to describe all volume offers.

Rationale for intervention

9. Individuals only face some of the costs associated with ill health as universal healthcare ensures the financial costs are borne by the taxpayer. Consequently, the health costs associated with excess calorie consumption are passed on to society and are not just experienced by the individual. In economic terms, this is referred to as a negative externality.
10. An individual is likely to make decisions based only on the costs they face. When a negative externality is present, the market fails to operate efficiently because the social costs are greater than the personal costs and therefore not considered in an individual's decision making at the margin.
11. This negative externality gives a rationale for intervention, but it is not immediately clear what form this intervention should take. Imposition of a tax equal to the cost currently faced by society would reduce calorie consumption to the socially optimal level. However, the complexity of the relationship between food purchases and obesity makes the correct implementation of such a tax difficult. A certain level of food consumption is entirely necessary, so many food purchases will have no relationship to excess weight gain. Therefore, a general tax on food purchases, whether on price or calorie content, would be unable to target only excess calorie consumption.
12. Furthermore, if individuals fail to consider the future outcomes of their actions, they may take decisions which result in weight gain and future ill health. There is evidence to suggest that not only may this be the case for some people¹³, but that many people's attitudes when considering the future are irrational¹⁴. While it is not clear how a policy could easily correct for this, there are certain behavioural factors that are open to intervention.
13. Many different cues can affect food and drink purchases. It is clear from academic evidence that marketing and promotions in stores are extensive and effective at influencing food preferences and purchases¹⁵. Price promotions are a significant feature of food purchasing and are employed to encourage shoppers to make certain buying choices. Fundamentally, these promotions result in additional sales relative to undiscounted prices. The main reason for this is a combination of the temporary nature of these promotions and the reduction in prices they create. This in itself is no reason to intervene in the market and merely represents markets reacting as expected. It is how these promotions impact on food consumption decisions, which results in poor health outcomes.
14. When considering the decision in isolation, it appears perfectly rational for an individual to purchase a greater quantity of a product when it is on promotion. Furthermore, for some promotions, such as temporary price reductions, consumers can choose whether they purchase more and stockpile their additional purchases or simply benefit from the lower price. For volume offers – such as multi-buy

¹³ Komlos J, Smith PK, Bogin B. (2004) Obesity and the rate of time preference: is there a connection? *Journal of biosocial science*, Mar;36(2):209-19.

¹⁴ Thaler RH, Sunstein CR. (2003) Libertarian paternalism. *The American Economic Review*, 2003 May 1;93(2):175-9.

¹⁵ Public Health England (2018) Sugar Reduction: The evidence for action, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/470179/Sugar_reduction_The_evidence_for_action.pdf (Accessed 15/06/2018)

promotions – some degree of stockpiling is necessary to benefit. While the latter of these will result in a greater degree of stockpiling, both result in increased purchases and stockpiling.¹⁶

15. Studies have considered the impact of stockpiled food on levels of consumption¹⁷. When large or moderate amounts of convenient ready-to-eat foods were stockpiled in people's homes, consumption was found to be substantially greater in homes with large stockpiles over the first week. Once the relative difference in the quantity available within homes had fallen, this difference disappeared.¹⁸ This increased consumption is thought to occur due to the increased visibility of stockpiled foods, not least because they are often stored in visible locations within the home.
16. While people may therefore purchase promoted items on the assumption that the additional quantity bought will be offset by reduced purchases later, this does not consider the subconscious decision to consume more when more is available. This can lead to increases in consumption frequency and the quantity eaten.¹⁹ Both of which could lead to excess calorie consumption.
17. It is difficult to associate the purchase of a single food item with excess calorie consumption. Individual products are not usually bought in an isolated decision-making process but as part of an overall attempt to satisfy a person's dietary requirements. However, certain goods are associated with a greater propensity to create impulse purchases²⁰ and act as a greater contributor to weight gain²¹.
18. Although some HFSS products²² will be purchased as part of a balanced diet and not contribute to obesity, they nevertheless represent the most focused group of products to target to reduce excess calorie consumption while minimising the impact on the wider market.

Impact on children

19. As mentioned previously, 16% of children aged 2-15 are considered obese. Furthermore, the burden of childhood obesity is being felt the hardest in more deprived areas with children growing up in low income households more than twice as likely to be obese than those in higher income households²³. These rates are unacceptably high. Obesity in childhood directly affects physical and mental health, and is associated with an increased risk of obesity in adulthood²⁴ when the majority of costs due to obesity occur. Although food habits are not perfectly stable over the life course, there is considerable scope for influencing lifetime habits by intervening in children²⁵. Adjusting the consumption patterns of children therefore offers substantial benefits in the long term.
20. Children are uniquely vulnerable to the techniques used by marketers to promote sales²⁶, a fact that marketers have responded to in the past by significantly increasing advertising budgets for products

¹⁶ Public Health England (2015) Sugar Reduction: The evidence for action - Annexe 4: An analysis of the role of price promotions on the household purchases of food and drinks high in sugar, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/470175/Annexe_4_Analysis_of_price_promotions.pdf (Last accessed 13/09/2018)

¹⁷ Girju, Marina and Ratchford, Mark, The Influences of Portion Size, Context and Package Characteristics on Snack Food Consumption: Evidence from a U.S. Rolling Cross-Sectional Survey (April 19, 2016). Available at SSRN: <https://ssrn.com/abstract=2664375> or <http://dx.doi.org/10.2139/ssrn.2664375> (Last accessed 15/11/2018)

¹⁸ Chandon P, Wansink B. (2002) When are stockpiled products consumed faster? A convenience-salience framework of post-purchase consumption incidence and quantity. *J. Mark. Res.* 39:321–35

¹⁹ Ibid.

²⁰ Muruganantham G, Bhakat RS. (2013) A review of impulse buying behavior. *International Journal of Marketing Studies*, 2013 Apr 22;5(3):149.

²¹ Mendoza JA, Drewnowski A, Christakis DA. (2007) Dietary energy density is associated with obesity and the metabolic syndrome in US adults. *Diabetes care*. 2007 Apr 1;30(4):974-9.

²² For a definition of high in fat, salt and sugar (HFSS) products see [Annex B – HFSS Definition](#)

²³ NHS Digital (2017) National Child Measurement Programme 2016/17

²⁴ Singh AS, Mulder C, Twisk JW, Van Mechelen W, Chinapaw MJ. (2008) Tracking of childhood overweight into adulthood: a systematic review of the literature. *Obesity reviews*. 2008 Sep 1;9(5):474-88.

²⁵ Hursti UK. Factors influencing children's food choice. *Annals of medicine*. 1999 Jan 1;31(sup1):26-32.

²⁶ Carter OB, Patterson LJ, Donovan RJ, Ewing MT, Roberts CM. (2011) Children's understanding of the selling versus persuasive intent of junk food advertising: Implications for regulation. *Social Science & Medicine*. 2011 Mar 31;72(6):962-8.

aimed at children²⁷. These effects can be transmitted into the purchasing behaviours of parents through 'pester power'²⁸.

21. Academic studies provide evidence that food promotion does encourage children to pester their parents to purchase specific foods, particularly HFSS products²⁹. A study into Australian parent's experiences of food marketing directed towards children, for example, found that most of the items requested by children were HFSS products and 70% of parents purchased at least one food item requested during the shopping trip³⁰. Furthermore, parents may not fully realise the extent to which their purchases are driven by prompts from children, with an observational study finding that children trigger twice as many purchases as parents realised³¹.

Policy objective, context and options

Policy objective

22. The restriction of volume promotions on HFSS food and drinks is intended to:

- Reduce additional purchases of products likely to lead to excess weight gain, while minimising the distortionary effect on purchases of foods that do not contribute to obesity;
- Encourage stores to offer promotions on healthier products, thus providing a double win for dietary improvements;
- Create a level playing field in which stores that make voluntary progress are no longer penalised;
- Assist the wider childhood obesity strategy to reduce circumstances currently contributing to the obesogenic environment.

Policy context

23. This proposed restriction on volume promotions is part of a wider set of policies included in the Government's Childhood obesity: a plan for action – Chapter 2. The plan sets out the Government's national ambition to halve childhood obesity by 2030 and significantly reduce the obesity prevalence gap between children from the most and least deprived areas³². The proposals outlined in Chapter 2 include consulting on mandatory calorie labelling in the out-of-home sector, ending the sales of energy drinks to children, encouraging further action in local areas and in schools and further restrictions on the marketing of products high in fat, salt, or sugar (HFSS) to children. The proposed policies will help parents make the best decisions for their families by changing the food environment, so that healthier choices become the easiest choices.

24. In August 2016, the Government launched the first part of its plan for action³³. This comprehensive plan aims to help children and families make healthier choices and be more active. Key measures in the plan included a Soft Drinks Industry Levy (SDIL), a sugar and calorie reduction programme, and a

²⁷ Linn S, Novosat CL. (2008) Calories for sale: food marketing to children in the twenty-first century. *The ANNALS of the American Academy of Political and Social Science*. 2008 Jan;615(1):133-55.

²⁸ Marshall D, O'Donohoe S, Kline S. (2007) Families, food, and pester power: beyond the blame game? *Journal of Consumer Behaviour*. 2007 Jul 1;6(4):164-81.

²⁹ McDermott L, O'Sullivan T, Stead M, Hastings G. (2006) International food advertising, pester power and its effects. *International Journal of Advertising*. 2006 Jan 1;25(4):513-39.

³⁰ Campbell S, James EL, Stacey FG, Bowman J, Chapman K, Kelly B. (2012) A mixed-method examination of food marketing directed towards children in Australian supermarkets. *Health promotion international*. 2012 Nov 15;29(2):267-77.

³¹ Ebster C, Wagner U, Neumueller D. (2009) Children's influences on in-store purchases. *Journal of Retailing and Consumer Services*. 2009 Mar 31;16(2):145-54.

³² DHSC (2018) Childhood obesity: a plan for action, chapter 2, <https://www.gov.uk/government/publications/childhood-obesity-a-plan-for-action-chapter-2> (last accessed 10/09/2018)

³³ DHSC (2016) Childhood obesity: a plan for action, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/546588/Childhood_obesity_2016_2_acc.pdf (last accessed 10/09/2018)

commitment to helping children enjoy an hour of physical activity every day. Chapter 2 builds on the first chapter of the plan, both to cement the action already taken, and to act in other areas.

25. The SDIL has been designed to incentivise reformulation and is charged on drinks with a total sugar content of 5 grams or more per 100 millilitres, with a higher charge for drinks that contain 8 grams or more sugar per 100 millilitres. The levy came into force in April 2018 and has already resulted in over 50% of manufacturers reducing the sugar content of their drinks, equivalent to 45 million kilogrammes of sugar every year.
26. As part of the wider reformulation programme, in August 2017 Public Health England announced an extensive calorie reduction programme³⁴. This programme aims to remove excess calories from foods that children eat most, helping to make the healthy choice the easy choice for consumers. The calorie reduction programme challenges the food industry to achieve a 20% reduction in calories by 2024 in product categories that contribute significantly to children's calorie intakes and where there is scope for substantial reformulation and/or portion size reduction. This requires work to be undertaken by retailers and manufacturers, restaurants, pubs, cafes, takeaway and delivery services and others in the eating out-of-home sector. The products covered by the programme include ready meals, pizzas, meat products, savoury snacks, sauces and dressings, prepared sandwiches and other "on the go" foods.
27. A range of policies are being proposed because the "causes of obesity are embedded in an extremely complex biological system, set within an equally complex societal framework"³⁵ to which there is no single, simple solution. The size of the problem has led to its normalisation and the inability of many people to judge their own weight accurately. A survey of obese adults in Great Britain found that only 58.6% of women with a BMI of 35+ (morbidly obese) identified themselves as 'very overweight' or 'obese', with just 42.4% of equivalent men doing so³⁶.
28. Although people have difficulty identifying obesity as an issue at a personal level, the public recognises the problem at a national level. Obesity is reported as the second biggest health problem facing people today, with 35% of people identifying it as an issue – only 1% less than cancer. Additionally, 19% of people now report diabetes as a major issue – up from just 10% in 2010³⁷.
29. There has been significant engagement and work with industry to enable people to adopt healthier diets over recent years. As part of the Public Health Responsibility Deal (RD), for example, the food industry was challenged to take voluntary action on food promotions, including the placement of confectionery at checkouts and increasing the promotion of healthier foods. Some approaches included:
 - Retailers removing sweets from their checkouts (Lidl, Aldi, Tesco; Marks and Spencer announced removal of the 'guilt tills' in July 2015).
 - Retailers taking voluntarily action on discounting and price promotions. For example, Sainsbury's has moved away from multi-buy offers, and committed to using their store layouts to promote healthier diets, including the use of end-of-aisle.
30. Voluntary efforts by industry were shown to work best when a consistent approach was adopted across the sector. However, many initiatives on promotions were often short lived and only taken forward by a small number of organisations.
31. When organisations and trade bodies were approached to take more consistent and concerted action, they advised that a voluntary approach on promotions would not be feasible, and that regulation to ensure a level playing field would be required. This experience has shown that these initiatives require comprehensive participation and might be too commercially sensitive or complex for voluntary initiatives to be effective.

³⁴ Public Health England (2018) Calorie reduction: The scope and ambition for action. <https://www.gov.uk/government/publications/calorie-reduction-the-scope-and-ambition-for-action> (last accessed 14/09/2018)

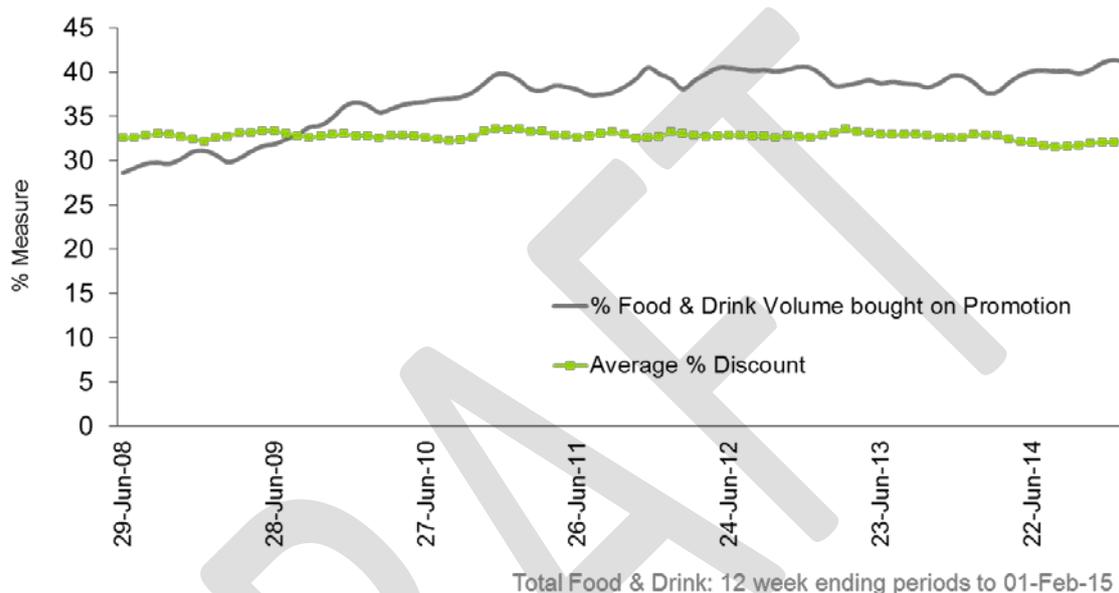
³⁵ Government Office for Science (2007) Tackling Obesity: Future Choices – Project report, <https://www.gov.uk/government/publications/reducing-obesity-future-choices> (last accessed 08/09/2018)

³⁶ Do weight perceptions among obese adults in Great Britain match clinical definitions? Analysis of cross-sectional surveys from 2007 and 2012, Johnson et al, BMJ Open 2014

³⁷ Public Perceptions of the NHS and Social Care - Winter 2014: Ipsos MORI report for the Department of Health, <https://www.gov.uk/government/publications/public-perceptions-of-the-nhs-and-social-care-winter-2014> (last accessed 14/09/2018)

32. During extensive discussions with industry, competition law issues were raised as a barrier to retailers tackling price promotions such as buy one, get one free and similar offers for HFSS products. Considering these views, it was concluded that an effective approach for promotion activities is not possible within a voluntary framework, given the need for a whole-market solution.
33. Figure 1 below shows the extent and depth of UK price promotions (both volume promotions and temporary price cuts) over time. Promotional activity expanded substantially during the recession as retailers aggressively competed to attract price sensitive consumers. Levels of promotion remained high after the recession - in the 12 weeks ending 1st February 2015, 41% of shopper expenditure was recorded on some form of price promotion, with an average discount of just below 33%. These figures suggest that the volume of food and drink bought on promotion in the UK is substantially higher than in other countries. Promotional levels for groceries in countries such as Germany, France and Spain are in the order of 20% of shopper expenditure, so approximately half that seen in the UK.³⁸

Figure 1: Promotional breadth and depth over time (take home food and drink)



34. These findings are supported by a report from Food Standards Scotland, which found that price promotions account for around 40% of all food and drink take home expenditure in Scotland³⁹. Furthermore, their results also suggested that 40% of calories and 42% of total fat and saturated fat are purchased on promotion.

Policy Options

35. As mentioned above, our aim is to reduce overconsumption of HFSS products but also to encourage businesses to promote healthier products and to further incentivise reformulation. Therefore, we are open to alternative suggestions from stakeholders on the best way to implement this policy to achieve these aims. For example, we have explored the possible impact of requiring retailers to ensure that at least 80% of their sales from volume based price promotions on all food and drink per year are on healthier products.
36. This impact assessment includes modelling of a range of regulatory options on restricting promotions of HFSS products using volume promotions. Through this modelling we established the two best options to pursue and seek stakeholders views on. We are only consulting on these two options (Option 3 and Option 4 in this document). Non-regulatory options have been investigated but are not considered sufficient to achieve the policy objectives. The options analysed in the IA are:

³⁸ Public Health England (2015) Sugar Reduction: The evidence for action - Annexe 4: An analysis of the role of price promotions on the household purchases of food and drinks high in sugar, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/470175/Annexe_4_Analysis_of_price_promotions.pdf (Last accessed 13/09/2018)

³⁹ Food Standards Scotland (2016) Foods and drinks purchased into the home in Scotland using data from Kantar Worldpanel, http://www.foodstandards.gov.scot/downloads/Food_and_Drinks_Purchased_into_The_Home_in_Scotland_report.pdf (Accessed 18/07/2018)

Option 1 - Do nothing

Option 2 - End all volume offers for HFSS products in retailers and the out-of-home sector. This includes free refills of sugar-sweetened beverages (SSBs), if they are in scope of the SDIL.

Option 3 - End all volume offers for HFSS products included in Public Health England's sugar and calorie reduction programme and the SDIL in retailers and the out-of-home sector. Including, free refills of SSBs.

Option 4 – No more than 20% of sales from volume offers on food and drink per year can come from HFSS products included in Public Health England's sugar and calorie reduction programmes and the SDIL.

37. A preferred option has not been chosen. This choice will be informed by the consultation exercise. For the purposes of this document only (to aid clarity by contrasting against a single option), Option 3 is presented as the preferred option. Option 3 is better targeted at the products that contribute the most sugar and calories to children's diets compared to Option 2 and delivers more benefits than Option 4. Furthermore, although temporary price reductions do lead to excess sales, they are more likely to be used as attempts to save money.
38. The Department of Health and Social Care (DHSC) is committed to undertaking an evaluation of these regulations before 2023. The specifics of this evaluation will be developed following the consultation phase of this Impact Assessment.

Option 1 – Do nothing.

39. This is the do-nothing scenario against which all other options are compared. This assumes no changes in age-specific rates of overweight and obesity, but does assume that the average BMI of cohorts of individuals increases over time as the cohorts age. This increase in average BMI has been based on current trends⁴⁰. Under the do-nothing scenario, a limited number of supermarkets would continue to voluntarily limit the promotion of certain HFSS products and those not currently restricting promotions would be expected to continue doing so.
40. Due to the considerable number of uncertainties which would need to be considered, the do-nothing scenario in this Impact Assessment does not attempt to quantify the future impact of the policies already announced or any other possible future actions by government. Furthermore, the interactions of implementing multiple policies at once are also not assessed under our estimates, but these effects are examined in the 'Interaction of policy effects' section.

Option 2 – End all volume offers for HFSS products in retailers and the out-of-home sector. Including free refills of sugar-sweetened beverages.

41. Under Option 2, retailers and out-of-home food businesses would be prevented from using volume offers to promote HFSS food and drink products. Unlimited refills of sugar-sweetened beverages available in the out-of-home sector would also fall within scope of these restrictions. Here, sugar-sweetened beverages would be those included in the SDIL.
42. It is not our intention or the aim of this policy to make it more expensive for families eating out as a treat. We recognise that the way consumers respond to promotions in retail settings and out of home settings is different. Promotional offers in out of home settings are generally targeted to multiple individuals eating out together as a group for example. Therefore, we are not intending to target promotion offers for meals in the out of home sector such as 'kids eat free'. However, volume promotions for pre-packaged HFSS items, such as chocolate bars, and unlimited refills of sugar-sweetened beverages would be restricted.
43. Our intention is to define HFSS products using the 2004/5 Nutrient Profiling Model (NPM), which differentiates foods based on their nutritional composition (see [Annex B – HFSS Definition](#) for more

⁴⁰ Ara R, Blake L, Gray L, Hernández M, Crowther M, Dunkley A, Warren F, Jackson R, Rees A, Stevenson M, Abrams K. (2012) What is the clinical effectiveness and cost-effectiveness of using drugs in treating obese patients in primary care? A systematic review. Health technology assessment (Winchester, England). 2012;16(5):iii.

details). To assist retailers the Department of Health and Social Care would provide guidance and a methodology to help identify which products can or cannot be part of a volume promotion.

44. As part of the consultation, we will consider whether to exclude loose food items. 'Loose food items' would include all food which is not pre-packaged. The rationale for possibly excluding these items is that it may be impractical for businesses to comply with this policy when nutritional information is not available on pack for certain products, as businesses are not currently required to provide nutritional information on these products⁴¹.
45. Additionally, we will consider whether to exclude micro businesses and stores that exclusively sell HFSS goods, such as chocolatiers from the policy. This is because it is likely that the burden of complying with these regulations will be disproportionately high for these businesses. For the purposes of this Impact Assessment we have assumed these businesses would be excluded and defined micro businesses as those with 10 or less full time equivalent employees⁴².
46. A ban on volume offers would not affect businesses ability to use temporary price reductions to promote HFSS products. This recognises that volume offers are most closely linked to the excess purchase of HFSS products and temporary price reductions are more likely to be used by consumers to save money.
47. There are likely to be various complexities in defining and implementing restrictions on price promotions. Our considerations in the following assume that these are successfully overcome.

Option 3 – End all volume offers for HFSS products included in Public Health England's sugar and calorie reduction programmes and the SDIL in retailers and the out-of-home sector.

48. Under Option 3, retailers and out-of-home food businesses would be prevented from using volume offers to promote HFSS products included in Public Health England's sugar and calorie reduction programmes, as well as any drinks within the scope of the SDIL. A list of the product categories included in this option can be found in [Annex D](#).
49. The same exclusions discussed above for Option 2 would also apply to Option 3. Furthermore, as with Option 2, temporary price reductions for these products would continue to be permitted.
50. Including the products in the sugar and calorie reduction programmes and drinks within the scope of the SDIL targets the products that contribute the most sugar and calories to children's diets, while also minimising costs to business.

Option 4 – No more than 20% of sales from volume offers on food and drink per year come from HFSS products included in Public Health England's sugar and calorie reduction programmes and the SDIL.

51. Under Option 4, retailers and out-of-home food businesses would be required to ensure that no more than 20% of their sales from volume offers on food and drink per year come from HFSS products covered by Public Health England's sugar and calorie reduction programmes, as well as any drinks within the scope of the SDIL. The remaining 80% can come from non HFSS products included in Public Health England's reformulation categories and in the SDIL, or from any other food or drink product outside the scope of Public Health England's reformulation categories and the SDIL whether they are considered HFSS or non HFSS.
52. We have assumed the restrictions will be based on total sales, rather than a count of discrete volume offers run by businesses. This takes into account the fact that some promotions will be more successful than others.
53. The same exclusions discussed above for Option 2 would also apply to Option 4. Furthermore, as with Option 2, temporary price reductions for these products would continue to be permitted.

⁴¹ Department for Environment, Food & Rural Affairs (2017) Food labelling: loose foods, <https://www.gov.uk/guidance/food-labelling-loose-foods> (Last accessed 13/09/2018)

⁴² There are other possible approaches to defining 'micro businesses', including total floor space, number of employees or turnover.

Alternative Options Considered

54. In addition to the policy options above, several other options to achieve the policy objectives have been considered and discounted. The table below sets out these alternative options. We will consider evidence from the consultation and assess if these need revisiting.

Option	Consideration
Using the front of pack nutrition labelling scheme to define HFSS food and drink – only allowing promotions of products that have a combination of green and amber ratings	<ul style="list-style-type: none"> The front of pack scheme was designed and intended to be a voluntary scheme. Using this model to define HFSS products for the purposes of this policy would mean using a voluntary scheme as mandatory and part of a legislative approach. The front of pack scheme rates products based on levels of specific nutrients rather than giving an overall score. As a result, it does not consider the overall nutritional content of products in the same way as the Nutrient Profile Model (NPM). Therefore, it would not give products a representative and appropriate scoring for the purposes of this policy.
A voluntary ban on promotions of HFSS food and drink	<ul style="list-style-type: none"> Voluntary action on restricting price promotions of HFSS products was not possible through the voluntary Public Health Responsibility Deal. Feedback from industry was that a voluntary approach is not feasible and a legislative approach is needed for consistent action across the retail sector. A voluntary approach would not promote a level playing field among retailers or between the retail and out of home sectors, and may penalise forward thinking businesses who may want to take action in this space.
Restricting temporary price reductions in addition to volume based (multibuy) promotions	<ul style="list-style-type: none"> Temporary price reductions do not require consumers to purchase more than they may need or more than they intended in the first place to take advantage of the discount being offered. As a result, these types of promotions do not incentivise over purchasing and overconsumption in the same way as volume based promotions (such as multibuy offers). It is not the intention of this policy to increase the cost of households shopping baskets. Restricting temporary price reductions may lead to increases in the price of food and drink, which would likely have a larger impact on households from lower socio-economic backgrounds who tend to spend a greater proportion of their incomes on food.

List of proposed exclusions

55. As mentioned above we will consider the following exclusions during the consultation:

- Businesses that exclusively sell HFSS products, such as chocolatiers and ice cream parlours.
- Loose food items, this includes all food which is sold loose and not pre-packaged, such as unpackaged bakery products and volume promotions for meals in the out-of-home sector such as 'kids eat free'.
- Option 3 also excludes products that are not included in Public Health England's sugar and calorie reduction programme and the SDIL. A detailed explanation of the food and drink items included in these programmes can be found in Annex D .

- These restrictions would not apply to temporary price reductions and any other promotions that are not linked to the purchase of a higher volume.
- Businesses that have fewer than 10 full time equivalent employees.

Impact of promotions on sales and profits

Impact of price cuts and multi-buy promotions on sales

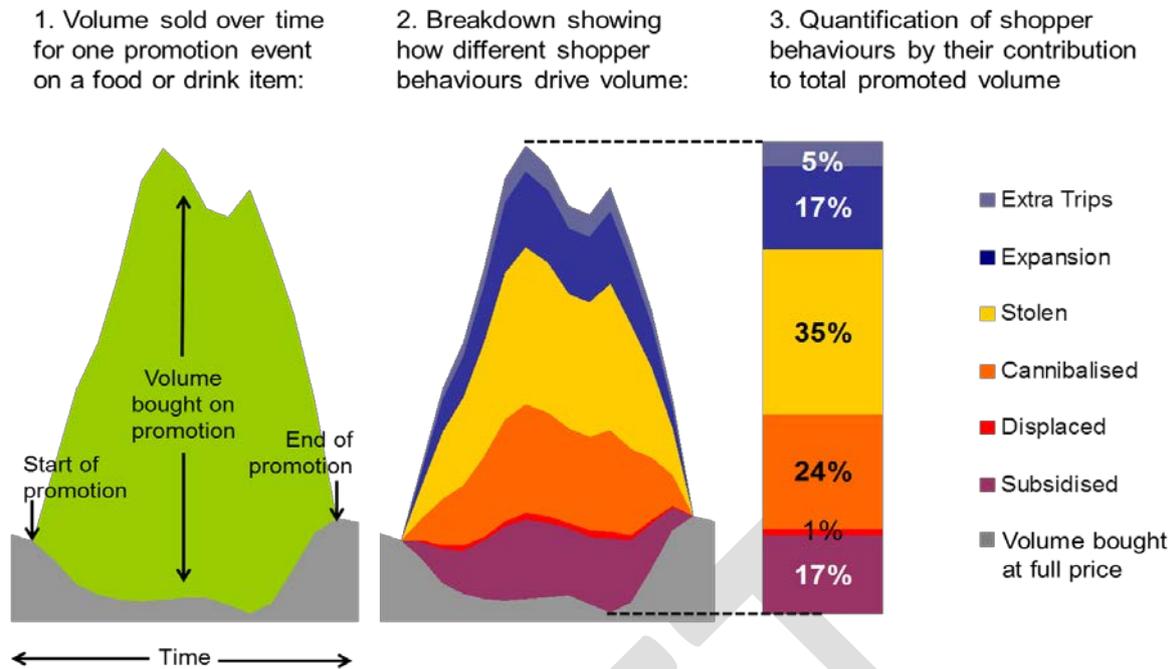
56. Public Health England commissioned Kantar Worldpanel to investigate the role that price promotions play in stimulating changes in purchasing levels, specifically for foods and drink containing high levels of sugar⁴³. This study examined Kantar Worldpanel's representative sample of 30,000 British households over 2 years to the 1st February 2015.
57. It should be noted that only price promotions occurring in the 'Big Four' supermarkets – Tesco, Asda, Sainsbury and Morrison's were included in this analysis. As a result, this assessment refers only to a subset of the overall retail market. Together, these four supermarkets comprise approximately 70% of the grocery market⁴⁴.
58. The Kantar Worldpanel data splits price promotions into temporary price reductions (TPR), multi-buy and extra free. Regarding the types of promotions discussed earlier, multi-buy in the Kantar Worldpanel data covers multi-buys, combination offers and linked offers, which are all forms of volume offers. Temporary price restrictions covers was/now prices and after promotion or introductory price offers. Extra free is the same under both definitions.
59. Analysis from the Kantar Worldpanel data suggests that the impact of price promotions is inherently short term. "Promotions generate short term uplifts in sales by encouraging promotionally motivated shoppers to participate. In effect, promotions are a means of buying market share amongst promotionally sensitive shoppers. These effects are always short term, in the sense that the sales uplift falls away as soon as the promotion ends to invariably leave a brand selling at the same levels seen prior to the promotion. In the Fast-Moving Consumer Good (FMCG) marketing environment this fact is not always well understood and plenty of myths abound about the desired role of promotions in convincing shoppers to switch brands permanently after a discounted trial. Numerous promotional studies undertaken by Kantar Worldpanel in a wide range of categories have provided no reliable evidence to support this view."
60. As it does not appear that price promotions have any long-term effects, it is important to assess the impact that promotions have on short terms sales uplifts. Figure 2 below displays the estimated breakdown in uplifted sales volumes during a price promotion, as estimated by Kantar Worldpanel.

Figure 2: A decomposition of the typical food & drink promotion⁴⁵

⁴³ Public Health England (2015) Sugar Reduction: The evidence for action - Annexe 4: An analysis of the role of price promotions on the household purchases of food and drinks high in sugar
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/470175/Annexe_4_Analysis_of_price_promotions.pdf (Last accessed 13/09/2018)

⁴⁴ Kantar Worldpanel (2018) Grocery Market Share <https://www.kantarworldpanel.com/en/grocery-market-share/great-britain> (Accessed 13/09/2018)

⁴⁵ Public Health England (2015) Sugar Reduction: The evidence for action - Annexe 4: An analysis of the role of price promotions on the household purchases of food and drinks high in sugar
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/470175/Annexe_4_Analysis_of_price_promotions.pdf (Last accessed 13/09/2018)



61. The constituent classifications are defined as:

- *Subsidised* – represents the volume of the promoted product that shoppers would have been expected to buy at the time of the promotion, in the same store, irrespective of whether there was a promotion or not.
- *Displaced* - is the volume of the product that would have been purchased in subsequent weeks in the same store. These purchases have been brought forward.
- *Cannibalised* - is the volume that would have come from sister products within the promoting manufacturers' portfolio e.g. swapping between flavours within the same brand.
- *Stolen* – represents the volume that is taken from competitor products e.g. Pepsi stealing sales from Coca Cola.
- *Expansion* - represents growth from faster than expected return times to the category after a shopper participates in a promotion. This expansion effect is caused by shoppers purchasing above average quantities of the category that is then not fully offset by delayed repurchase.
- *Extra Trips* - are unexpected purchases that appear to have been motivated by the promotion.

62. Only the expansion and extra trips categories represent real growth in the overall volume, with all the other categories being made up of sales that would have occurred anyway but perhaps on different products or brands.

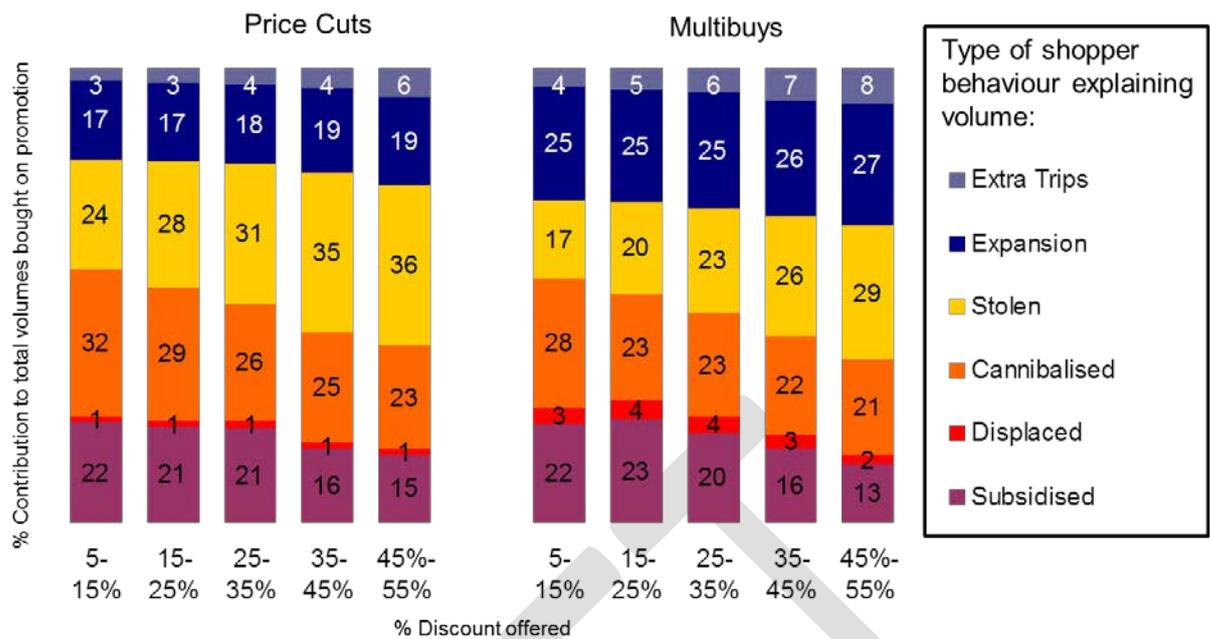
63. This data above shows that 59% of the volume bought on promotion is accounted for by product switching, with a further 18% either being subsidised or brought forward consumption. The remaining 22% of sales volume represent the net growth in sales.

64. While this clearly displays uplifted sales within product categories, it is possible that consumers respond by reducing consumption of goods from other categories. To examine this, Kantar assessed the correlation between sales volumes of competing and complementary product categories. Overall, positive correlations were found between different categories of high sugar products, for example chocolate confectionary and sugar confectionary. In contrast, negative correlations were more often found between 'unhealthier' products such as chocolate and those with healthier characteristics such as fruit and salad.

65. Based on this analysis, it appears unlikely that, for products with high sugar content, the uplift in sales generated by price promotions would be offset by a reduction in sales of other products with high sugar content.

66. Figure 2 assesses the average impact of a price promotion on short-term sales. However, we would not expect individuals to respond to a temporary price restriction (TPR) in the same manner as a multi-buy promotion. Figure 3 displays the estimated breakdown in uplifted sales volume during price cuts and multi-buys, split by the size of discount offered.

Figure 3: Promotional volume percentage decomposition by type of price promotion and size of discount⁴⁶



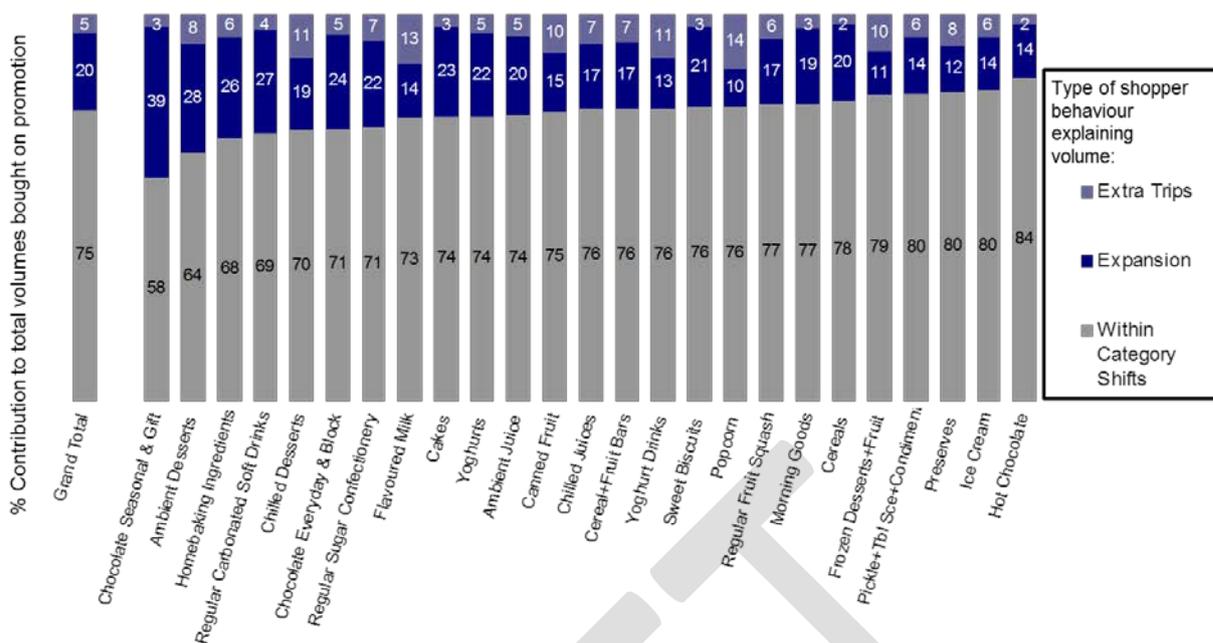
67. Here we can see that for both types of promotion, as the size of the discount increases, so does the proportion of sales that are extra trips or expansion (i.e. additional sales to the product category). Furthermore, multi-buys result in a greater proportion of additional sales than price cuts. This is expected, as consumers are required to purchase additional quantities of the product to benefit from the discount.

68. Figure 3 provides the decomposition of price promotion and size of discount. When this is split by product category, as in Figure 4, it is possible to see that there is a reasonable amount of variation between different product categories. Incremental sales tend to be highest among higher sugar categories where products are more discretionary or treat and special occasion oriented. For example, notable instances are pre-prepared desserts, confectionery, soft drinks, and cake making ingredients. This is supported by evidence from Scotland, which found that “discretionary, less healthy food and drink categories are more frequently purchased on promotion compared to the staple, healthier categories”⁴⁷.

⁴⁶ Public Health England (2015) Sugar Reduction: The evidence for action - Annexe 4: An analysis of the role of price promotions on the household purchases of food and drinks high in sugar https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/470175/Annexe_4_Analysis_of_price_promotions.pdf (Last accessed 13/09/2018)

⁴⁷ Food Standards Scotland (2016) Foods and drinks purchased into the home in Scotland using data from Kantar Worldpanel, http://www.foodstandards.gov.scot/downloads/Food_and_Drinks_Purchased_into_The_Home_in_Scotland_report.pdf (Last accessed 13/09/2018)

Figure 4: Category incremental proportions for promotions on higher sugar categories⁴⁸

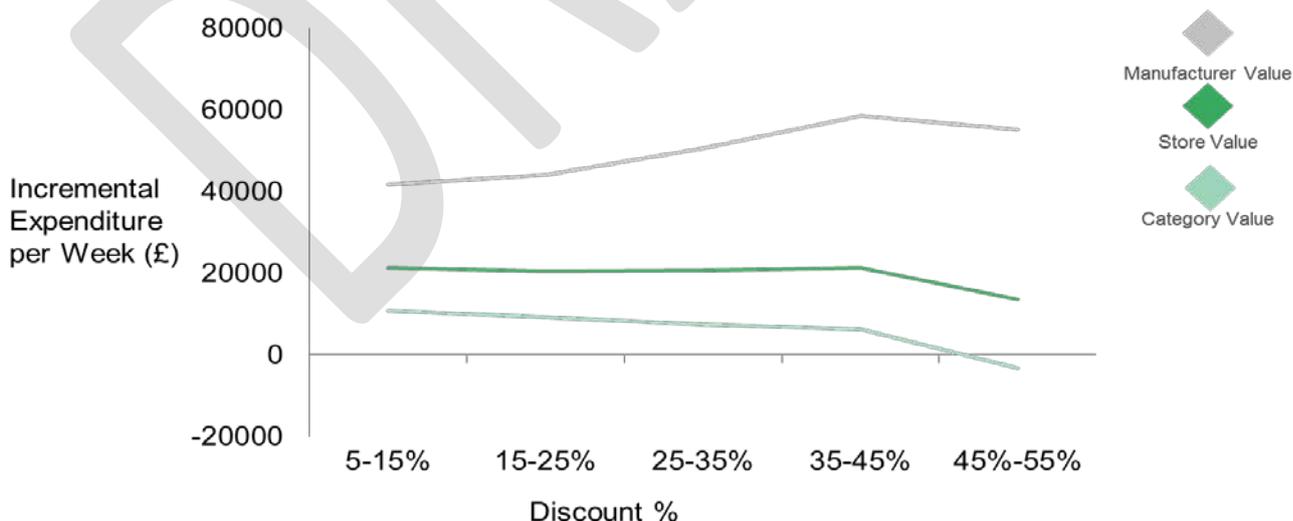


Impact of promotions on manufacturer and retailer profits

69. Individual promotions deliver clear increases in product sales for manufacturers and retailers. However, promotions for a specific brand do not occur in isolation – they form part of a product category in which all other brands will be expected to discount in a similar fashion. This ‘stolen’ volume does not therefore represent a true gain to manufacturers, as this would be expected to be offset by having future sales volumes stolen by other discounting brands. For retailers, the competition between different manufacturers within product categories is less important, as stores stocking a range of brands will simply rely on sales of the product category as a whole.

70. Kantar assessed the impact of how differing levels of discount affect manufacturer revenue, store revenue and category revenue. These results are summarised in Figure 5 below.

Figure 5: Average impacts on shopper expenditure by discount⁴⁹



71. Regardless of the level of discount offered, manufacturers and stores typically see increased revenue from implementing a price promotion. However, once discounts reach 45-55%, revenue for the product

⁴⁸ Public Health England (2015) Sugar Reduction: The evidence for action - Annexe 4: An analysis of the role of price promotions on the household purchases of food and drinks high in sugar https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/470175/Annexe_4_Analysis_of_price_promotions.pdf (Last accessed 13/09/2018)

⁴⁹ Ibid.

category actually decreases. Kantar estimate that this reduction in category expenditure occurs for approximately 4 out of every 10 promotions.

72. With 4 out of 10 promotions reducing category expenditure (but greatly increasing the quantity sold), there are clear pressures on retailer and manufacturer profit margins because of promotions. Losses on individual promotions might be accepted as part of wider pricing decisions and strategy. The idea of 'Loss leaders' is a well-known pricing strategy used to draw customers into stores and stimulate other sales on more profitable items. Promotions may also be necessary to ensure brand prominence within stores, with the existence of competitor promotions encouraging subsequent promotions.

Current composition of the market

Composition of the food retail market

73. The 'Big Four' retailers Tesco, Asda, Sainsbury's and Morrison's account for the majority of GB grocery sales, capturing 69.9% of the market in the 12 weeks ending 05/11/2017. Retailers outside of the top 9 identified by Kantar account for less than 5% of the market. These market shares include the sales of some non-food items such as health and beauty products. However, we expect these to be a reasonable reflection of shares within the food and drink only market. In 2014, the GB retail food market was worth an estimated £88.5bn⁵⁰.

Table 1: GB Grocery Market Shares, 12 weeks ending 05/11/17⁵¹

Tesco	28.0%
Sainsbury's	16.2%
Asda	15.3%
Morrison's	10.4%
Aldi	6.7%
The Co-Operative	6.1%
Waitrose	5.3%
Lidl	5.1%
Iceland	2.0%
Symbols & Independent	1.8%
Other Outlets	3.0%

74. Much of grocery retail spend occurs within supermarkets and hypermarkets. IGD data for 2017 shows that 'Hypermarkets & superstores' accounted for 55.4% of all grocery sales⁵². Convenience stores account for 21.7% of grocery sales, a share that has been increasing over recent years due to the continued expansion of the 'Big Four' retailers in this section of the market. Again, this definition of grocery captures non-food items. This results in a total 2017 UK market size of £184.5bn, compared to Kantar's food-specific 2014 GB estimate of £88.5bn.

Table 2: UK Grocery sales, 2017⁵³

Store Type	2017 sales, £bn	%
Hypermarkets	16.2	9%
Supermarkets	86	47%
Convenience stores	40	22%
Discounters	20.1	11%
Online	10.4	6%

⁵⁰ Kantar Worldpanel Data (2014)

⁵¹ Kantar Worldpanel (2017) Grocery Market Share (12 weeks ending) <https://www.kantarworldpanel.com/en/grocery-market-share/great-britain>

⁵² IGD (2017) <https://www.igd.com/about-us/media/press-releases/press-release/t/igd-uk-food-and-grocery-forecast-to-grow-by-15-by-2022/i/16927> (Accessed 20/11/2017)

⁵³ Ibid.

Other retailers	11.8	6%
Total	184.5	100%

75. An assessment of the size of the relevant market can be taken from IGD data on the UK grocery market. In 2017, IGD data identifies 34,609 stores involved in grocery retail. The distribution of stores, by store type, is displayed in Table 3.

Table 3: UK grocery retailers – number of stores by type, 2017⁵⁴

Convenience	13,522
Discount	4,294
Drugstores	6,501
Hypermarkets	368
Non-Grocery	1,907
Online - Grocery Retail	6
Specialist Stores & others	935
Supermarkets	4,976
Wholesale & Foodservice	2,100
Total	34,609

76. As well as the grocery and other stores listed in the IGD data, these regulations would affect several other predominately non-food retailers who offer sales of HFSS products. The Inter Departmental Business Register (IDBR) contains detailed information on the number of enterprises and local units involved in consumer retail. No systematic data exists on the extent to which non-food stores offer sales of HFSS products. A number may offer food despite having an alternate primary designation (such as newsagents), while a variety of stores may offer very limited checkout-based sales of foods. Table 4 below presents the numbers of firms for those SIC codes thought most likely to fall in scope.

Table 4: Firms (in-scope) involved in consumer food retail in England⁵⁵

SIC code and description		Total Enterprises	Micro Enterprises	Small, Medium and Large Enterprises	Local units	Local Units Excluding Micro Enterprises
4730	Retail sale of automotive fuel in specialised stores	2,095	1,455	640	3,465	2,010
4762	Retail sale of newspapers and stationery in specialised stores	2,910	2,655	255	4,815	2,160
4719	Other retail sale in non-specialised stores	5,825	5,325	520	11,665	6,340
4729	Other retail sale of food in specialised stores	3,925	3,425	500	4,835	1,410

77. We would expect most retailers categorised under codes 4730 (petrol stations) and 4762 (newsagents) to be affected by these regulations. It is possible that several firms categorised under code 4719 would also be affected. Some specialist food retailers (4729) which do not exclusively sell HFSS products would also fall in scope.

78. We would expect industry data to have the best coverage of stores belonging to medium and large food retailers; as a result, we consider the IGD figures to relate to stores that are part of a chain.

79. The calculations in this Impact Assessment assume that the IGD data fully captures all outlets belonging to large chain retailers. To account for the outlets belonging to micro businesses in the IDBR data, we assume that each micro business only has one outlet. As a result, we estimate there are approximately 1,900 predominately non-food businesses in England that would be affected by these

⁵⁴ IGD Data Centre

⁵⁵ Data from the Inter-Departmental Business Register (IDBR) can be accessed using the NOMIS service provided by the Office for National Statistics: <https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?opt=3&theme=&subgrp=>

regulations and around 11,900 predominately-non-food outlets. We aim to revise these estimates during the consultation.

Composition of the out-of-home sector

80. The size and composition of the out-of-home food market is more difficult to establish. This is partly due to the high level of business turnover in this sector, and because different data sources cover different sections of the eating out market.
81. The Inter-Departmental Business Register (IDBR) contains detailed information on the number of different enterprises (broadly fitting the description of 'businesses') and local units (broadly fitting the description of 'outlets') in the eating out market. It also provides breakdowns by the number of employees and turnover information.
82. Table 5 below presents the number of enterprises and local units for the SIC codes thought most likely to fall in scope.

Table 5: Firms involved in the out-of-home sector food market in England⁵⁶

SIC Code and description	Enterprises	Local Units
56101: Licensed restaurants	23,635	28,780
56102: Unlicensed restaurants and cafes	17,435	22,855
56103: Take away food shops and mobile food stands	29,465	31,535
56210: Event catering activities	7,615	12,675
56290: Other food service activities	1,870	9,180
56301: Licensed clubs	6,125	6,420
56302: Public houses and bars	25,790	33,045
55100: Hotels and similar accommodation	7,135	9,765
Total	119,070	154,255

83. The majority of businesses falling under SIC codes 56101 (restaurants), 56102 (cafes and coffee shops), 56103 (fast food outlets), 56290 (work canteens), 56302 (pubs and bars) and 55100 (hotels) are expected to be affected by these regulations. Most clubs and event catering activities will be unaffected by this policy. As a result, these businesses are not considered during this Impact Assessment.
84. Categorising businesses by their number of employees allows us to analyse the structure of the in scope out-of-home market. In contrast to the retail industry, the out-of-home sector in England is characterised by large numbers of micro businesses (where micro is defined as less than 10 employees). Figures from the IDBR show that approximately 75% of the out-of-home businesses impacted by these restrictions are micro businesses (Table 6).

Table 6: Number of business (enterprises) in England by SIC code and size

SIC Code and description	Micro	Small	Medium	Large	Total	% Micro
56101: Licensed restaurants	15,445	7,485	615	90	23,635	65%
56102: Unlicensed restaurants and cafes	14,315	2,805	195	120	17,435	82%
56103: Take away food shops and mobile food stands	27,095	2,140	190	35	29,460	92%
56290: Other food service activities	1,570	235	40	25	1,870	84%
56302: Public houses and bars	17,525	7,935	295	35	25,790	68%
55100: Hotels and similar accommodation	3,435	2,695	875	135	7,140	48%

⁵⁶ Data from the Inter-Departmental Business Register can be accessed using the NOMIS service provided by the Office for National Statistics: <https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?theme=49>

Total	79,385	23,295	2,210	440	105,330	75%
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85. In terms of sales, small and micro businesses together comprise 42% of turnover in the accommodation and food services sector (Table 7).

Table 7: Turnover in the 'accommodation and food services' sector in the UK by business size⁵⁷

	Micro (< 10)	Small (10-49)	Medium (50-249)	Large (250+)	Total	Small or micro	SMEs (medium, small, micro)
Turnover (£m)	21,643	19,782	13,155	43,574	98,154	41,425	54,580
% of turnover	22%	20%	13%	44%	100%	42%	56%

Costs and benefits of options

86. The benefits of restricting promotions for HFSS products are expected to accrue through:

- A reduction in excess purchases and calorie consumption, with a consequent reduction in obesity prevalence;
- A reduction in obesity related morbidity and mortality, resulting in reduced costs for the NHS and an increase in economic output;
- A potential increase in consumption of healthier items, leading to further health benefits.

87. The main categories of costs to be considered are:

- Transition costs associated with assessing products and understanding the regulation;
- Loss in profit to retailers because of reduced sales of HFSS food and drinks;
- Loss in profit to manufacturers of HFSS food and drinks because of reduced sales.

88. The magnitude of the costs and benefits could be significantly influenced by wider factors. It is possible, for example, that consumers might adjust their consumption or purchasing behaviour in response to consuming fewer calories. This type of behaviour change is a significant source of uncertainty in our analysis and could have a significant impact on the estimated net present value. As a result, we first estimate the costs and benefits of each option based on no compensation and then adjust these figures to create high, central and low scenarios based on different levels of compensation.

89. The net present values of the options are assessed over a period of 25 years. This is much longer than the typical 10-year assessment period used in impact assessments. Ill health related to being overweight or obese tends to develop later in life. Therefore, a longer period than usual has been chosen to ensure the benefits of these regulations are captured in our analysis.

Option 1 – Do nothing

90. Option 1 is the do-nothing scenario against which all other options are compared. As such, the costs and benefits are zero.

Option 2 - End all volume offers of high fat, sugar, and salt (HFSS) products in all retailers who sell food and the out-of-home sector

Costs to retailers

Transition Costs

91. Transition costs are expected to fall within two categories:

- Familiarisation;

⁵⁷ Department for Business, Energy and Industrial Strategy (2017) Business Population Estimates for the UK and regions 2017, <https://www.gov.uk/government/statistics/business-population-estimates-2017> (last accessed 14/09/2018)

- Product assessment.

92. It is important to note that the transition costs estimated here are based on several assumptions covering the time it will take for businesses to familiarise themselves with the regulations and assess products. We welcome any comments on whether our estimated costs to businesses are reasonable and hope to improve these assumptions through the consultation.

Familiarisation

93. The time taken for initial familiarisation with the scheme will vary between businesses depending on the size and scale of operations. We assume that, for small and medium businesses, it would take on average one manager one hour to read and become familiar with the regulations. It is expected that larger businesses will require more familiarisation time as different managers will need to be briefed. Therefore, we assume 15 hours of familiarisation for chain retailers. We would welcome any further evidence on this as part of the consultation.

94. The average hourly wage rate for a manager or director in retail and wholesale is £12.40⁵⁸. This is uprated by 30% to £16.12 to account for non-wage labour costs such as national insurance and pension contributions⁵⁹. The wage rate will also vary by business depending on the size and scale of the organisation. Sensitivity analysis using the maximum and minimum wage rate percentiles has been conducted to consider some of this uncertainty, the results of which are outlined below.

95. To estimate the total familiarisation costs to businesses, the uprated average hourly wage is multiplied by the number of businesses affected. We feel this is more appropriate since it is likely that promotions are decided centrally.

96. As discussed above, IGD data suggest there are 55 chain retailers operating in the market and we estimate there are a further 1,900 other businesses which would need to familiarise themselves with the regulations.

97. To take account for some of the uncertainty surrounding wage rates, sensitivity analysis has been conducted using the maximum and minimum wage rate percentiles. This indicates that initial familiarisation costs to business could range between £30k and £89k, with £44k as our best estimate.

98. Businesses will also need to brief their outlets, so they understand the new regulations. There are 41,000 chain store and other outlets that would need to be familiar with the policy. We expect that this would take one manager one hour per outlet. Consequently, the cost of sharing the information would be £662k (with a low and high estimate of £443k and £1.3m).

99. In total, familiarisation costs for retailers are estimated to be around £706k.

Product assessment

100. To comply with the regulations retailers will need to assess whether each of the products they stock is considered HFSS. To assist retailers and minimise the burden of this assessment, DHSC will provide detailed guidance and a methodology that will help businesses determine which products can or cannot be part of a volume promotion.

101. It is possible that retailers would not be required to assess every product, merely those products being considered for volume promotion at any given time. However, we assume that retailers would assess all their products to assist with promotion planning.

102. We further assume that the assessment of products will occur at enterprise rather than store level, with chain retailers able to distribute centrally calculated lists.

103. The time taken to assess products will depend greatly on the form and content of the information currently held by stores. If electronic information on the nutritional content of products is present then simple rules could be applied to this data to generate a flag for HFSS products.

⁵⁸ Annual Survey of Hours and Earnings, Provisional 2017 (provisional) data
<https://www.ons.gov.uk/file?uri=/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/occupation4digitsoc2010asheta ble14/2017provisional/table142017provisional.zip> (Table 14.6a) (Accessed 20/07/2018)

⁵⁹ This is in accordance with standard practice set out in [The Green Book](#).

104. If individual assessment is required, the cost will depend on the number of products stocked by each store. This ranges from around 2,000 Stock Keeping Units (SKUs) in discounters like Aldi and Lidl, through to 40,000 for Tesco⁶⁰. These refer to all products, including non-food items. Comparing the IGD figure for the value of the UK grocery market with the Kantar food specific figure discussed above, we assume that around 50% of these products to be food and drink items. The true number of products requiring assessment will be somewhat less than this, as a single product may have multiple SKUs (for example when a product is available in various pack sizes).
105. For the 1,900 predominately non-food businesses, such as newsagents and petrol stations, we do not have information on the number of food products stocked. We would expect the number of products stocked by these stores to be considerably smaller than a supermarket. To provide illustrative estimates, we assume these stores stock around 250 different food and drink products.
106. For the purposes of this Impact Assessment, we assume that it would take 2 minutes per product to assess and record the required outcome. This would imply 500 minutes, or around 8.3 hours of staff time for each of the non-food businesses. This assumption is used to generate an illustrative estimate of the costs, with it being recognised that this may differ from the true time required. We consider the possibility of this assessment requiring longer in the sensitivity analysis.
107. The median wage of stock control clerks and assistants in 2017 was £10.09⁶¹, giving an hourly cost to firms of £13.12 once 30% on costs are included. This implies a cost of approximately £109 per-store, and a total cost of £209k across the 1,900 non-food retailers. Further costs would then be incurred from sharing this information with individual stores. Assuming this takes 1 hour of time for a 'Manager or director in retail and wholesale' at £16.12 (including 30% on-costs) per hour for each store, distribution of this information across 11,900 stores would cost a further £192k.
108. For the larger chain retailers, we have used the IGD data⁶² to calculate the product assessment costs. For businesses operating at least one supermarket, we assume their inventories contain an average of 16,500 food products, except Tesco for whom 25,000 products are used. This results in 38 retailers needing to assess 1,000 products each, 16 assessing 16,500, and 1 assessing 25,000 products.
109. Across the 55 chain retailers identified in the IGD data, this means assessment of 327,000 products is required – taking approximately 10,900 hours and costing £143k.
110. Further, costs would then be incurred from sharing this information with individual stores. To estimate an England only cost we adjust the IGD figures using England's share of the UK population. This suggests there are approximately 29,100 chain grocery stores in England. Assuming this takes 1 hour of time for a 'Manager or director in retail and wholesale' at £16.12 (including 30% on costs) for each of the 29,100 chain stores in England, distribution of this information would cost a further £470k.
111. The total cost of assessing products is therefore £1m for all retailers in England. There may also be ongoing costs as new products are introduced. Due to a lack of data and the small nature of those costs, they remain unquantified.

- **The above calculations represent illustrative transition costs. Do these calculations reflect a fair assessment of the costs that would be faced by your organisation? (Consultation question 36)**

Reduction in retailers' profits

112. Retailers are expected to plan promotions to maximise profits. Consequently, any restriction on their ability to do this is expected to reduce profits. The methodology used to calculate the impact on retailer profits is outlined in Figure 6 below.

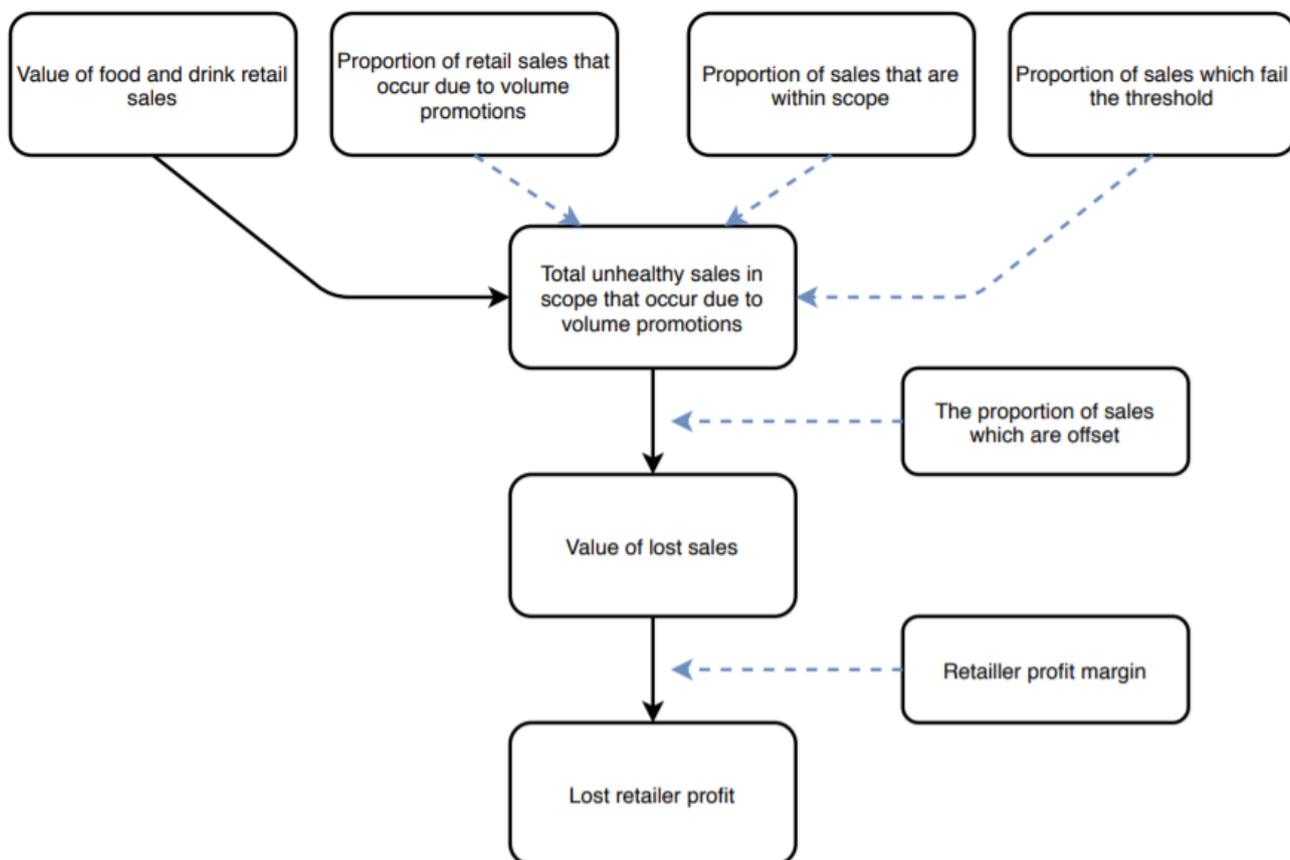
⁶⁰ USDA Foreign Agricultural Service (2016) UK Supermarket Chain Profiles 2016
https://gain.fas.usda.gov/Recent%20GAIN%20Publications/UK%20Supermarket%20Chain%20Profiles%202016_London_United%20Kingdom_12-13-2016.pdf (Accessed 29/12/2017)

⁶¹ Annual Survey of Hours and Earnings, Provisional 2017 (provisional) data
<https://www.ons.gov.uk/file?uri=/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/occupation4digitsoc2010asheta/ble14/2017provisional/table142017provisional.zip> (Table 14.6a) (Accessed 29/12/2017)

⁶² IGD Data Centre

113. The first stage involves calculating the proportion of sales that are at risk due to these regulations. In other words, we need to estimate the proportion of sales that occur due to some form of volume promotion. This is the ‘expansion’ and ‘extra trips’ categories discussed in the ‘Impact of price promotions on sales’ section above.
114. Removing the discount offered by volume promotions would increase the average price of goods and likely increase people’s expenditure on food and drink. However, this would only be the case without price adjustments by firms. Due to the highly competitive nature of the sector, we would expect retailers to subsequently reduce prices. To assess the impact of this we assume that retailers reduce average prices back to their pre-regulation level. This decrease in prices will increase demand and offset some of the sales that are at risk due to these restrictions. This would also reduce expected calorie savings compared to if average prices were to increase.
115. Once the expected value of lost sales has been estimated, we apply assumptions for retailer’s margins to calculate the impact on their profits.

Figure 6: Estimating the reduction in retailer profits



Proportion of sales which are at risk

116. We first consider the impact of removing all price promotions on sales of HFSS products. The Kantar Worldpanel analysis suggests that promotions account for approximately 39% of food and drink take home expenditure, with these products being sold at an average discount of 34%. These results are broadly consistent with those for promotions on higher sugar products only, where 43% of expenditure was on promoted products, with an average discount of 35%. As such, for HFSS products we consider the figures estimated for the entire market to be an appropriate estimate.
117. We disaggregate this spend using Kantar’s breakdown of sales due to price discounts and multi-buy promotions in Figure 3, with the multi-buy breakdown being considered a reasonable assessment of all volume based promotions. To do this we take the average for each of the classification categories in the 25-35% and 35-45% discount bands, grouping the ‘extra trips’ and ‘expansion’ categories together to estimate the total additional sales. These averages are displayed in Table 8 below.

Table 8: Promotional expenditure by source⁶³

Type of purchase	Price cuts	Multi-buys
Additional ⁶⁴	22.4%	31.8%
Stolen	32.8%	24.4%
Cannibalised	25.4%	22.4%
Displaced	1%	3.5%
Subsidised	18.4%	17.9%

118. The Kantar Worldpanel analysis shows that temporary price reductions account for 62.5% of promotions, with various forms of multi-buy mechanisms accounting for the remaining 37.5%⁶⁵. Multiplying the figures in Table 8 by these market share figures and the proportion of expenditure going through on promotion (39%) allows us to disaggregate all expenditure on HFSS products into the undiscounted and various discounted categories. The results of this calculation are displayed in Table 9 below.

Table 9: Expenditure on HFSS products by source

Type of purchase		Percentage of expenditure		Totals ⁶⁶
		Price cuts	Multi-buy	
Discounted	Additional	5.5%	4.7%	10.1%
	Stolen	8.0%	3.6%	11.6%
	Cannibalised	6.2%	3.3%	9.5%
	Displaced	0.2%	0.5%	0.8%
	Subsidised	4.5%	2.6%	7.1%
Total Discounted Expenditure				39%
Total Non-Discounted Expenditure				61%

119. This suggests that 4.7% of all expenditure on HFSS products currently occur because of volume promotions encouraging additional purchases. The first impact of a restriction on volume promotions, were prices to return to their current undiscounted levels, would therefore be to reduce expenditure on HFSS products by 4.7%.

120. However, it is also necessary to consider the impact of removing the discount currently enjoyed by purchases that are being subsidised by promotions. From a pure expenditure point of view, this captures all sales that would have happened in the absence of the promotion, i.e. the 'displaced', 'subsidised', 'cannibalised' and 'stolen' sales in Table 9. Together these purchases make up around 10% of sales. Returning these sales to full price from the 34% discount they currently experience implies these products increase in price by 51.5%. This in turn would lead to a total increase in expenditure of 5.2%.

121. Taken together, this suggests that removing volume promotions on HFSS products would increase expenditure by 0.5% (5.2% - 4.7%). However, this is based on a lack of price adjustments by firms – due to the highly competitive nature of the retail sector, we would expect a subsequent reduction in prices as firms attempt to maximise profits subject to the newly imposed constraint. Studies evaluating the impact of banning volume promotions on alcohol in Scotland suggested that retailers responded

⁶³ Public Health England (2015) Sugar Reduction: The evidence for action - Annexe 4: An analysis of the role of price promotions on the household purchases of food and drinks high in sugar, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/470175/Annexe_4_Analysis_of_price_promotions.pdf (Last accessed 13/09/2018)

⁶⁴ Additional sales are the extra trips and expansion categories outlined previously in the [Impact of price promotions on sales](#) section.

⁶⁵ Public Health England (2015) Sugar Reduction: The evidence for action - Annexe 4: An analysis of the role of price promotions on the household purchases of food and drinks high in sugar, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/470175/Annexe_4_Analysis_of_price_promotions.pdf (Last accessed 13/09/2018)

⁶⁶ Numbers may not sum to total due to rounding.

by using other forms of promotion, specifically price discounts^{67 68}. It seems reasonable to assume that retailers will respond in a similar way to these restrictions. Therefore, to assess the impact of this adjustment we assume retailers reduce prices back to their previous average levels using price discounts.

Retailers' price adjustment

122. To assess the possible impact of retailers adjusting prices we consider how the price elasticity of demand for products may vary based on whether price changes are due to volume promotions or price discounts. Price elasticity of demand is a measure of how responsive the quantity demanded of a good or service is to a change in its price and is calculated by dividing the percentage change in the quantity demanded by the percentage change in its price.
123. To work out the price elasticity of demand when a product is on promotion we first need to estimate the decrease in the average price that these promotions create. Products on promotion are sold at an average discount of 34%, which means they are sold at an average price of 66% of their full price. The Kantar Worldpanel analysis suggests that promotions account for 39% of food and drink retail expenditure. These two figures suggest that promotions currently account for 49.2% of sales volumes. Using this figure, we can work out the average effective price of all HFSS products sold. With 49.2% of products being sold at an average discount of 34% and the remaining 50.8% being sold at full price, this suggests that price promotions currently result in an average 'effective' price of 83.3% of undiscounted prices. This implies that price and volume promotions together reduce average prices by 16.7% compared to their undiscounted levels.
124. As stated above, to calculate the price elasticity of demand for volume promotions we also need to estimate the change in sales volumes these discounts create. To do this we use the expenditure share and average level of discount to estimate the volume of HFSS sales from discounted and undiscounted items. The results of this calculation are displayed in Table 10 below.

Table 10: Volume of HFSS products sold

Type of purchase		Percentage of expenditure		Percentage of volume sold		
		Price cuts	Multi-buy	Price cuts	Multi-buy	Total
Discounted	Additional	5.5%	4.7%	6.9%	5.9%	12.8%
	Stolen	8.0%	3.6%	10.1%	4.5%	14.6%
	Cannibalised	6.2%	3.3%	7.8%	4.1%	11.9%
	Displaced	0.2%	0.5%	0.3%	0.6%	0.9%
	Subsidised	4.5%	2.6%	5.7%	3.3%	9%
Total Discounted Expenditure		39%		Total Discounted Volume		49.2%
Total Non-Discounted Expenditure		61%		Total Non-Discounted Volume		50.8%

125. Table 10 suggests that volume promotions subsidise 12.5%⁶⁹ of the volume of HFSS items sold. Restricting the use of volume promotions would therefore increase the price of these subsidised sales to their undiscounted level. This suggests that removing volume promotions would result in products being sold at an average 'effective' price of 88.9% of undiscounted levels. Comparing this with the fact that both price and volume promotions currently result in an average 'effective' price of 83.3% of undiscounted prices, implies that on their own volume promotions reduce average prices by around 6.3%.
126. We previously estimated that 4.7% of sales are currently due to volume promotions. Table 10 suggests that these sales account for 5.9% of the total volume of HFSS food and drinks sold. Comparing this to the fact that 94.1% of sales volumes would have taken place without volume

⁶⁷ Robinson M, Geue C, Lewsey J, Mackay D, McCartney G, Curnock E, Beeston C. (2014) Evaluating the impact of the alcohol act on off-trade alcohol sales: a natural experiment in Scotland. *Addiction*. 2014 Dec 1;109(12):2035-43.

⁶⁸ Nakamura R, Suhrcke M, Pechey R, Morciano M, Roland M, Marteau TM. (2014) Impact on alcohol purchasing of a ban on multi-buy promotions: a quasi-experimental evaluation comparing Scotland with England and Wales. *Addiction*. 2014 Apr 1;109(4):558-67.

⁶⁹ This is the sum of the Stolen, Cannibalised, Displaced and Subsidised categories.

promotions, suggests that the 6.3% reduction in average prices results in a 6.2% increase in quantity sold. This gives a 'volume promotion specific price elasticity of demand of around -0.99.

127. Using the same process, we estimate that on their own price cuts reduce average prices by around 10.7% and increase the volume of HFSS products sold by 7.4%. This gives a price discount specific price elasticity of demand of around -0.69.
128. Comparing these two elasticities it's clear that the quantity of HFSS products demanded is more sensitive to reductions in prices from volume promotions than price discounts. This is to be expected given the requirement for consumers to purchase greater quantities to take part in a volume promotion.
129. In the sensitivity analysis, we investigate a scenario in which businesses respond to the regulation by changing the general price level instead of switching their marketing strategy to temporary price cuts.

Impact on HFSS product sales and profits

130. To illustrate the potential impact of a restriction on volume promotions, we therefore assume that retailers would reduce the prices of HFSS products by 6.3%.
131. Removing the excess sales generated by volume promotions reduces the total sales volumes by 5.9% to 94.1% of their previous level. The subsequent price decrease by retailers switching from volume promotions to price cuts increases sales of HFSS products by 4.4%, which is equivalent to 4.1% of the total volume sold before the restrictions were introduced. This implies a reduction in sales of HFSS food and drink of 1.8% of the current volume, or 1.5% of current sales value once price changes are considered.
132. Department of Health and Social Care analysis of 2,000 food and drink products in Kantar Worldpanel data suggests that around 49.6% of GB food sales would be considered HFSS by the 2004/05 Nutrient Profile Model.
133. The total GB food market was valued at £88.5bn in 2014, which implies £43.9bn of grocery expenditure is on products high in fat, salt, and sugar given their predicted 49.6% market share. Multiplying this by 1.5% implies a reduction in sales of £0.65bn per annum.
134. To work out the impact of this reduction on profits we need to apply a profit margin. Grocery and food retailing is a low margin, high volume business, with increased competition over recent years meaning that profit margins for most grocery retailers are under pressure⁷⁰. For the purposes of this analysis we could use retailers gross or net profit margins.
135. The gross profit margin is the difference between total revenue and the cost associated with selling products, such as the cost of purchasing the product from the supplier and transporting it to stores. As a result, using the gross margin would imply that these marginal costs associated with selling products decrease as revenue changes, but fixed costs remain constant.
136. In contrast, the net profit margin is the difference between total revenue and total operating costs. This measure of profit also takes into account fixed costs and using it would imply that both marginal and fixed costs can be adjusted as revenue changes. It might be expected that retailers would be able to adjust their fixed costs in the long run.
137. Evidence suggests that food retailers net profit margins are around 2%⁷¹, with gross margins ranging from around 6% at Tesco and Sainsburys to around 4% at Morrisons⁷². Due to the uncertainty around retailer's ability to adjust fixed costs, we have decided to use their gross profit margins for the purposes of this analysis. The impact of using a lower margin based on retailer's net profit margins is explored in the sensitivity analysis.
138. Assuming gross margins are at the higher end of the range reported above and applying a 6% margin to the value of the reduction in sales of HFSS food and drinks implies annual lost profits of around £39m.

⁷⁰ Food Standards Scotland (2017) Identifying and understanding the factors that can transform the retail environment to enable healthier purchasing by consumers, Leigh Sparks and Steve Burt, University of Stirling, https://www.foodstandards.gov.scot/downloads/FSS-Final_Report_June_1st_2017.pdf (last accessed 14/09/2018)

⁷¹ Ibid.

⁷² These figures are based on the amount of gross profit these retailers reported in their annual accounts.

139. The above calculations consider the impact of the policy on Great Britain. Reducing the costs in proportion with England's 86.6% share of the GB population, results in lost retailer profits of £34m per year.

• **Is it reasonable to assume that businesses will switch to using price cuts instead of volume offers to promote HFSS products? (Consultation question 46)**

Summary Table

140. Table 11 below outlines the expected impact of the policy on retailer profits, with the calculations at each stage of the methodology split out.

Table 11: Option 2: Summary of the reduction in annual profits for retailers

Net Percentage reduction in HFSS food and drink sales	Total grocery sales classified as HFSS	Reduction in sales of HFSS food and drink	Reduced profit from HFSS food and drink	England only lost profit
1.5%	£44bn	£0.65bn	£39m	£34m

Costs to the out-of-home sector

Transition costs

141. Transition costs for the OOH sector are expected to fall within the same categories as the retail sector:

- Familiarisation;
- Product assessment;

142. It is important to note that the transition costs estimated here are based on several assumptions covering the time it will take for businesses to familiarise themselves with the regulations and assess products. We welcome any comments on whether our estimated costs to businesses are reasonable and will look to improve these assumptions during the consultation.

Familiarisation

143. For small and medium businesses, we assume that on average, it would take one manager one hour to read and become familiar with the regulations. Like the retail sector, the time taken for initial familiarisation will vary between businesses and so we estimate that it will take multiple managers and hence 15 hours of familiarisation in large businesses.

144. The average hourly wage rate for restaurant and catering establishment managers and proprietors is £10.45⁷³. This is uprated by 30% to £13.58 to account for overheads. Sensitivity analysis using the maximum and minimum wage rate percentiles is presented below.

145. To calculate the familiarisation costs, we have used data on the number of out-of-home sector food enterprises contained in the IDBR (mentioned above). Excluding micro businesses, we believe there are around 26,000 enterprises in England which would be affected by these regulations and therefore an equal number of managers who would need to familiarise themselves with them.

146. To account for some of the uncertainty surrounding wage rates, sensitivity analysis has been conducted using the maximum and minimum wage rate percentiles listed in the ONS' Annual Survey of Hours and Earnings (Table 12). This indicates that familiarisation costs to business could range between £330k and £561k, with £436k as our best estimate.

Table 12: Familiarisation cost by sector, England only

Sector					Familiarisation costs (£ '000s)

⁷³ ONS, Annual Survey of Hours and Earnings (ASHE) (2017 provisional, table 14.5a)

	SIC Code	No. of enterprises ⁷⁴	Small and medium businesses	Large businesses	Best estimate	Lower estimate	Upper estimate
Licensed restaurants	56101	8,190	8,100	90	£128	£97	£165
Unlicensed restaurants and cafes	56102	3,120	3,000	120	£65	£49	£84
Take away food shops and mobile food stands	56103	2,365	2,330	35	£39	£29	£50
Other food serving activities	56290	300	275	25	£9	£7	£11
Public houses and bars	56302	8,265	8,230	35	£119	£90	£153
Hotels and similar accommodation	55100	3,705	3,570	135	£76	£57	£98
Total initial familiarisation cost					£436	£330	£561
Cost of briefing outlets					£758	£573	£975
Total familiarisation cost OOH					£1,194	£903	£1,537

147. Businesses will also need to brief their outlets so they understand the new regulations. There are around 56,000 OOH outlets that would need to be familiar with the policy. This will likely take one manager no more than an hour per outlet. The additional costs of sharing the information with 56,000 outlets is estimated to be £758k. This brings total familiarisation costs for OOH businesses up to £1.2m

Product Assessment

148. As for retailers, to comply with the restrictions out-of-home businesses will need to assess whether each of their products is considered HFSS. It is possible that businesses would not be required to assess every product, merely those products being considered for promotion at any given time. However, we assume that all their packaged products would need to be assessed to assist with promotion planning.

149. The cost of calculating nutritional information will depend greatly on the number of packaged products sold by each business. This is affected by the size of the business and the sector it operates in. Due to a lack of data on the number of packaged products sold per OOH business, we have calculated illustrative costs based on Table 13 below.

150. Assuming it takes 2 minutes for a stock control clerk or assistant to assess and record the outcome, we estimate that the total costs for product assessment in the OOH sector amount to around £940k (see Table 13).

Table 13: Businesses and products affected, England only

SIC Code and sector	Number of packaged products ⁷⁵	Number of businesses ⁷⁶	Cost per business	Total Cost
56101: Licensed restaurants	0	8,190	£0	£0
56102: Unlicensed restaurants and cafes	40	3,120	£17	£54,570
56103: Take away food shops and mobile food stands	20	2,365	£9	£20,680
56290: Other food service activities	40	300	£17	£5,250
56302: Public houses and bars	20	8,265	£9	£72,270
55100: Hotels and accommodation	20	3,705	£9	£32,400
Total		25,945		£942,870

151. Further costs would then be incurred from sharing this information with individual outlets. Assuming this takes 1 hour of time for a catering establishment manager or proprietor at £13.60

(including 30% on costs) for each of the roughly 56,000 outlets in England, distribution of this information would cost a further £758k. The total cost of product assessment in the out-of-home sector is therefore £1.7m.

Out-of-home profits

152. We are not aware of any studies assessing the current use of volume promotions within the out-of-home sector, or the impact these promotions might have on consumer behaviour. The high degree of promotional activity seen amongst the major supermarkets could be a result of the intense price competition in this market, and may not be reflected in the out-of-home sector.
153. However, there is evidence to suggest that both temporary price reductions and volume offers are being offered by a variety of out-of-home businesses. Furthermore, the fact that numerous websites⁷⁷ exist to aggregate such offers, suggests widespread use of these types of promotion.
154. Although OOH food purchases occur in a distinctly different setting to retail consumption of food, we would expect somewhat similar responses to volume and price promotions. The excess consumption effect may however be moderated for in-restaurant dining. Rather than increasing consumption for an individual, it is likely that offers along the lines of '2 items for £x' would simply be used to lower the average cost of dining across a group.
155. Given the lack of information on the use of price promotions in this market, we are unable to quantify the estimated loss in profit. We will investigate this area during the consultation and would welcome any further evidence.

- **To what extent are price promotions offered in the out-of-home sector and do consumers respond in a similar way to price promotions in supermarkets? (Consultation question 46)**
- **Are you aware of any comprehensive data sources on sales in the out-of-home food market and the nutritional content of the products sold? (Consultation question 37)**

Costs to Manufacturers

Reduction in profits

156. To estimate the impact on manufacturer profits we follow a three-stage process outlined in Figure 7 below. First, we estimate the manufacturers lost revenue by applying an assumption for the retailers mark up to the reduction in retail sales. Using the manufacturer's profit margin, we can then estimate the change in profits. However, food and drink manufacture is a global business so we must adjust the manufacturer impact to estimate the impact on UK rather than overseas shareholders.

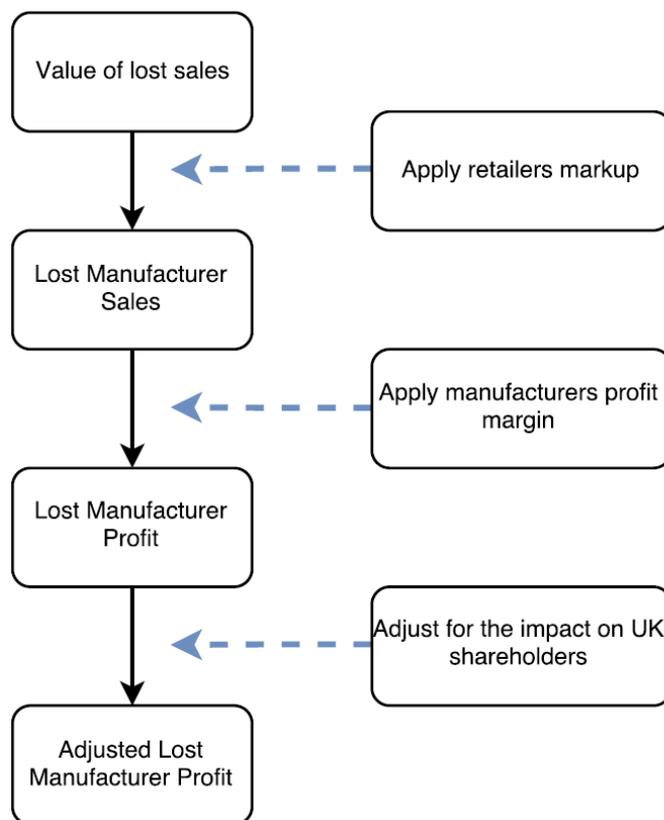
⁷⁴ Data from the Inter-Departmental Business Register can be accessed using the NOMIS service provided by the Office for National Statistics: <https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?theme=49>

⁷⁵ The number of packaged products stocked by different types of businesses are illustrative assumptions.

⁷⁶ Data from the Inter-Departmental Business Register can be accessed using the NOMIS service provided by the Office for National Statistics: <https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?opt=3&theme=&subgrp=>

⁷⁷ For example, <http://www.vouchercodes.co.uk/restaurant-vouchers.html>, <http://www.myvouchercodes.co.uk/restaurants-takeaways-bars>, and <http://www.moneysavingexpert.com/deals/cheap-restaurant-deals> (all accessed 13/06/2018)

Figure 7: Estimating the reduction in manufacturer profits.



157. We previously estimated that restricting the use of volume promotions would reduce retail sales by £0.65bn per year. UK supermarket mark-ups are estimated to be between 35% and 70%⁷⁸ - assuming the mid-point of this range implies lost manufacturer sales of £0.4bn per year.
158. Over the past decade or so, food and drink producers profit margins have ranged between 5 and 7%⁷⁹. Taking the midpoint of this range and applying a profit margin of 6%, implies lost profits of around £25m per annum for manufacturers of HFSS products.
159. Adjusting to the expected size of the English market based on England's 86.6% share of the GB population results in lost profits of £22m.
160. However, since food and drink manufacture is a global business we must also adjust the manufacturer impact to take account of the impact on UK rather than overseas shareholders. The true figure for the share of manufacturer profits retained in the UK requires further research, but for the purpose of this consultation, we assume 49% of manufacturer profits are retained in the UK. This is based on the proportion of food that was supplied domestically in 2016⁸⁰ and results in an annual reduction in UK shareholder profits of around £11m in England.
161. The above calculations do not form a full general equilibrium assessment of the impact of a restriction on price promotions for HFSS goods. Money no longer spent by consumers on promoted products will be distributed to other areas of the economy. It is not possible to assess what the impact of these indirect changes would be.
162. It is possible that retailers would respond to a restriction on price promotions on some goods by increasing the number of price promotions on goods that are out of scope of the restriction. Any such change in promotions would have impacts on retailer and manufacturer profits. It has not been possible to assess these impacts here.

Summary table

⁷⁸ USDA Foreign Agricultural Service (2011) Retailers

http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Retail%20Foods_London_United%20Kingdom_2-3-2011.pdf

⁷⁹ OC&C/ The Grocer Food and Drink 150 (2018) 150 2018 Infographic, <https://www.occstrategy.com/en/news-and-media/2018/09/occ-and-the-grocer-food-and-drink-150-2018> (accessed 23/10/2018)

⁸⁰ DEFRA (2016) Food Statistics Pocket Book, <https://www.gov.uk/government/statistics/food-statistics-pocketbook-2016> (Accessed 13/07/2018)

163. Table 14 below outlines the expected impact of the policy on manufacturer profits, with the calculations at each stage of the methodology performed above split out.

Table 14: Option 2: Summary of the reduction in profits for manufacturers of HFSS products.

Reduced retail sales of HFSS food and drink	Reduced manufacturer sales of HFSS food and drink	Lost profit	England only lost profit	Impact on UK shareholders
£0.65bn	£0.4bn	£25m	£22m	£11m

Reformulation

164. Some manufacturers might respond to these restrictions by reformulating their products. This may be possible for goods that are only slightly above the threshold, but for products such as confectionery, it will be more challenging to reformulate to avoid this categorisation. The costs of any reformulation will vary substantially from one product to another, depending on the amount of changes that need to be made and the cost of alternative ingredients added to products.

165. Due to the uncertainties surrounding these costs, we believe it is not appropriate to estimate the cost of any potential reformulation. Furthermore, any effort by manufacturers to reformulate their products would only be pursued if the expected returns were greater than not doing so. As such, we would expect the benefits of reformulation to outweigh the costs to retailers and manufacturers.

Retailer – manufacturer relationship

166. The estimates above take a somewhat simplistic view of the relationship between manufacturers and retailers. Decisions about the timings and types of promotions which are offered during any given week will be the result of a series of negotiations between retailers and manufacturers.

167. Restricting the use of volume promotions for HFSS products would clearly have substantial implications for this relationship. However, due to the lack of publicly available information in this area, it has not been possible to assess the implications of these restrictions on this relationship. We would welcome any further evidence on how these proposals would impact the intricate supply chain relationships (e.g. sales agreements, sales targets, the future relationships and profitability) between manufacturers and retailers as part of the consultation.

- **How will these proposals affect the relationships between manufacturers and retailers (e.g. sales agreements, sales targets, the future relationships and profitability)? (Consultation question 39)**

Costs to Government

Enforcement costs

168. To enforce the legislation, the promotion of these products will need to be checked as part of normal inspection visits.

169. There will be one-off transition costs to local authorities as trading standards officers familiarise themselves with the new regulations. According to the National Careers Service, an experienced trading standards officer (TSO) works around 37 hours per week and earns between £24k and £50k a year⁸¹. Using the midpoint of this range, we estimate an hourly salary assuming a 37-hour working week, 5 weeks holiday and 8 days of bank holidays. Uplifting this hourly wage by 30% for on-costs implies the hourly cost of a TSO is £28.63. Assuming familiarisation and dissemination of information to other TSOs will take a total of three hours per local authority, we estimate that familiarisation costs for all 326 local authorities would be around £28k.

⁸¹ National Careers Service, Trading Standards Officer <https://nationalcareersservice.direct.gov.uk/job-profiles/trading-standards-officer#salary> (Accessed 02/01/2018)

170. We have previously estimated, using IDBR and IGD data, that there are approximately 41,000 relevant retail stores within in England. In the OOH sector, there are around 56,000 outlets in scope.
171. Assuming retail outlets are visited once every 3.5 years⁸², we estimate there will be 11,700 visits per year. We estimate the additional time required at each outlet for paperwork-based checks is 15 minutes per inspection. By multiplying visits by time required and the uprated hourly wage of £28.63, we estimate that total staff costs for enforcement in retail stores are around £84k per annum. Likewise, TSOs inspect OOH outlets every two years, resulting in 28,000 visits and costs of £200k per annum. Total enforcement costs are therefore £284k per annum.
172. DHSC is proposing to reimburse local authorities for the cost of enforcing this policy. Where a policy is placing an additional cost on the department, it is DHSC policy to convert this into an opportunity cost. This is done by estimating the value of the health benefits this displaces from the fixed health budget.
173. At the margin, it is estimated that the NHS can purchase a Quality Adjusted Life Year (QALY) for £15,000, which in turn is then valued at £60,000 by society. Dividing the yearly enforcement costs by this figure and multiplying by society's valuation of a QALY, implies that the opportunity cost of this funding is £1.1m per annum, with the opportunity cost of the initial familiarisation costs valued at £112k.

- **Are you aware of any other data sources available which would improve our estimates of the number of food retailer and out-of-home food outlets? (Consultation question 38)**
- **Is it reasonable to assume that retailers and OOH businesses are inspected by Trading Standards every 3.5 and 2 years, respectively? (Consultation question 40)**

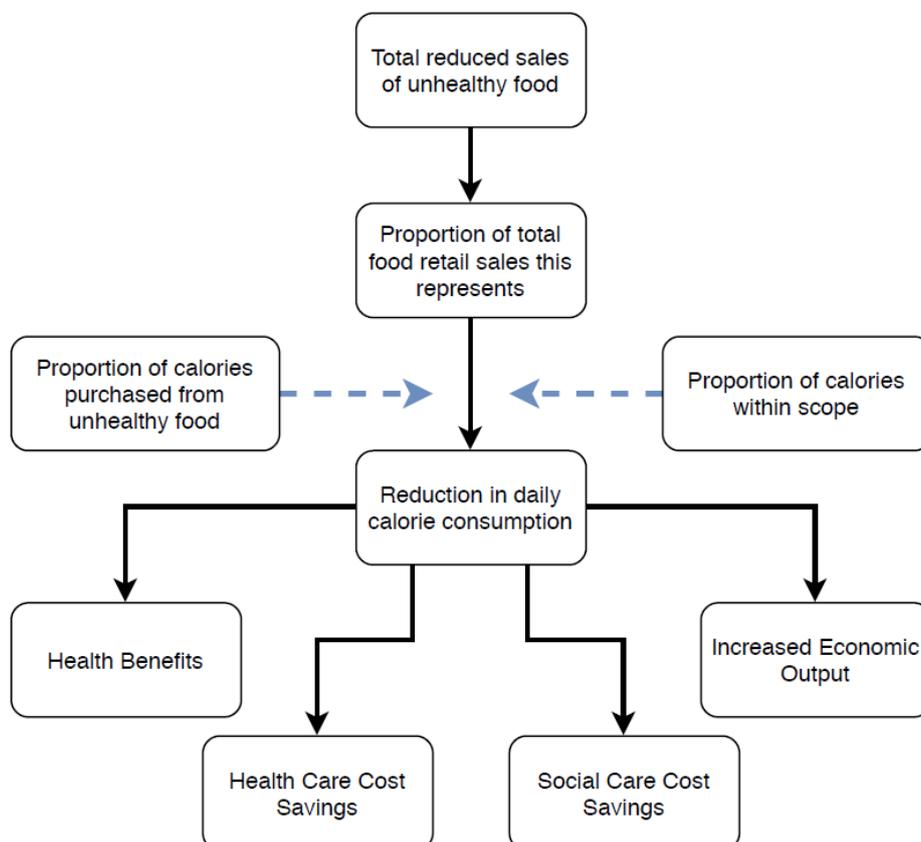
Consumers

Health benefits

174. Due to the lack of comprehensive data on sales of packaged products in the OOH sector or their nutritional content, we have decided to estimate the health benefits of reduced consumption in the food retail sector only. As a result, it is likely that the benefits estimated below are an underestimate.
175. The calculations of the quantified benefits (including QALYs) are done within the “DHSC Calorie Model”. This model simulates a “control” group of would-be overweight and obese adult population, compared with an “intervention” group. The “intervention” group has a lower average BMI, as calculated from the reduced daily calorie intake. The simulation is over 25 years.
176. The average BMI determines the likelihood of the following five conditions associated with obesity, which in turn have a fatality rate and a reduced quality of life: diabetes, coronary heart disease, stroke, colorectal cancer, and breast cancer. The savings to the NHS are calculated from the reduced treatment of each disease. Reductions in mortality are used to calculate the impact on economic output from an increased workforce. The costs of social care savings are calculated due to a reduced proportion of overweight, obese, and morbidly obese individuals and hence fewer people needing social care in the treatment scenario. Changes in QALYs are calculated from the reduced number of deaths and the reduction of people living with the diseases. These are then converted into monetised QALY using a conversion of how much society values a QALY. For a full description of the calculations and the set of assumptions see [Annex A – DHSC Calorie Model](#) and the [DHSC Calorie Model Technical Consultation Document](#) published alongside this document.

Figure 8: Estimating the health benefits of restricting volume promotions.

⁸² This is a plausible assumptions based on several webpages <http://www.tradingstandardswales.org.uk/help/foodinspect.cfm> and http://www.hullcc.gov.uk/portal/page?_pageid=221,52448&_dad=portal&_schema=PORTAL (all accessed 13/06/2018)



177. It is estimated that around 23% of calories are consumed in the out-of-home sector⁸³. We therefore assume that 77% of calories consumed are purchased from GB retailers. A small proportion of these calories will be bought from locations such as chocolatiers that are both outside the scope of this policy and likely not captured by the Kantar Worldpanel data.

178. ONS data suggests that 5.4% of sales in 'Predominantly Food Stores' occurred in 'Specialist Food Stores' in 2016⁸⁴. We therefore estimate that 94.6% of retailer calories are within scope, equivalent to 72.8% of all calories.

179. Previously, we estimated that a restriction on price promotions within retailers might be expected to result in a 1.8% reduction in the quantity of HFSS items sold. Multiplying this by the proportion of calories purchased which are from HFSS items (55.8%) and taking into account the proportion of calories, which are within scope, suggests an overall reduction in calorie intake of around 0.7%.

180. However, we can assume that children consume a higher number of HFSS products compared to adults (e.g. confectionary and sugar sweetened beverages). Therefore, we calculate reductions for adults and children separately based on their calorie intakes recorded in the National Diet and Nutrition Survey. This results in reductions of 0.8% for people aged under 18 and 0.7% for those aged 19 and over. The impacts for specific age-gender groups are displayed in Table 15.

Table 15: Current calorie consumption and expected reductions⁸⁵

	Males				Females			
	4-10	11-18	19-64	65+	4-10	11-18	19-64	65+
Mean daily calorie intake	1521	1933	2107	1838	1401	1617	1596	1491
Calorie reduction	13	16	14	13	12	14	11	10

⁸³ This figure is based on DHSC analysis of years 5-6 of the National Diet and Nutrition Survey.

⁸⁴ Retail Sales Index 2016, ONS

⁸⁵ Current mean daily calorie consumption is based on DHSC analysis of years 5-6 of the National Diet and Nutrition Survey. As discussed below, self-reported data such as the NDNS suffer from considerable underreporting.

181. The calculation above relies on mean daily calorie consumptions reported in the National Diet and Nutrition Survey (NDNS). Even though this survey is based on current best practice, there is evidence of significant under-reporting in the food diaries completed by individuals⁸⁶. The data suggests, for example, that most age-gender subgroups are not meeting the recommended number of calories per day. Given current obesity levels in the UK, it is evident that energy consumed must be under-reported in the survey. This is a common problem in all dietary surveys relying on self-reported food intake. As a result, it is likely that the calorie reductions above are significant underestimates.

182. Over 25 years, discounted health benefits through reduced mortality and morbidity are estimated at around 113,000 QALYS, or £5.2bn at £60,000 per QALY. Reduced morbidity would also result in reduced cost pressures to the NHS. There would be additional health benefits to the population from reinvesting these savings back into the NHS; these are estimated to be worth around £3.5bn over the 25-year assessment period⁸⁷. Social care savings would amount to £685m and reduced premature mortality would be expected to deliver an additional £130m economic output through additional labour force participation.

Reformulation

183. As mentioned above, some manufacturers might respond to these restrictions by reformulating. If businesses were to reformulate or create new healthier products, this would lead to further indirect health benefits for consumers.

184. However, due to the uncertainties surrounding how much reformulation might take place we have not estimated the impact of any potential reformulation. Consequently, it is possible that the health benefits presented above are an underestimate.

Adjusting for compensating behaviour

185. So far, both the costs and health benefits have been calculated on the basis that wider factors do not shift to offset the impact of the policy. It is possible, for example, that consumers might adjust their consumption behaviour in response to consuming fewer calories, shift their purchasing to stores that are excluded from these regulations or respond to alternative marketing strategies from business. This type of behaviour change is a significant source of uncertainty in our analysis and as such could have a significant impact on the estimated net present value.

186. The evidence on compensating behaviour in the literature is mixed. Several experiments investigating the impact of adjusting the energy density of specific meals have found no evidence of calorie compensation at subsequent meals or during the short time period covered by the study^{88,89,90}. In contrast, other investigations have found that subjects completely compensated for a change in calorie intake.^{91,92} Furthermore, two other studies have found imprecise levels of calorie compensation,

⁸⁶ ONS (2016) A Governmental Statistical Service perspective on official estimates of calorie consumptions <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/methodologies/agovernmentstatisticalserviceperspectiveonofficial estimatesofcalorieconsumption> (Accessed 13/06/2018)

⁸⁷ To calculate the additional health benefits to the population from reinvesting savings back into the NHS we adjust the estimates produced by the modelling process outlined in [Annex A – DHSC Calorie Model](#) and [DHSC Calorie Model Technical Consultation Document](#). At the margin, it is estimated that the NHS can purchase a QALY for £15,000, which in turn is then valued at £60,000 by society. Therefore, dividing the yearly NHS savings by this figure and multiplying by society's valuation of a QALY allows us to estimate additional health benefits these savings generate.

⁸⁸ Anton SD, Martin CK, Han H, Coulon S, Cefalu WT, Geiselman P, Williamson DA. (2010) Effects of stevia, aspartame, and sucrose on food intake, satiety, and postprandial glucose and insulin levels. *Appetite*. 2010 Aug 31;55(1):37-43.

⁸⁹ Rolls BJ, Roe LS, Meengs JS. (2006) Reductions in portion size and energy density of foods are additive and lead to sustained decreases in energy intake. *The American journal of clinical nutrition*. 2006 Jan 1;83(1):11-7.

⁹⁰ Kelly MT, Wallace JM, Robson PJ, Rennie KL, Welch RW, Hannon-Fletcher MP, Brennan S, Fletcher A, Livingstone MB. (2009) Increased portion size leads to a sustained increase in energy intake over 4 d in normal-weight and overweight men and women. *British journal of nutrition*. 2009 Feb;102(3):470-7.

⁹¹ Foltin RW, Fischman MW, Emurian CS, Rachlinski JJ. (1988) Compensation for caloric dilution in humans given unrestricted access to food in a residential laboratory. *Appetite*. 1988 Feb 29;10(1):13-24.

⁹² Foltin RW, Fischman MW, Moran TH, Rolls BJ, Kelly TH. (1990) Caloric compensation for lunches varying in fat and carbohydrate content by humans in a residential laboratory. *The American journal of clinical nutrition*. 1990 Dec 1;52(6):969-80.

with subjects adjusting their food intake to compensate for 40%⁹³ and 35%⁹⁴ of the calories removed from their diets.

187. The rate of compensation is also likely to depend on the foods that are removed from peoples' diets, with some evidence suggesting people are less likely to compensate for changes in calorie intake from beverages than solid food⁹⁵. Furthermore, with many of these studies taking place in laboratory conditions or over relatively short periods of time, it is unclear how people might adjust their behaviour over time in real world conditions. Therefore, it is not obvious from the literature how consumers might adjust their behaviour in response to these regulations, if they do so at all.
188. As well as consumers adjusting their behaviour to maintain a constant calorie intake, businesses might pursue alternative ways of marketing HFSS products to maintain profits. The way products are marketed to us can be split into four elements often known as the 'four Ps': product; price; place; and promotion. These proposals only restrict businesses ability to use volume offers to promote HFSS products and leave open the possibility of increasing sales using other in store marketing techniques. We would expect any compensating activity by businesses to be undertaken based on mitigating the cost of the policy and increasing their profits.
189. Although it is unclear which marketing techniques retailers might use in place of volume offers, it seems likely that they will use price reductions instead. For example, in Scotland, when a restriction on multi-buy promotions on alcohol was introduced, analysis found that the restriction had very limited short-term impact on sales. The researchers concluded that this was likely due to retailers increasing the number of temporary price reductions in response⁹⁶. This also had the added benefit for consumers of a smaller financial outlay. However, another study, which examined the impact of these restrictions, found that they did affect alcohol sales in Scotland at the time in comparison to England and Wales⁹⁷. It is likely that the two studies reported different findings due to different datasets and differences in their analytical approaches.
190. Due to the considerable amount of uncertainty surrounding compensating behaviour, we have calculated low, central and high NPV scenarios based on different levels of compensation. Furthermore, we have also undertaken critical value analysis to consider what proportion of the above benefits would need to be offset for the policy to impose a net cost to society.
191. Our high NPV scenario assumes that consumers and businesses do not alter their behaviour over time. The central and low scenarios assume behaviour adjusts to compensate for 40% and 100% of the calories removed from their diets. This corresponds to the findings discussed above.
192. We expect benefits from reduced consumption to fall in proportion with the level of compensation. For the central scenario, a 40% consumption rate means that the monetised health benefit falls from £5.1bn to £3.1bn. Similarly, the low NPV, which assumes 100% compensation behaviour, means the monetised health benefit is zero. The compensation-adjusted benefits are presented in Table 16.

Table 16: Option 2: Calorie compensation adjusted benefit figures over 25 years

Benefit	Scenarios		
	Low (100% compensation)	Central (40% compensation)	High (0% compensation)
Monetised health benefit	£0m	£3.1bn	£5.2bn
NHS savings	£0m	£2.1bn	£3.5bn
Social care savings	£0m	£410m	£685m

⁹³ Porikos KP, Hesser MF, Van Itallie TB. (1982) Caloric regulation in normal-weight men maintained on a palatable diet of conventional foods. *Physiology & behavior*. 1982 Aug 31;29(2):293-300.

⁹⁴ Kendall A, Levitsky DA, Strupp BJ, Lissner L. (1991) Weight loss on a low-fat diet: consequence of the imprecision of the control of food intake in humans. *The American journal of clinical nutrition*. 1991 May 1;53(5):1124-9.

⁹⁵ Mourao DM, Bressan J, Campbell WW, Mattes RD. (2007) Effects of food form on appetite and energy intake in lean and obese young adults. *International journal of obesity*. 2007 Nov 1;31(11):1688-95.

⁹⁶ Nakamura, R., Suhrcke, M., Pechey, R., Morciano, M., Roland, M., & Marteau, T. M. (2014) Impact on alcohol purchasing of a ban on multi-buy promotions: a quasi-experimental evaluation comparing Scotland with England and Wales. *Addiction*, 109(4), 558-567.

⁹⁷ Robinson, M., Geue, C., Lewsey, J., Mackay, D., McCartney, G., Curnock, E., & Beeston, C. (2014) Evaluating the impact of the alcohol act on off-trade alcohol sales: a natural experiment in Scotland. *Addiction*, 109(12), 2035-2043.

Economic output	£0m	£80m	£130m
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193. Compensating behaviour by consumers and businesses could work by encouraging people to continue buying HFSS products or increasing the number of healthy items they buy. Both of which would increase industry profits compared to our estimates calculated previously. Therefore, as well as decreasing the benefits, we would also expect any compensation to decrease the costs of the policy. As a result, we have also assumed that the lost profit to industry decreases in proportion with the amount of calorie compensation, with all other costs remaining the same. The calorie compensation adjusted lost profit figures are presented below in Table 17.

Table 17: Option 2: Calorie compensation adjusted lost profit figures over 25 years

Group affected	Impact	Scenarios		
		Low (100% compensation)	Central (40% compensation)	High (0% compensation)
Retailers	Lost profit	£0m	£343m	£572m
OOH	Lost profit	£0m	Unquantified - Negative	Unquantified - Negative
Manufacturers of HFSS products	Lost profit	£0m	£110m	£184m

- **Is there any additional evidence that would improve our understanding of the level of compensating behaviour which might occur? (Consultation question 41)**

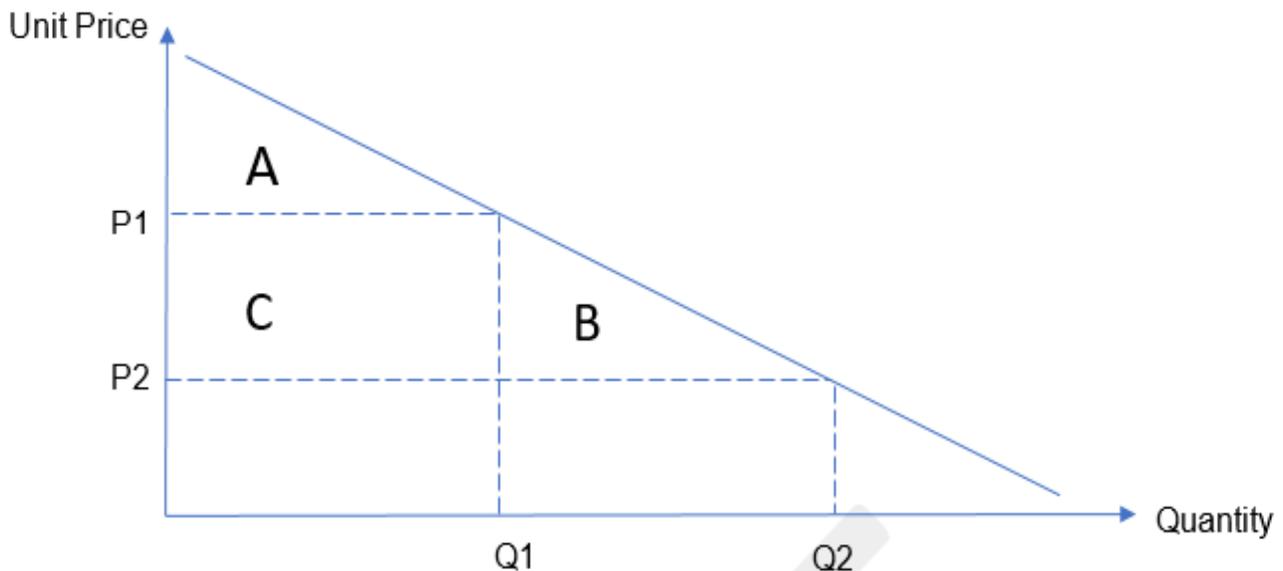
Impact on consumers

194. To assess the impact of these restrictions on consumers, we consider how the policy will affect consumer surplus. Consumer surplus describes the additional utility consumers gain from having a personal valuation of a product that is greater than the price they paid.

195. In economic terms, price promotions are an example of differential pricing, where businesses are able to segment the market into different groups of consumers and charge different prices to each group for the same product. This allows businesses to transfer some of the markets consumer surplus into additional revenue and profits. Volume promotions work on the same principle and allow retailers to increase revenues by splitting consumers into those who are willing to take part in promotions and those who are not. Individuals who take part in the promotion benefit from the lower price being offered and purchase more than they otherwise would have. Those who do not take part pay the higher full price and purchase less.

196. This is displayed graphically in Figure 9 below, where Q1 represents the quantity sold to individuals who do not take part in the promotion at the higher full price. The difference between Q1 and Q2 represents the additional quantity sold to consumers who take part in volume promotions. Areas A and B represent the consumer surplus for these two groups respectively, with area C being the additional revenue the retailer gains by segmenting the market. If the retailer offered the lower price P1 then it would sell the same quantity and area C would be converted into additional consumer surplus.

Figure 9: Differential pricing and consumer surplus



197. Under the restrictions being considered in this Impact Assessment, individuals will no longer be able to buy HFSS products on volume promotion. If businesses did not change their pricing strategies, this would increase the price of HFSS goods and reduce consumer surplus. This would be represented by the loss of area B on Figure 9 above. However, as mentioned previously when discussing the impact on retailer profits, due to the competitive nature of the sector, we expect firms to use price cuts to promote HFSS items lowering average prices back down to their level before the restrictions. Switching to price cuts removes the need to purchase more in order to benefit from the discount, allowing both groups of consumers to take advantage of the lower price. This converts some of the retailer's revenue into additional consumer surplus.
198. As outlined previously, despite this switch from volume promotions to temporary price discounts we still expect a reduction in sales of HFSS products. Ordinarily this would represent a reduction in consumer surplus. However, because average prices remain the same, consumers could continue to purchase the same quantity of HFSS items as before for the same cost if they desired. As a result, any reduction in sales must be from unwanted products that individuals were previously encouraged to buy as part of a volume promotion. This would suggest there is no loss in consumer surplus from reducing purchases of these products.
199. There is some uncertainty regarding the effect of the policy on individuals, with some people possibly losing out if certain products are not offered at a reduced price. The impact of this is likely to be greater for lower income households who tend to spend a greater proportion of their incomes on food and drink than average⁹⁸. However, with the assumptions made in this Impact Assessment, we believe consumers would be no worse off overall and there may be an increase in consumer surplus.

- **Is the approach used in this impact assessment suitable for assessing the impact on consumers and specifically for assessing the impact on consumer surplus? (Consultation question 48)**

Summary of costs and benefits

200. It has not been possible to quantify every aspect of the proposed policy. We will continue to work on the unquantified areas during the consultation to create estimates that are more robust. Notably, it has not been possible to quantify the impact on profits in the out-of-home sector, which will represent a substantial additional cost to business and additional health benefits for consumers. The table below outlines the expected impact of the policy, with quantifications where currently possible. These impacts have been estimated over a 25-year assessment period.

201. Furthermore, as mentioned previously due to the considerable number of uncertainties our calculations do not account for the impact of the policies already announced as part of the *Childhood obesity: a plan for action* or any other actions by Government. The interactive implications of

⁹⁸ Family Food 2016/17, DEFRA: <https://www.gov.uk/government/publications/family-food-201617/summary> accessed 12/10/2018

implementing multiple policies at once are also not assessed under our estimates here but we will discuss potential interactions in the section Interaction of policy effects.

Table 18: Summary of costs and benefits – Option 2 (£m)

Group affected	Impact	Low estimate (100% compensation)	Central estimate (40% compensation)	High estimate (0% compensation)
Retailers	Transition – Familiarisation	- 0.7	- 0.7	- 0.7
	Transition – HFSS assessment	-1	-1	-1
	Lost profit	0	-343	-572
Total retailer impact		-1	-345	-574
OOH food sector	Transition – Familiarisation	-1.2	-1.2	-1.2
	Transition – Initial HFSS assessment	-2	-2	-2
	Lost profit	Not quantified - Negative	Not quantified - Negative	Not quantified - Negative
Total OOH sector impact		-3	-3	-3
HFSS manufacturers	Lost profit - retail sales	0	-110	-184
	Lost profit - OOH sales	Not quantified - Negative	Not quantified – Negative	Not quantified – Negative
Total HFSS manufacturer impact		0	-110	-184
Government	NHS savings	0	2,088	3,481
	Social care savings	0	412	685
	Enforcement	-24	-24	-24
Total Government impact		-24	2,476	4,142
Wider society	Health benefits	0	3,094	5,157
	Economic output	0	79	132
	Consumer surplus	Not quantified	Not quantified	Not quantified
Total wider society impact		0	3,173	5,289
NPV		-30	5,190	8,670

Option 3 - End all volume offers for HFSS products included in Public Health England's sugar and calorie reduction programme and the Soft Drinks Industry Levy (SDIL)

Costs to Retailers and Manufacturers

Transition Costs

202. Familiarisation costs to retailers are the same as calculated under Options 2, giving a central cost estimate of £706k. This includes the cost of briefing individual outlets.
203. The costs to retailers of assessing the nutritional content of products are unchanged from those estimated under Option 2. This suggests total product assessment costs of around £1m.

Reduction in profits

204. A potential loss in profit for retailers and manufacturers resulting from a restriction on volume promotions for all HFSS products as defined by the 2004/05 Nutrient Profile Model (NPM) was estimated under Option 2. As Option 3 focuses only on the products covered by Public Health England's sugar and calorie reduction programmes and the soft drinks industry levy (SDIL), the impact will be smaller.
205. We do not have evidence available to assess if consumer responses to promotions offered on HFSS products differ systematically in response to promotions on this subset of products. For the purposes of this Impact Assessment, we assume that they do not differ – in other words that a promotion on those food and drink categories listed in [Annex D](#) results in an equivalent change in sales to a promotion on any other HFSS product.
206. DHSC analysis of 2014 Kantar data suggests that the products listed in [Annex D](#)⁹⁹ account for around 38% of GB food sales. Using this figure, we estimate that sales of the included products are worth £33.8bn per year.
207. We previously estimated that that 49.6% of GB food sales would be considered HFSS by the 2004/05 NPM. The products included in the reformulation programmes were chosen because they contribute the most sugar and calories to children's diets. It is therefore likely that a greater proportion of these products will fail the NPM than estimated previously. DHSC analysis of 2,000 food and drink products in Kantar Worldpanel data suggests that around 65.3% of products included in Public Health England's sugar and calorie reduction programmes and the SDIL would be considered HFSS by the 2004/05 NPM.
208. Using this figure and following the same methodology as outlined previously implies a reduction in sales of around £325m. Applying a 6% gross profit margin suggests annual lost profits of around £19m. This calculation considers the impact of the policy on Great Britain. Reducing the costs in proportion with England's 86.6% share of the GB population, results in lost retailer profits of £17m per year.
209. Using the same methodology as under Option 2, we estimate that restricting volume promotions of HFSS products would reduce manufacturer sales by around £213m. Applying a 6% profit margin suggests an annual reduction in profits of around £13m. Adjusting for the expected size of the English market and UK shareholders implies lost profits of £5m.

Costs to the out-of-home sector

Transition Costs

Familiarisation

210. Familiarisation costs to the out-of-home sector are as calculated under Options 2, giving a central cost estimate of £1.2m. This includes the cost of briefing individual outlets.

⁹⁹ It is important to note that the list of product categories to be included in the calorie reduction programme will be confirmed after engagement with stakeholders. As a result, the calculations above are based on the categories Public Health England indicated will be included in the programme in their report [Calorie reduction: The scope and ambition for action](#).

Product Assessment

211. As under Option 2, product assessment in the OOH sector is expected to cost £1.7m.

Out-of-home profits

212. As discussed under Option 2, we do not have information on the use and impact of volume offers in the out-of-home sector. While there will be a negative impact on OOH profits, we are therefore unable to quantify it at this stage. We would expect the loss in profit here to be substantially smaller than that for Options 2, reflecting the smaller range of products in scope.

Reformulation

213. As mentioned previously some manufacturers might respond to these restrictions by reformulating their products. The costs of any reformulation will likely vary substantially from one product to another, depending on the amount of changes that need to be made and the cost of alternative ingredients added to products.

214. Furthermore, any effort by manufacturers to reformulate their products would only be pursued if the expected returns were greater than not doing so. As such, we would expect the benefits of reformulation to outweigh the costs to retailers and manufacturers.

Costs to Government

Enforcement costs

215. The opportunity cost from DHSC covering the enforcement costs generated by this policy are considered equal to those estimated under Option 2, at £1.1m per year, with transition costs of £112k.

Consumers

Health benefits

216. Previously, we estimated that a restriction on volume promotions within retailers might be expected to result in a 1.8% reduction in the quantity of HFSS items sold. DHSC analysis of Kantar Worldpanel data suggests that foods listed in [Annex D](#) account for around 45% of calories purchased. Further analysis of 2,000 food and drink products in Kantar Worldpanel data suggests that around 69.7% of calories from the products included in Public Health England's sugar and calorie reduction programmes and the soft drinks industry levy (SDIL) come from HFSS food and drinks. Following the calculation methodology described in Option 2 and using these figures to adjust our estimates implies a 0.4% reduction in calorie consumption.

217. Again, we can assume that children consume a higher number of HFSS products compared to adults. Therefore, we calculate reductions for adults and children separately based on their calorie intakes recorded in the National Diet and Nutrition Survey. This results in reductions of 0.5% for people aged under 18 and 0.4% for those aged 19 and over. The impacts for specific age-gender groups are displayed in Table 19.

Table 19: Current calorie consumption and expected reductions¹⁰⁰

	Males				Females			
	4-10	11-18	19-64	65+	4-10	11-18	19-64	65+
Mean daily calorie intake	1521	1933	2107	1838	1401	1617	1596	1491
Calorie reduction	7	9	8	7	7	8	6	6

¹⁰⁰ Current mean daily calorie consumption is based on DHSC analysis of years 5-6 of the National Diet and Nutrition Survey. As discussed in [Annex A](#), self-reported data such as the NDNS suffer from considerable underreporting.

218. This estimated reduction in calorie intake is converted into changes in average BMI and subsequent healthcare outcomes through a modelling process discussed in [Annex A – DHSC Calorie Model](#) and in [DHSC Calorie Model Technical Consultation Document](#) accompanying this publication.
219. As mentioned previously there is thought to be significant levels of under-reporting present in the food diaries collected for the National Diet and Nutrition Survey. As a result, it is likely that the calorie reductions above are significant underestimates.
220. Over 25 years, discounted health benefits through reduced mortality and morbidity are estimated at around 64,000 Quality Adjusted Life Years (QALYs), or £2.9bn at £60,000 per QALY. Reduced morbidity would also result in reduced cost pressures to the NHS. There would be additional health benefits to the population from reinvesting these savings back into the NHS. These are estimated at £2bn over the 25-year assessment period. Social care savings would amount to £387m and reduced premature mortality would be expected to deliver an additional £74m economic output through additional labour force participation.

Reformulation

221. If businesses reformulated their products or created new healthier products, this would lead to further indirect health benefits for consumers. However, due to the uncertainties surrounding how much reformulation might take place we have not estimated the impact of any potential reformulation. Consequently, it is possible that the health benefits presented above are an underestimate.

Adjusting for compensating behaviour

222. Again, it is possible that consumers will adjust their consumption or purchasing behaviour in response to consuming fewer calories or alternative marketing strategies.
223. As for Option 2, the cost and benefit calculations above are based on assuming no calorie compensation. Given the wide range of calorie compensation found in the literature, this is a significant area of uncertainty in our analysis. As a result, we have calculated a low, central and high net present value scenario based on different levels of calorie compensation. The calorie compensation adjusted benefit and annual lost profit figures are presented below in Table 20.

Table 20: Option 3: Calorie compensation adjusted benefit and lost profit figures

Benefit	Scenarios		
	Low (100% compensation)	Central (40% compensation)	High (0% compensation)
Monetised health benefit	£0m	£1.7bn	£2.9bn
NHS savings	£0m	£1.2bn	£2bn
Social care savings	£0m	£233m	£387m
Economic output	£0m	£45m	£74m

Lost profit	Scenarios		
	Low (100% compensation)	Central (40% compensation)	High (0% compensation)
Retailers	£0m	£173m	£288m
Out-of-home	£0m	Not quantified - Negative	Not quantified - Negative
Manufacturers of HFSS products	£0m	£56m	£93m

Impact on consumers

224. Under these restrictions, individuals will no longer be able to take advantage of volume promotions when purchasing some items high in fat, salt, and sugar (HFSS). If firms did not change their pricing strategies, this would increase the price of these goods and reduce consumers value for money. Due to the competitive nature of the sector, we would expect firms to switch to using price cuts to promote HFSS items, lowering average prices back down to their level before these restrictions. After considering this, we still expect consumers to reduce their consumption of HFSS products.

225. As mentioned previously, there is some uncertainty regarding the effect of the policy on individuals, with some people possibly losing out if certain products are not offered at a reduced price. However, following the assumptions made in this Impact Assessment, we believe consumers would be no worse off overall and there may be an increase in consumer surplus.

226. The impact on consumer surplus under this option is likely to be significantly smaller than Option 2. This is due to fact that this option applies to a smaller set of HFSS products.

Summary of costs and benefits

227. It has not been possible to quantify every aspect of the proposed policy. We will continue to work on the unquantified areas during the consultation to create robust estimates. The table below outlines the expected impact of the policy, with quantifications where currently possible, as estimated over a 25-year assessment period.

Table 21: Summary of costs and benefits – Option 3 (£m)

Group affected	Impact	Low estimate (100% compensation)	Central estimate (40% compensation)	High estimate (0% compensation)
Retailers	Transition – Familiarisation	-0.7	-0.7	-0.7
	Transition – HFSS assessment	-1	-1	-1
	Lost profit	0	-173	-288
Total retailer impact		-2	-175	-290
OOH food sector	Transition – Familiarisation	-1.2	-1.2	-1.2
	Transition – Initial HFSS assessment	-2	-2	-2
	Lost profit	Not quantified - Negative	Not quantified – Negative	Not quantified – Negative
Total OOH sector impact		-3	-3	-3
HFSS manufacturers	Lost profit - retail sales	0	-56	-93
	Lost profit - OOH sales	Not quantified - Negative	Not quantified - Negative	Not quantified – Negative
Total HFSS manufacturer impact		0	-56	-93
Government	NHS savings	0	1,178	1,963
	Social care savings	0	233	387
	Enforcement	-24	-24	-24
Total Government impact		-24	1,387	2,326
Wider society	Health Benefits	0	1,745	2,909
	Economic output	0	45	74
	Consumer surplus	Not quantified	Not quantified	Not quantified
Total wider society impact		0	1,790	2,983
NPV		-30	2,940	4,920

Option 4 - No more than 20% of sales from volume offers on food and drink per year come from HFSS products included in Public Health England's sugar and calorie reduction programmes and the SDIL

Costs to Retailers and Manufacturers

Transition costs

Familiarisation

228. This option is more complicated than the straightforward restrictions considered in Options 2 and 3. As a result, it seems likely that it would take longer for individuals to familiarise themselves with the regulations. Compared to Options 2 and 3, we assume it will take twice as much time for a manager to familiarise themselves with the regulations. For small business we assume it will take one manager two hours to familiarise themselves with the regulations and plan their new promotion strategy. The time taken for initial familiarisation with the scheme will vary between businesses depending on the size and scale of operations. It might be expected that larger businesses will require more familiarisation time as different managers will need to be briefed. Therefore, we assume familiarisation will require 30 hours for chain retailers. We would welcome any further evidence on this as part of the consultation.
229. Adjusting the calculations for Options 2 and 3 for this additional time results in initial familiarisation costs of £88k. To take account of the uncertainty surrounding wage rates, sensitivity analysis has been conducted using the maximum and minimum wage rate percentiles. This indicates that the familiarisation costs to business could range between £59k and £177k.
230. Businesses will also need to brief their outlets, so they are aware of the new regulations and the monitoring process. We expect that sharing this information with each outlet takes one manager one hour, costing £662k in our best estimate. The cost of sharing the information with all outlets could range between £443k to £1.3m.
231. Overall, this suggests that total familiarisation costs could range between £502k and £1.5m, with a central estimate of £750k.

Product assessment

232. As under Options 2 and 3, product assessment in the retail sector is expected to cost £1m.

Ongoing monitoring costs

233. To ensure only 20% of sales from volume promotions on food and drink per year are from HFSS products included in Public Health England's sugar and calorie reduction programmes and the SDIL, businesses will need to monitor their sales closely and adjust their promotion strategy if necessary.
234. We assume that this would take small businesses around an hour per month, or 12 hours per year. For chain retailers we assume this process takes an additional 15 hours per month, or 180 per year. During this time a manager would look at sales data and assess whether the business will reach the target over the year. If a promotion exceeded or fell short of sales expectations, upcoming promotions may need to be adjusted.
235. The time taken to monitor sales from volume promotions is likely to depend on the form and content of the information currently held by stores. If electronic information on the sale of products is collected then simple rules could be applied to this data to monitor progress against the target. Businesses might also incur a one-off cost associated with recoding sales data and improving data collection.
236. Managers and directors in retail and wholesale earn on average £16.12 per hour (including on costs). Consequently, we expect monitoring costs of £530k per annum for retailers. We assume this information and any updates to promotion strategies can be shared using current processes, without the need for extra meetings with individual outlets.
237. Due to the uncertainty regarding the hourly wage, we have conducted sensitivity analysis using the maximum and minimum wage rate percentiles. This indicates that these costs could range between £460k and £1.4m per year.

Reduction in profits

238. As mentioned previously, retailers are expected to plan promotions to maximise profits. Consequently, any restriction on their ability to do this is expected to reduce profits.
239. To estimate the impact of this option on retailers profits we first need to consider how they will alter the range of promotions they offer so that no more than 20% of sales from volume offers on food and drink per year come from HFSS products included in Public Health England's sugar and calorie reduction programmes and the SDIL. There are several different ways retailers could reach this target:
- Retailers could promote other products using volume offers much more heavily, thereby increasing the proportion of total sales which they make up;
 - They could reduce the number of volume offers they use to promote the included HFSS products, decreasing the proportion of sales which these products represent;
 - Or they could do a combination of the above.
240. How retailers adjust their promotion strategies to meet this target is a significant area of uncertainty in our analysis. It's possible, for example, that businesses might decide not to offer any HFSS products on volume promotion at all. Furthermore, any increase in sales of other products would act to offset some of the impact of this option on businesses and the expected health benefits for individuals. As a result, this type of behaviour change could have a significant impact on the estimated net present value and we would welcome any further evidence on this as part of the consultation.
241. The calculations below assume that retailers adjust their promotions so they just meet the 20% target. It's possible that some retailers might already be below this target and others might adjust their promotions so they are considerably below this level. As a result, these calculations may be a slight overestimate.

- **How would retailers adjust their promotion strategies to meet the 80/20 target? (Consultation question 49)**

242. It seems likely that retailers would need to work hard to increase the amount of non-HFSS products bought on promotion, with them possibly needing to offer larger discounts and the perishable nature of fruit and vegetables, for example, limiting the amount of these products consumers will be willing to purchase. Therefore, we have based our modelling on the assumption that retailers decrease the amount of HFSS volume offers they run to ensure they just meet the target while keeping the amount of non-HFSS volume promotions constant.
243. Without a subsequent price adjustment by retailers, reducing the amount of HFSS volume promotions would increase the average price of goods. Due to the highly competitive nature of the sector, we would expect retailers to subsequently reduce prices. To assess the impact of this we again assume that retailers reduce average prices back to their pre-regulation level using price cuts. This offsets some of the sales that are at risk and the estimated impact on calorie intakes.

Proportion of sales which are at risk

244. We previously estimated that the products listed in [Annex D](#) account for around 38% of GB food sales and 65% of these sales would be considered HFSS by the 2004/05 NPM. Taken together this suggests that around 25% of current food and drink sales from volume offers come from HFSS products included in Public Health England's sugar and calorie reduction programmes and the SDIL. This indicates that to reach the target, while keeping the amount of non-HFSS volume promotions constant, retailers would need to decrease the amount of the included HFSS items sold using volume promotions by around 25%.
245. In Table 10 we previously estimated that 5.9% of the volume of HFSS items sold are due to Multi-buy and other volume promotions generating extra sales. This suggests that removing 25% of HFSS volume promotions would reduce the total volume of the included HFSS products sold by around 1.5%.

Retailers' price adjustment

246. Reducing the amount of the included HFSS items bought on volume promotion by 25% would mean that an equivalent proportion of the previously subsidised¹⁰¹ sales identified in Table 10 would now be bought at full price. This equates to around 3.1% of the included HFSS products previously sold. Taken together, this suggests that meeting the target would result in these products being sold at an average 'effective' price of 84.6% of undiscounted levels. Comparing this with the fact that both price and volume promotions currently result in an average 'effective' price of 83.3% of undiscounted prices, implies that meeting this target would increase average prices by around 1.6%.

247. To illustrate the potential impact of a restriction on volume promotions, we therefore assume that retailers would subsequently reduce the price of included HFSS products by 1.6% using price cuts.

248. As mentioned above, the initial impact of reaching this target would be to reduce volume of the included HFSS products sold by 1.5%. Using the price discount specific price elasticity of demand calculated in option 2, suggests that the subsequent price decrease by retailers switching from volume promotions to price cuts increases sales of HFSS products by 1.1%, which is roughly equivalent to 1% of the total volume sold before the restrictions were introduced. This implies a reduction in sales of the included HFSS food and drink of 0.4% of their current volume, or 0.4% of the current sales value.

Impact on HFSS food and drink sales and profits

249. Using this figure and following the same methodology as outlined in Option 3 implies a reduction in sales of around £81m. Applying a 6% gross profit margin suggests annual lost profits of around £5m. This calculation considers the impact of the policy on Great Britain. Reducing the costs in proportion with England's 86.6% share of the GB population, results in lost retailer profits of £4.2m per year.

250. Using the same methodology as under Option 2, we estimate that restricting volume promotions of HFSS items would reduce manufacturer sales by around £53m. Applying the 6% profit margin used previously suggests an annual reduction in profits of around £3m. Adjusting for the expected size of the English market and UK shareholders implies lost profits of £1.4m per year.

Costs to the out-of-home sector

Transition Costs

Familiarisation

251. We assume that on average, it would take a manager of a small or medium business on average two hours to read and become familiar with the regulations. Again, we assume that larger businesses require 30 hours of familiarisation time.

252. Adjusting the calculations for Option 2 and 3 to reflect the higher workload, we estimate that familiarisation costs for OOH businesses under Option 4 would amount to £870k.

253. Businesses would also need to brief their outlets, so they are aware of the new regulations and the monitoring process. We expect this to take one manager one hour, costing £758k for all 55,800 outlets. This brings total familiarisation cost for OOH businesses up to £1.6m (see Table 22).

Table 22: Familiarisation cost by sector, England only

Sector	SIC Code	No. of enterprises ¹⁰²	Small/medium businesses	Large businesses	Familiarisation costs (£ '000s)		
					Best estimate	Lower estimate	Upper estimate
Licensed restaurants	56101	8,190	8,100	90	£257	£194	£330
Unlicensed restaurants and cafes	56102	3,120	3,000	120	£130	£99	£168
Take away food shops and mobile food stands	56103	2,365	2,330	35	£78	£59	£100
Other food serving activities	56290	300	275	25	£18	£13	£23

¹⁰¹ This is the sum of the Stolen, Cannibalised, Displaced and Subsidised categories.

¹⁰² Data from the Inter-Departmental Business Register can be accessed using the NOMIS service provided by the Office for National Statistics: <https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?theme=49>

Public houses and bars	56302	8,265	8,230	35	£238	£180	£306
Hotels and similar accommodation	55100	3,705	3,570	135	£152	£115	£196
Total initial familiarisation costs					£872	£659	£1,123
Cost of briefing outlets					£758	£573	£975
Total familiarisation cost OOH					£1,630	£1,232	£2,098

Product Assessment

254. As under Options 2 and 3, product assessment in the OOH sector is expected to cost £1.7m.

Ongoing monitoring costs

255. To ensure only 20% of sales from volume promotions on food and drink per year are from HFSS products, businesses will need to monitor their sales closely and adjust their promotion strategy throughout the year if necessary.

256. We assume small and medium businesses in the out of home sector, having familiarised themselves with the regulations, will choose not to offer volume promotions on HFSS products. Many businesses, such as independent restaurants, do not frequently offer volume promotions on the foods subject to this proposed restriction. It seems likely that there are only a small number of small and medium sized businesses in this sector that do offer volume promotions on these items. As a result, we assume these businesses would choose to remove volume promotions altogether, rather than incur the administrative costs associated with adhering to the regulation.

257. We expect that larger businesses are going to monitor their volume promotions the same way as retailers. If it takes one manager 15 hours a month (or 180 hours a year) to monitor the sales due to volume promotions it would cost £1.1m across all 440 large businesses. We assume an hourly pay of £10.45, which has been uplifted by 30% to £13.60 to take on-costs into account. There are uncertainties regarding the hourly pay and therefore we have conducted sensitivity analysis, finding that the monitoring costs for large OOH businesses could range from £0.8m to £1.4m.

258. We assume this information and any updates to promotion strategies can be shared using current processes, without the need for extra meetings with individual outlets.

259. Again, the time taken to monitor sales from volume promotions is likely to depend on the form and content of the information currently held by stores. If electronic information on the sale of products is collected then simple rules could be applied to this data to monitor progress against the target. Businesses might also incur a one-off cost associated with recoding sales data and improving data collection.

Out-of-home profits

260. As discussed under Option 2, we do not have information on the use and impact of volume offers in the out-of-home sector. While there will be a negative impact on OOH profits, we are therefore unable to quantify it at this stage. We would expect the loss in profit here to be substantially smaller than that for Option 2, reflecting the smaller range of products in scope.

Reformulation

261. As mentioned previously some manufacturers might respond to these restrictions by reformulating their products. The costs of any reformulation will likely vary substantially from one product to another, depending on the amount of changes that need to be made and the cost of alternative ingredients added to products.

262. Furthermore, any effort by manufacturers to reformulate their products would only be pursued if the expected returns were greater than not doing so. As such, we would expect the benefits of reformulation to outweigh the costs to retailers and manufacturers.

Costs to Government

Enforcement costs

263. To enforce the legislation, the promotion of these products will need to be checked as part of normal inspection visits.
264. There will be one-off transition costs to local authorities as trading standards officers (TSOs) familiarise themselves with the new regulations. Compared to Option 2 and 3, we estimate it will take more time for TSOs to familiarise themselves with the new regulations. Assuming familiarisation and dissemination of information to other TSOs will take a total of 4.5 hours per local authority, we estimate that familiarisation costs for all 326 local authorities would be around £42k.
265. Assuming retail outlets are visited once every 3.5 years¹⁰³, we estimate there will be 11,700 visits per year. We also expect each inspection to take more time than under Options 2 and 3. We estimate the additional time required at each outlet for paperwork-based checks is 30 minutes per inspection. Consequently, the total staff costs for enforcement in retail stores are around £168k per annum. Likewise, TSOs inspect OOH outlets every two years, resulting in 28,000 visits and costs of £399k per annum. Total enforcement costs are therefore £567k per annum.
266. DHSC is proposing to reimburse local authorities for the cost of enforcing this policy. Where a policy is placing an additional cost on the department, it is DHSC policy to convert this into an opportunity cost. This is done by estimating the value of the health benefits this displaces from the fixed health budget.
267. At the margin, it is estimated that the NHS can purchase a Quality Adjusted Life Year (QALY) for £15,000, which in turn is then valued at £60,000 by society. Dividing the yearly enforcement costs by this figure and multiplying by society's valuation of a QALY, implies that the opportunity cost of this funding is £2.3m per annum, with the opportunity cost of the initial familiarisation costs valued at £168k.

Consumers

Health Benefits

268. Previously, we estimated that this option might be expected to result in a 0.4% reduction in the quantity of included HFSS food and drink items sold. DHSC analysis of Kantar Worldpanel data suggests that the foods listed in Annex D account for around 45% of calories purchased. Further analysis of 2,000 food and drink products in Kantar Worldpanel data suggests that around 69.7% of calories from the products included in Public Health England's sugar and calorie reduction programmes and the soft drinks industry levy (SDIL) come from HFSS food and drinks. Following the calculation methodology described in Option 2 and using these figures to adjust our estimates implies a 0.1% reduction in calorie consumption.
269. Again, we assume that children consume a higher number of HFSS products compared to adults. Therefore, we calculate reductions for adults and children separately based on their calorie intakes recorded in the National Diet and Nutrition Survey. The impacts for specific age-gender groups are displayed in Table 23 below.

Table 23: Current calorie consumption and expected reductions¹⁰⁴

	Males				Females			
	4-10	11-18	19-64	65+	4-10	11-18	19-64	65+
Mean daily calorie intake	1521	1933	2107	1838	1401	1617	1596	1491
Calorie reduction	2	2	2	2	2	2	2	1

270. This estimated reduction in calorie intake is converted into changes in average BMI and subsequent healthcare outcomes through a modelling process discussed in Annex A – DHSC Calorie Model and in DHSC Calorie Model Technical Consultation Document.

¹⁰³ <http://www.tradingstandards.wales.org.uk/help/foodinspect.cfm> and http://www.hullcc.gov.uk/portal/page?_pageid=221,52448&_dad=portal&_schema=PORTAL indicate this to be a plausible assumption (all accessed 13/06/2018)

¹⁰⁴ Current mean daily calorie consumption is based on DHSC analysis of years 5-6 of the National Diet and Nutrition Survey. As discussed in Annex A, self-reported data such as the NDNS suffer from considerable underreporting.

271. As mentioned previously there is thought to be significant levels of under-reporting present in the food diaries collected for the National Diet and Nutrition Survey. As a result, it is likely that the calorie reductions above are significant underestimates.

272. Over 25 years, discounted health benefits through reduced mortality and morbidity are estimated at around 16,000 Quality Adjusted Life Years (QALYs), or £0.7bn at £60,000 per QALY. Reduced morbidity would also result in reduced cost pressures to the NHS. There would be additional health benefits to the population from reinvesting these savings back into the NHS. These are estimated at £0.5bn over the 25-year assessment period. Social care savings would amount to around £96m and reduced premature mortality would be expected to deliver an additional £18m in economic output through additional labour force participation.

Reformulation

273. If businesses reformulated their products or created new healthier products, this would lead to further indirect health benefits for consumers. However, due to the uncertainties surrounding how much reformulation might take place we have not estimated the impact of any potential reformulation. Consequently, it is possible that the health benefits presented above are an underestimate.

Adjusting for compensating behaviour

274. Again, it is possible that consumers will adjust their consumption or purchasing behaviour in response to consuming fewer calories or alternative marketing strategies.

275. As for Options 2 and 3, the cost and benefit calculations above are based on assuming no calorie compensation. Given the wide range of calorie compensation found in the literature, this is a significant area of uncertainty in our analysis. As a result, we have calculated a low, central and high net present value scenario based on different levels of calorie compensation. The calorie compensation adjusted benefit and annual lost profit figures are presented below in Table 24.

Table 24: Option 4: Calorie compensation adjusted benefit and lost profit figures

Benefit	Scenarios		
	Low (100% compensation)	Central (40% compensation)	High (0% compensation)
Monetised health benefit	£0m	£0.4bn	£0.7bn
NHS savings	£0m	£0.3bn	£0.5bn
Social care savings	£0m	£58m	£96m
Economic output	£0m	£11m	£18m

Lost profit	Scenarios		
	Low (100% compensation)	Central (40% compensation)	High (0% compensation)
Retailers	£0m	£43m	£71m
Out-of-home	£0m	Not quantified - Negative	Not quantified - Negative
Manufacturers of HFSS products	£0m	£14m	£23m

Impact on consumers

276. Under these restrictions, individuals will no longer be able to take advantage of volume promotions when purchasing some HFSS products. If firms did not change their pricing strategies, this would increase the price of these goods and reduce consumer's value for money. Due to the competitive nature of the sector, we would expect firms to switch to using price cuts to promote HFSS items, lowering average prices back down to their level before these restrictions. After considering this, we still expect consumers to reduce their consumption of HFSS products.

277. There is some uncertainty regarding the effect of the policy on individuals, with some people possibly losing out if certain products are not offered at a reduced price. However, following the assumptions made in this Impact Assessment, we believe consumers would be no worse off overall and there may be an increase in consumer surplus.

Summary of costs and benefits

278. It has not been possible to quantify every aspect of the proposed policy. We will continue to work on the unquantified areas during the consultation to create robust estimates. The table below outlines the expected impact of the policy, with quantifications where currently possible, as estimated over a 25-year assessment period.

Table 25: Summary of costs and benefits – Option 4 (£m)

Group affected	Impact	Low estimate (100% compensation)	Central estimate (40% compensation)	High estimate (0% compensation)
Retailers	Transition – Familiarisation	-0.8	-0.8	-0.8
	Transition – HFSS assessment	-1	-1	-1
	Ongoing monitoring costs	-9	-9	-9
	Lost profit	0	-43	-71
Total retailer impact		-11	-53	-82
OOH food sector	Transition – Familiarisation	-1.6	-1.6	-1.6
	Transition – HFSS assessment	-1.7	-1.7	-1.7
	Ongoing monitoring costs	-18	-18	-18
	Lost profit	Not quantified - Negative	Not quantified - Negative	Not quantified - Negative
Total OOH sector impact		-22	-22	-22
HFSS manufacturers	Lost profit - retail sales	0	-14	-23
	Lost profit - OOH sales	Not quantified	Not quantified	Not quantified
Total HFSS manufacturer impact		0	-10	-23
Government	NHS savings	0	292	487
	Social care savings	0	58	96
	Enforcement	-48	-48	-48
Total Government impact		-48	302	535
Wider society	Health Benefits	0	433	721
	Economic output	0	11	18
	Consumer surplus	Not quantified	Not quantified	Not quantified
Total wider society impact		0	444	739
NPV		-80	660	1,150

One-in-three-out calculation

279. Only direct impacts on business should be counted for one in three out purposes. Losses of profits to retailers and others in the supply chain due to reduced consumption of HFSS products are considered here as a direct impact on business. We consider that firms make decisions on both undiscounted and discounted prices jointly and simultaneously. As such, we consider the direct impact on profits to be the change in profits experienced once firms have adjusted their pricing strategies to account for the constraint imposed by this policy.
280. For one in three out and Equivalent Annual Net Direct Cost to Business (EANDCB) purposes a “GDP approach” is adopted to assess the direct impact on UK-based activities. This requires an assessment of the proportion of the gross value added by an activity that is undertaken by businesses based in the UK. For retailers we assume 100% of the profits come from companies with 100% UK based activity. For manufacturers, we assume that 49% value added is UK based, with this being the proportion of food that was supplied domestically in 2016.
281. It has not been possible at this stage to quantify all impacts to business - as such, we present only a partial estimate of the total EANDCB. Work will continue during the consultation to refine and extend the scope of this estimate. Our partial assessment of the EANDCB for the central estimate of Option 3 is £11.7m in 2014 prices and discounted to 2015.

Sensitivity and risk analysis

Interaction of policy effects

282. As mentioned previously, the estimates presented above consider the impact of restricting the placement of HFSS products in isolation to the other policies announced as part of the *Childhood obesity: a plan for action* or any possible future actions by government. It is recognised that there will be interactive effects between this policy and the others being proposed or already enacted. This section considers what form these interactive effects are likely to take, and what impact this will have both on reducing obesity and on imposing costs to business.
283. The health benefits have been estimated by modelling a reduction in BMI due to a decrease in calorie consumption. As part of the *Childhood obesity – a plan for action* Public Health England launched the sugar and calorie reduction programmes. These programmes aim to encourage food manufacturers to remove 20% of the sugar and calories in certain products. If successful, both of these schemes will reduce the expected fall in calorie consumption and the benefits from the restrictions considered in this Impact Assessment.
284. There is a well-recognised relationship between the use of price promotions and placement of goods in prominent locations around stores. The individual impacts of restricting these activities could therefore differ from the combined impact of implementing both. It is not clear if each policy would reinforce the effectiveness of the other, or if their individual effectiveness would be diminished by pursuing both policies.
285. The costs of assessing the products sold by retailers have been identified in both this Impact Assessment, and the one on restricting place promotions. As a result, there will be double counting of costs if both policies are implemented.
286. Due to the substantial number of policies which are being consulted on, the potential interactions between options have not been quantified.

Critical value analysis

287. As mentioned previously, it is possible that wider factors, such as changes to consumer behaviour, could offset the expected calorie reduction from this policy. To assess the impact of calorie compensation, we consider the degree of offsetting required to result in a neutral net present value.
288. Our high estimate for Option 3 does not include an adjustment for calorie compensation and estimated the total benefits of the policy to be £5.3bn over the 25-year period assessed. Total costs

are valued at £0.4bn in the high cost scenario over the same period. This suggests that that around 92% of the direct benefits of the policy would need to be offset for the policy to not be deemed socially beneficial.

289. However, as mentioned previously any offset would depend on additional consumption, and thus further profits to industry. As a result, most of the costs and benefits of the policy tend to vary together. Considering this suggests that 99% of the benefits of the policy would need to be offset for the policy to not be considered socially beneficial.

Sensitivity analysis

290. It is recognised that many of the calculations within this Impact Assessment currently only generate illustrative costs based on plausible assumptions. The specific choices of these assumptions can have a substantial impact on the final estimates. We have selected a few variables for sensitivity analysis based on the degree to which they are uncertain, and the extent to which they determine the direction and magnitude of the policy's NPV. These variables are:

- Retailers' reaction to the regulation,
- The various factors underlying transitional cost calculations,
- The various factors underlying the lost profit calculations,
- The proportion of calories from included products.

291. The calculations performed below are for the costs and benefits of the illustrative preferred option, Option 3. Similar uncertainties exist around the figures calculated for all other options. As the same calculation methodology has been used across each option, we would expect the impact of variables differing from our central assumptions to be similar for all options.

Retailers' reaction to the regulations

292. Instead of converting volume offers into price cuts, retailers could also decrease general prices to achieve the pre-regulation level¹⁰⁵. This would result in higher costs for businesses and higher health benefits as can be seen in Table 26.

Table 26: Retailers decrease the general price level instead of switching to price cuts

Option 3, £m	Base case	Reduction in price level
Retailer profit loss	-173	-266
Manufacturer profit loss	-56	-86
Total benefits	3,201	4,926

Transitional costs

293. Transitional costs to both retailers and out-of-home stores have been identified due to the need to assess whether products are considered HFSS. These costs are dependent on the time taken to assess products and the number of products (or menu items) requiring assessment per location. Rather than assessing these variables individually, the combined impact of raising or lowering them simultaneously is considered.

294. For both the retail and out-of-home sector, the high cost scenario is based on doubling the number of products to be assessed at each store, and increasing the time required to assess products (by 50%) to 3 minutes.

295. The result of varying these assumptions is shown in Table 27 below. While there is a clear impact on costs faced by industry, these remain small relative to the benefits when considered over a 25-year assessment period.

¹⁰⁵ To estimate the impact of a permanent change in the price level on demand for HFSS products, we use a report by [Tiffin et al.](#) This report was commissioned by the Department for Environment, Food and Rural Affairs to provide detailed evidence of how UK consumers' food and drink purchases respond to price changes. Taking the average of the 'fats' and 'sweets' food groups over this time suggests that HFSS products have a price elasticity of demand of -0.53.

Table 27: Varying transition cost assumptions, 25-year present values

Option 3, £m	Base case	High cost
Retail transition cost	-1.7	-2.5
OOH transition cost	-2.9	-3.3

Manufacturer and retailer profits

296. When estimating the impact on manufacturers of HFSS products we only consider the impact on UK shareholders. Since the figure for the share of manufacturer profits retained in the UK is not known, we assumed 49% based on the proportion of food that was supplied domestically from within the UK in 2016¹⁰⁶.

297. We test a high cost scenario by assuming 100% of manufacturer profits are retained in the UK and so the full cost is included in our calculations and a low-cost scenario whereby the estimate is halved to 24.5%. Results for each scenario are presented in Table 28 below. Even under the extreme scenario, the policy is found to deliver a substantially positive NPV.

Table 28: Varying proportion of manufacturer profits retained in the UK, 25-year present values

Option 3, £m	Low cost	Base case	High cost
% retained in UK	24.50%	49%	100%
Manufacturer profit	-28	-56	-105
Total costs	-174	-257	-307

298. To estimate the impact on profits for retailers and manufacturers we have considered profit margins of 6%. Here, we test the effect on lost profit if margins are significant lower or higher. Results for each of these scenarios can be found in Table 29 below.

Table 29: Varying profit margins for manufacturers and retailers, 25-year present values

Option 3, £m	Low cost	Base case	High cost
Profit margin retailer	2%	6%	10%
Retailer profit	-58	-173	-288
Profit margin manufacturer	3%	6%	12%
Manufacturer profit	-28	-56	-111

299. Furthermore, we have assumed that retailers will reduce the permanent price level of products after a ban on promotion in such a way that the current price level is kept. However, we also want to consider a case in which prices are not fully reduced. Overall, varying this assumption results in more lost profit for retailers but higher health benefits (see Table 30).

Table 30: Varying the price reduction by retailers after promotions are banned, 25-year present value

Option 3, £m	Base case	High cost
Retailer price reduction	6.3%	3.2%
Retailer profit	-173	-374
Manufacturer profit	-56	-120
NHS savings	1,178	2,547
Social care savings	233	502
Health Benefits	1,745	3,774
Economic output	45	96

¹⁰⁶ DEFRA (2016) Food Statistics Pocket Book, <https://www.gov.uk/government/statistics/food-statistics-pocketbook-2016>

The proportion of calories from included products

300. In our calculations for Option 3 we estimated that HFSS products make up 69.7% of calories consumed from the products included in Public Health England's sugar and calorie reduction programmes and the soft drinks industry levy (SDIL). This assumption has been varied in Table 31 below.

Table 31: Varying the calorie share of HFSS products

Option 3, £m	Low calorie share	Base case	High calorie share
HFSS calorie share	60%	69.7%	80%
Retailer profit	-173	-173	-173
Manufacturer profit	-56	-56	-56
NHS savings	1,014	1,178	1,353
Social care savings	201	233	267
Health Benefits	1,503	1,745	2,004
Economic output	38	45	51

Specific Impact Tests

Small and Micro Business Assessment

301. This section considers the estimated impact specifically on small and micro businesses from both options. The calculations below consider the costs under our central estimate with 40% calorie compensation:

- Transition costs to retailers and the out-of-home sector associated with familiarisation and the assessment of products
- Retailer and out-of-home profits arising from the sale of HFSS products
- Profits for manufacturers of HFSS products

Transition costs and product assessment

Option 2 and 3

302. Based on the IDBR dataset, we estimate that the regulations would affect approximately 1,680 small retailers across England. However, we are unable to calculate the number of outlets owned by small businesses from the IDBR data. Assuming each small business has three outlets would suggest that 5,040 retail outlets in total belong to small businesses.

303. For Options 2 and 3, we estimate that assessing products for these retailers would cost around £0.3m in the UK.

304. The familiarisation cost for those businesses amounts to around £30k in Options 2 and 3.

305. Based on the IDBR data, we estimate that there are 23,295 small businesses in the out-of-home sector that would be affected by these regulations. It seems likely that an out-of-home food outlet will require more staff than a comparable food retail store, with people needed to both prepare and serve the food. As a result, we assume that on average each small out-of-home food business has 1.5 outlets. Implying there are approximately 34,943 outlets belonging to small businesses in England.

306. In the out-of-home sector, the total costs of familiarisation have been estimated at £0.3m, and the total costs of product assessment at £0.6m for both Option 2 and 3

Option 4

307. For Option 4 the familiarisation costs for small retail business are estimated to be around £54k, with the costs of assessing products being around £0.3m. The cost of monitoring progress against the 20% target is estimated to be around £0.1m for these businesses.

308. In the out-of-home sector, the total familiarisation costs for small businesses under Option 4 are estimated to be £0.6m, with the costs of assessing products being around £0.6m.
309. As mentioned earlier we assume small and medium out-of-home businesses in the out of home sector, having familiarised themselves with the regulations, will choose not to offer volume promotions on HFSS products. Therefore, the monitoring costs for these small businesses are assumed to be £0.

Retailer and out-of-home profits

310. 'Symbols and Independents' and 'Other outlets' have been identified as accounting for 4.9% of GB grocery sales. Not all of this market share will be small and micro businesses, as certain large retailers fall into these categories. However, considering impacts on these two categories can give an upper estimate of the potential impact on small and micro retailer profits. In contrast, ONS retail sales data find that 9.2% of sales in non-specialised food stores in 2016 occurred in 'small businesses'. We therefore consider the impact on profits under both market shares.
311. Assuming a proportionate use of promotions across retailers, we might expect the loss in retailer profits from this restriction to fall proportionately on the 4.9/9.2% section of the market identified above. This would suggest small retailers in England could experience reduced profits of between £1.6m and £3.1m under Option 2, between £0.8m and £1.6m under Option 3 and between £0.2 and £0.4 under Option 4. We have assumed that 40% compensation by customers will take place under our central estimates. Consequently, costs for small businesses amount to between £1m and £1.9m for Option 2, between £0.5m and £0.9m for Option 3 and between £0.1m and £0.2m under Option 4.
312. As it has not been possible to estimate the potential impact in the out-of-home sector, it is also not possible to determine the degree to which small and micro businesses might experience reduced profits.

Profits for manufacturers of HFSS products

313. It is not currently clear what proportion of HFSS items sold in retailers are sourced from small and micro manufacturers.

Equality Test

314. To assess the potential impact of the proposed policies against the governments duties under the Equality Act 2010 a separate [Equality Analysis](#) has been produced. This considers the effect of all the policies being considered as part of the second chapter of the governments' childhood obesity plan.

Inequality Test

315. A consideration has been made to consider the Secretary of State for Health and Social Care's duty to reduce inequalities with respect to benefits from the health service (under section 1C of the NHS Act 2006).
316. Included in *Childhood obesity - a plan for action: Chapter 2*, is a commitment to significantly reduce the gap in obesity between children from the most and least deprived areas by 2030. The best data source for inequalities in childhood obesity is the National Child Measurement Programme, which measures children in reception and in year 6. The latest data shows us that obesity rates are significantly higher in more deprived areas of the UK at reception and year 6. Furthermore, the obesity rate inequality gap grows as children move from reception to year 6 and both years' gaps in obesity prevalence have increased significantly over the last 10 years.

Obesity Rate Prevalence by IMD2015 Decile				
		Most Deprived	Least Deprived	Gap
4 - 5 years old	2006/07	12.3%	7.1%	5.1%
	2016/17	12.7%	5.8%	6.8%
10 - 11 years old	2006/07	21.5%	12.1%	9.4%
	2016/17	26.3%	11.4%	15.0%

Source: PHE analysis of National Child Measurement Programme

317. We believe the way in which multi-buy offers are used only differs slightly across all socioeconomic groups. The evidence for this is outlined below.

318. Demographic information in Kantar’s report on price promotions shows that households with children spend more on promotions compared to those without. Differences between more affluent (ABC1) and less affluent (C2DE) occupational grades are that those in the C2DE group spend slightly more on promotions than ABC1 group. Those in the ABC1 group spend more on promotions overall but less on promotions in higher sugar categories. However, these differences are small, within 2 percentage points of overall spend on promotions per household.

319. A summary of these findings is shown in Figure 10 below.

Figure 10: Demographic biases towards promotional purchasing for total food & drink and for higher sugar categories¹⁰⁷



320. Overall, given the differences are small, this suggests that promotions appeal to people from all demographic groups, with the way in which they are used being similar across all groups. This is also supported by the findings of a recent report by Food Standards Scotland, which found that there was “little or no difference in the proportion of energy purchased on promotion according to the household Social Index of Multiple Deprivation (SIMD) quintile”¹⁰⁸.

321. We also reviewed the wider literature on differences in uptake of promotions by socioeconomic status or deprivation. We found that, in contrast with the Kantar data, some of the findings in the academic literature suggest that higher socioeconomic status (SES) groups are more likely to have a greater uptake of price promotions than lower SES groups.¹⁰⁹ This is possibly due to individuals in

¹⁰⁷ Public Health England (2015) Sugar Reduction: The evidence for action - Annexe 4: An analysis of the role of price promotions on the household purchases of food and drinks high in sugar https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/470175/Annexe_4._Analysis_of_price_promotions.pdf (Last accessed 13/09/2018)

¹⁰⁸ Food Standards Scotland (2016) Foods and drinks purchased into the home in Scotland using data from Kantar Worldpanel, http://www.foodstandards.gov.scot/downloads/Food_and_Drinks_Purchased_into_The_Home_in_Scotland_report.pdf (Accessed 18/07/2018)

¹⁰⁹ Nakamura R, Suhrcke M, Jebb S et al. (2015) Price promotions on healthier compared to less healthy foods: a hierarchical regression analysis of the impact on sales and social patterning of responses to promotions in Great Britain. *American Journal of Clinical Nutrition* 2015. 10.3945

higher SES groups having a greater financial understanding and greater human capital to seek out and use promotions.^{110,111} Along with greater financial literacy, it is also possible that higher SES groups may have access to greater financial and spatial resources, enabling them to make greater use of price promotions¹¹².

322. However, the evidence did suggest that the higher uptake was accounted for by promotions on healthier products – whilst uptake for less healthy foods was similar across all SES groups.¹¹³

323. Given the evidence is mixed, it is not possible to assess the overall likely impact on inequalities at this stage. The post-implementation review will gather evidence of impact and will consider evidence of any differential impact by deprivation as part of this.

- **Do you think that the proposed policy would be likely to have an impact on people on the basis of their age, sex, race, religion, sexual orientation, pregnancy and maternity, disability, gender reassignment and marriage/civil partnership? (Consultation question 50)**
- **Do you think that the proposed policy would be likely to have an impact on people from lower socio-economic backgrounds? (Consultation question 54)**

Competition Test

Does the proposal:

1. *Directly limit the number or range of suppliers?*
 - The proposal places no direct limit on the number of retailers which can operate in the market.
2. *Indirectly limit the number or range of suppliers?*
 - The illustrative preferred policy option applies to all small, medium and large food retailers and OOH eateries equally. However, the costs to individual businesses may vary, for example due to the number of products on offer.
 - Manufacturers often discount new products to penetrate the market. Therefore, we should consider whether this policy benefits existing product lines by introducing barriers to entry. Similarly, new OOH eateries may offer price promotions to penetrate a market.
 - Since businesses will still be able to compete on grounds of absolute price level, we do not believe this to be the case.
3. *Limit the ability of suppliers to compete?*
 - The proposal does not limit businesses ability to compete on grounds of quality, geographic location, absolute price, advertisement and many other aspects on which businesses frequently compete.
 - Volume promotions are a method of competition, which will be restricted under this proposal, but we believe firms will adapt to compete on absolute price level instead.
 - Some businesses may use price discounts to a greater extent than others and therefore the policy may have a disproportionate impact on these businesses.
4. *Reduce suppliers' incentives to compete vigorously?*

¹¹⁰ Tan, P. J., & Bogomolova, S. (2016). A descriptive analysis of consumer's price promotion literacy skills. *International Journal of Retail & Distribution Management*, 44(12), 1223-1244.

¹¹¹ Kwon, K. N., & Kwon, Y. J. (2007). Demographics in sales promotion proneness: a socio-cultural approach. *ACR North American Advances*.

¹¹² Nakamura R, Suhrcke M, Jebb S et al. (2015) Price promotions on healthier compared to less healthy foods: a hierarchical regression analysis of the impact on sales and social patterning of responses to promotions in Great Britain. *American Journal of Clinical Nutrition* 2015. 10.3945

¹¹³ Ibid.

- The proposal does not exempt businesses from general competition law, introduce or amend intellectual property regime or increase the costs to customers of switching between suppliers.
- The policy does restrict businesses in their ability to offer promotional prices, and this may make pricing strategies easier for rivals to predict. This is, at least partially, offset by a benefit to consumers of more transparent pricing allowing them to make easier assessment of relative prices.

Sustainability Test

324. There is no evidence to suggest that a restriction on price promotions for HFSS products will have an impact on the sustainability of the market.

Environmental Test

325. The relationship between price promotions and food waste has been examined by WRAP¹¹⁴. Their report found that there was no “evidence to prove that food bought on promotion is more likely to be wasted, at least for those products covered by the research. However, due to the challenges encountered in achieving accurate self-reporting of food waste, this finding must be regarded as tentative”. This suggests there would be no substantial impact on the environment as a result of restricting price promotions.

326. However, supermarkets often use promotions to sell products which are close to their expiry date. It’s possible that restricting volume promotions of HFSS products could make it more difficult to sell these items before their expiry dates, thereby increasing the amount of food waste.

Justice Impact Test

327. A full justice impact test for this proposal will be carried out after the consultation has been completed and the policy details have been finalised.

Rural Proofing

328. There is no evidence to suggest that a restriction on the placement of HFSS products will have a significant impact on those living in rural areas. It is possible that a greater proportion of outlets located in rural areas belong to micro businesses which might be excluded under this policy. As a result, it is possible that these restrictions have a smaller impact on rural communities compared to those living in more urban areas.

Human Rights Assessment

329. We recognise that there may be an impact on businesses in terms of Articles 10, 14, and Article 1 of Protocol 1 of the European Convention on Human Rights and would welcome submissions addressing this.

¹¹⁴ Investigation into the possible impact of promotions on food waste, WRAP report 2011, <http://www.wrap.org.uk/sites/files/wrap/WRAP%20promotions%20report%20FINAL%20241111.pdf> (last accessed 22/10/2018)

Annexes

Annex A – DHSC Calorie Model

1. This document aims to give a brief but high-level summary of the DHSC Calorie Model. The purpose of the DHSC Calorie Model is to estimate the health and NHS cost impacts caused by a change in excess calorie consumption. Further details are provided in the [Technical Consultation Document](#).
2. The DHSC Calorie Model is a cohort-based model implemented in Microsoft Excel using an iterative approach on a yearly basis.
3. The impacts of a change in excess calorie consumption are modelled using a control and treatment scenario, with the control scenario assuming no policy implementation, and the treatment scenario assuming a calorie imbalance reduction. The effects of the policy are measured by comparing the two scenarios over a 25-year period.
4. The model simulates cohorts of adults grouped into ages 19-64 and 65-79, and children in two age groups: 4-10 and 11-18 years. It groups these broad age groups into different gender, and weight categories.
5. Early results from modelling children and adults together and comparing it to modelling adults only showed that, in a 25-year period, the health benefits are predominantly in adulthood. As most impacts on children's health resulting from obesity occur later in life, it was decided that, in modelling terms, it was preferable to only include the impact during adulthood. This simplified the model significantly without compromising its quality. While impacts are not modelled in childhood, benefits for today's children are modelled when they become adults.
6. The input to the model is the calorie imbalance reduction per day set by the policy. Changes in weight and BMI caused by the reduction in excess calories are calculated and used as a starting point for the remainder of the analysis within the model.
7. The model then considers the implications of the calorie imbalance reduction on 5 diseases associated with obesity: diabetes, coronary heart disease, stroke, colorectal cancer, and breast cancer. This is done by considering changes in prevalence and mortality rates for each disease caused by changes in BMI to calculate the number of deaths avoided in the treatment scenario. The savings to the NHS are calculated from the reduced treatment of each disease.
8. Reductions in mortality are used to calculate the impact on economic output from an increased workforce. This is done by considering everyone within a cohort to earn the median wage of a person of that age and gender, with a larger workforce present in the treatment scenario.
9. The costs of social care savings are calculated due to a reduced proportion of overweight, obese, and morbidly obese individuals and hence fewer people needing social care in the treatment scenario.
10. Changes in QALYs are calculated from the reduced number of deaths and the reduction of people living with the diseases. These are then converted into monetised QALY using a conversion of how much society values a QALY.
11. Discount rates are applied to monetary values in order to account for changes in the treatment of costs and benefits that arise over different periods of time. This allows future values to be considered at present value.
12. The calculations (which are carried out on a year-by-year basis) are summed to calculate overall changes over a 25-year period.

Annex B – HFSS Definition

1. There are several possible ways of assessing the nutritional content of food. For the purposes of this IA, it has been assumed that the healthiness of products will be defined using the Food Standards Agency's 2004/5 Nutrient Profiling Model (NPM)¹¹⁵.
2. The NPM was developed by the FSA to provide Ofcom, the broadcast regulator, with a tool to differentiate foods on the basis of their nutritional composition. Ofcom uses the outputs from the model to regulate the television advertising of foods to children.
3. It scores foods based on their nutritional content. The nutrients considered are split into two categories – A and C. The score for 'C' nutrients is subtracted from the score for 'A' nutrients to give the final score. A higher score indicates a more HFSS product.
4. 'A' nutrients consist of energy, saturated fat, total sugar and sodium. 'C' nutrients consist of fruit, vegetables and nut content, fibre and protein. Therefore, a food scoring highly on 'A' nutrients is not automatically classified as HFSS, only if it additionally scores little on 'C' nutrients.
5. Foods scoring 4 or more points, or drinks scoring 1 or more points, are classified as "less healthy". These 'less healthy' products provide the definition for HFSS products used here.
6. All food and drink are scored, there are no exemptions.

Calculations

7. There are three steps to working out the score: calculating 'A' points, calculating 'C' points and combining these into an overall score.

Calculating 'A' points

8. Total 'A' points are calculated by the following formula: (points for energy) + (points for saturated fat) + (points for sugars) + (points for sodium). The points for each nutrient are determined based on the amount of each per 100g of the food or drink, according to Table B.1 below.

Table B.1 Points scored by 'A' category nutrients per 100g

Points	Energy (kJ)	Sat Fat (g)	Total Sugar (g)	Sodium (mg)
0	≤335	≤1	≤4.5	≤90
1	>335	>1	>4.5	>90
2	>670	>2	>9.0	>180
3	>1005	>3	>13.5	>270
4	>1340	>4	>18.0	>360
5	>1675	>5	>22.5	>450
6	>2010	>6	>27.0	>540
7	>2345	>7	>31.0	>630
8	>2680	>8	>36.0	>720
9	>3015	>9	>40.0	>810
10	>3350	>10	>45.0	>900

9. A maximum of ten points can be awarded for each nutrient.

Calculating 'C' points

10. Total 'C' points are calculated by the formula: (points for %fruit, veg and nut content) + (points for fibre [either NSP or AOAC]) + (points for protein). The points for each nutrient are determined based on the amount of each nutrient per 100g/percentage nutrient component of the food or drink, according to Table B.2 below.

¹¹⁵ <http://www.food.gov.uk/sites/default/files/multimedia/pdfs/techguidenutprofiling.pdf> Accessed 18/01/2018

Table B.2 Points scored by 'C' category nutrients per 100g

Points	Fruit, Veg and Nuts (%)	NSP Fibre ^a (g)	or AOAC Fibre ^a (g)	Protein ^b (g)
0	≤40	≤0.7	≤0.9	≤1.6
1	>40	>0.7	>0.9	>1.6
2	>60	>1.4	>1.9	>3.2
3	-	>2.1	>2.8	>4.8
4	-	>2.8	>3.7	>6.4
5	>80	>3.5	>4.7	>8.0

a NSP fibre information should be used if possible. However, if this is not available then AOAC fibre information should be used.

b If a food or drink scores 11 or more points for 'A' nutrients then it cannot score points for protein unless it also scores 5 points for fruit, vegetables and nuts.

11. A maximum of five points can be awarded for each nutrient/food component. Note the restrictions on points for protein.

Combining points into an overall score

12. Overall score for a food is dependent on how many 'A' points it scores and how many points for fruit, vegetables, and nuts it scores. There are three possible situations.

Less than 11 'A' points

13. If a food satisfies this criterion then the overall score is calculated as follows:

14. Total 'A' points minus total 'C' points = (energy + sat fat + sugars + sodium) – (fruit, vegetables, and nuts + fibre + protein)

11 or more 'A' points and 5 points for fruit, vegetables and nuts

15. If a food satisfies this criterion then the overall score is calculated as the above case.

11 or more 'A' points and less than 5 points for fruit, vegetables and nuts

16. If a food satisfies this criterion then the overall score is calculated as follows:

17. Total 'A' points minus points for fruit, vegetables and nuts and points for fibre = (energy + sat fat + sugars + sodium) – (fruit, veg and nuts + fibre)

18. Note that in this case foods are not allowed to score for protein.

Annex C – Questions for consultation

- The above calculations represent illustrative transition costs. Do these calculations reflect a fair assessment of the costs that would be faced by your organisation? (Consultation question 37)
- Is it reasonable to assume that businesses will switch to using price cuts instead of volume offers to promote HFSS products? (Consultation question 47)
- To what extent are price promotions offered in the out-of-home sector? (Consultation question 48)
- Do consumers respond in a similar way to price promotions in supermarkets? (Consultation question 49)
- Are you aware of any comprehensive data sources on sales in the out-of-home food market and the nutritional content of the products sold? (Consultation question 38)
- How will these proposals affect the relationships between manufacturers and retailers (e.g. sales agreements, sales targets, the future relationships and profitability)? (Consultation question 40)
- Are you aware of any other data sources available which would improve our estimates of the number of food retailer and out-of-home food outlets? (Consultation question 39)
- Is it reasonable to assume that retailers and OOH businesses are inspected by Trading Standards every 3.5 and 2 years, respectively? (Consultation question 41)
- Is there any additional evidence that would improve our understanding of the level of compensating behaviour which might occur? (Consultation question 42)
- Is the approach used in this impact assessment suitable for assessing the impact on consumers and specifically for assessing the impact on consumer surplus? (Consultation question 50)
- How would retailers adjust their promotion strategies to meet the 80/20 target? (Consultation question 51)
- Do you think that the proposed policy would be likely to have an impact on people on the basis of their age, sex, race, religion, sexual orientation, pregnancy and maternity, disability, gender reassignment and marriage/civil partnership? (Consultation question 52)
- Do you think that the proposed policy would be likely to have an impact on people from lower socio-economic backgrounds? (Consultation question 56)

The Department of Health and Social Care would welcome any further comments regarding

- The calculations conducted in the Impact assessment
- The assumptions made in the Impact assessment

Annex D – Products included in the Soft Drinks Industry Levy and the Calorie and Sugar Reduction Programmes

Soft Drinks Industry Levy

1. In 2016, the Government announced the introduction of the Soft Drinks Industry Levy to help reduce children's sugar intakes by encouraging manufacturers to reformulate their drinks. The levy came into effect on the 6th of April 2018.
2. A drink is liable for the Soft Drinks Industry Levy if it meets all of the following conditions:
 - It has had sugar added during production, or anything (other than fruit juice, vegetable juice and milk) that contains sugar, such as honey
 - It contains at least 5 grams (g) of sugar per 100 millilitres (ml) in its ready to drink or diluted form
 - It is either ready to drink, or to be drunk it must be diluted with water, mixed with crushed ice or processed to make crushed ice, mixed with carbon dioxide, or a combination of these
 - It is bottled, canned or otherwise packaged so it is ready to drink or be diluted
 - It has a content of 1.2% alcohol by volume (ABV) or less
3. A detailed list of what is classed as sugar for the purposes of the levy can be found in the guidance published by HM Revenue & Customs¹¹⁶.
4. The levy doesn't apply to drinks that are:
 - At least 75% milk
 - A milk replacement, like soya or almond milk
 - An alcohol replacement, like de-alcoholised beer or wine
 - Made with fruit juice or vegetable juice and don't have any other added sugar
 - Liquid drink flavouring that's added to food or drinks like coffee or cocktails
 - Infant formula, follow on formula or baby foods
 - Formulated food intended as a total diet replacement, or dietary food used for special medical purposes
5. Again, a more detailed explanation of the products excluded from the levy can be found in the guidance published by HM Revenue & Customs¹¹⁷.

Calorie Reduction Programme

6. On average, both children and adults are consuming too many calories on a regular basis. Amongst the government's commitments in the *Childhood obesity: a plan for action* was for Public Health England to lead a structured and closely monitored programme to improve every day food and drink. As part of this Public Health England developed the calorie Reduction Programme to encourage manufacturers to revise and reformulate their products to lower the number of calories they contain.
7. The list of product categories to be included within the calorie reduction programme will be confirmed after engagement with stakeholders. However, Public Health England have indicated that the following product categories will be included in the programme:
 - Bread with additions (e.g. olives, cheese etc.)
 - Crisps and savoury snacks
 - Savoury biscuits, crackers and crispbreads
 - Potato Products (e.g. chips, croquettes, mashed potato etc.)
 - Sausages (raw and cooked) and sausage meat products, frankfurters, hotdogs and burgers
 - Meat, fish and vegetarian pastry pies and other pastry products
 - Cooking sauces and pastes
 - Table sauces and dressings
 - Pasta/ rice/ noodles with added ingredients and flavours

¹¹⁶ HMRC (2018) Check if your drink is liable for the Soft Drinks Industry Levy, <https://www.gov.uk/guidance/check-if-your-drink-is-liable-for-the-soft-drinks-industry-levy> (last accessed 14/09/2018)

¹¹⁷ Ibid.

- Ready meals with carbohydrate accompaniment (potato, rice, noodles, pasta, etc.) – fish, meat and meat alternatives
 - Meal centres without carbohydrate accompaniment (potato, rice, noodles, pasta, etc.) – fish, meat and meat alternatives
 - Prepared dips and composite salads as meal accompaniments (e.g. coleslaw, potato salad, guacamole, salsa etc.)
 - Pizza
 - Egg products/ dishes (e.g. quiche)
 - Food to go e.g. sandwiches boxed main meal salads etc.
8. These products have been included because they contribute significantly to children’s calorie intakes and there is scope for substantial reformulation and/ or portion size reduction. A more detailed list of products and the reformulation targets can be found in the guidance published by Public Health England¹¹⁸.

Sugar Reduction Programme

9. A further commitment in the *Childhood obesity: a plan for action* was to launch a broad structured sugar reduction programme to remove sugar from everyday products. All groups of the population, particularly children, are consuming far too much sugar. This increases the risk of excess calorie consumption and weight gain, which, over time, can lead to obesity.
10. The sugar reduction programme challenges manufacturers to revise and reformulate their products to reduce the amount of sugar they contain. A list of product categories included in the programme is below:
- Breakfast cereals
 - Yoghurt and fromage frais
 - Biscuits
 - Cakes
 - Morning goods
 - Puddings
 - Ice cream
 - Sweet confectionary
 - Chocolate confectionary
 - Sweet spreads
 - Milk based drinks and fruit juices

These products have been included because they contribute significantly to children’s sugar intakes. Again, a more detailed list of the products included in the scheme and the reformulation targets can be found in the guidance published by Public Health England¹¹⁹.

¹¹⁸ Public Health England (2018) Calorie reduction: the scope and ambition for action, <https://www.gov.uk/government/publications/calorie-reduction-the-scope-and-ambition-for-action> (last accessed 14/09/2018)

¹¹⁹ Public Health England (2018) Sugar reduction: Achieving the 20%, <https://www.gov.uk/government/collections/sugar-reduction> (last accessed 14/09/2018)