

Title: Standardised packaging of tobacco products	Impact Assessment (IA)
IA No: 3080	
Lead department or agency: Department of Health	
Other departments or agencies:	
Summary: Intervention and Options	
	Date: 17/06/2014
	Stage: Consultation
	Source of intervention: Domestic
	Type of measure: Secondary legislation
	Contact for enquiries: DH Tobacco Programme
	RPC Opinion: AMBER

Cost of Preferred (or more likely) Option				
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANCB on 2009 prices)	In scope of One-In, One-Out?	Measure qualifies as
£27.7 bn	£332m	£-31m (net gain)	Yes	Zero Net Cost

What is the problem under consideration? Why is government intervention necessary?

Tobacco use remains one of the most significant challenges to public health across the United Kingdom and is the leading cause of premature death in the UK. While rates of smoking have declined over past decades, in recent years this decline has lost momentum. The Government remains concerned about the take up of smoking by young people, the difficulty that adult smokers can have in quitting smoking and the consequences for the health of others from exposure to second hand smoke (SHS). Research evidence suggests that standardised packaging of tobacco products can reduce the appeal of tobacco products, increase the effectiveness of health warnings on tobacco packages and reduce the ability of tobacco packages to mislead consumers about the harmful effects of smoking. It could also address the contribution smoking makes to the sustaining of socioeconomic health inequalities.

What are the policy objectives and the intended effects?

The objectives of standardised tobacco packaging would be to improve public health by discouraging young people from taking up smoking, supporting quitting among smokers who want to quit and helping people who have quit to avoid relapse back to smoking. Achieving these aims will improve the health of those who never start to smoke and those who succeed in quitting smoking. There may also be wider benefits such as narrowing of health inequalities and a reduction in the levels of exposure to secondhand smoke which is particularly harmful to the health of children.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

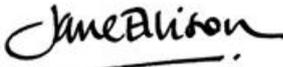
Option 1: Require changes to legislation to bring the UK in line with the European Tobacco Products Directive, to be implemented in 2016. (This is essentially a “do nothing” option).

Option 2: Go beyond the European Tobacco Products Directive in 2016 and require standardised tobacco packaging of cigarettes and hand rolling tobacco (HRT). In line with the approach set out in the consultation document, this would involve the standardisation of pack colour and shape and the removal of all branding except brand name in a standardised typeface. Relevant legal markings such as health warnings and tax stamps would be retained as well as authentication markings to reduce trade in illegal tobacco products.

Option 3: Defer a decision pending collection of evidence on experience with plain packaging in Australia. Option 2 is preferred in view of the possibility of very substantial health gains that it offers, deferral of which would be permanently detrimental to successive cohorts of young people and would-be quitters.

Will the policy be reviewed? Yes. If applicable, set review date: 5 years after policy start				
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 Yes < 20 Yes	Small Yes Medium Yes Large 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 Minister:  Date: June 2014

Summary: Analysis & Evidence

Policy Option 1

Description:

FULL ECONOMIC ASSESSMENT

Price Base 2014	PV Base 2014	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: 0	High: 0	Best Estimate: 0

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0	0	0
High	0	0	0
Best Estimate	0	0	0

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

This is essentially a "do nothing" option and hence 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	0	0	0

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

Discount rate (%)

These are defined to be 0

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 0	Benefits: 0	Net: 0		

Summary: Analysis & Evidence

Policy Option 2

Description:

FULL ECONOMIC ASSESSMENT

Price Base Year 2014	PV Base Year 2004	Time Period Years 10	Net Benefit (Present Value (PV))		
		Low: -	High: -	Best Estimate: £24.7bn	

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	-	-	-
High	-	-	-
Best Estimate	£176m-£181m	-	£2.4bn

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

Appraisal is limited to 10 years with respect to impacts upon business and upon smoking behaviour (consequential lifetime health gains and tax costs are discounted back to the year of behaviour change). Expected costs include quantified losses to the exchequer (£2.3bn), the vast majority spread out over the lifespan of smokers who quit. Transition costs to manufacturers of tobacco and of tobacco packaging, wholesalers and retailers are estimated at £176m-181m (includes £166m from brand value).

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

A reduction in the ability of tobacco companies to compete through product differentiation because of different packaging. Possible losses from a potential increase in consumption of illicit product and or product legitimately bought outside the UK. Loss of consumer's surplus associated with diminished branding.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	-	-	Optional
High	-	-	Optional
Best Estimate	-	-	£27.2bn

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

Expected benefits are the health benefits that would accrue from the reduced take-up of smoking (£4.4bn) and improved quit rates (£21.5bn), and productivity gains from fewer employees smoking (£0.8bn). There is expected to be a benefit in retail transaction times of 1.5 seconds per transaction, valued at £0.069bn over (10 years discounted). Manufacturing cost savings are estimated at £0.3bn over (10 years discounted).

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

An additional benefit is the possible enhancement of price competition between tobacco companies and the potential for accelerated product innovation to exploit other avenues for product differentiation. These represent economic benefits rather than public health benefits and could potentially jeopardise the achievement of public health benefits unless the costliness of tobacco were maintained (for example, through adjusting rates on tobacco duty). Standardised packaging may have benefits in terms of reduced morbidity and mortality due to second hand smoke exposure in homes and cars. There would be reduced costs to local authorities, and to public houses and other entertainment venues, for litter collection due to fewer discarded cigarette butts.

Key assumptions/sensitivities/risks	Discount rate (%)	1½/3½
Assumptions: limited value of loss in consumer surplus from branding.		
Risks: There is a risk of an adverse impact of standardised packaging on the non-UK duty paid segment of the market by encouraging cross-border shopping and/or a larger illicit tobacco market. If this risk occurred it would increase the losses to the Exchequer and decrease the health benefits.		
Discount rate: 1½ % for health impacts denominated in Life Years and 3½% for monetised impacts.		

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:	In scope of OIOO?	Measure qualifies as
Costs: -	Benefits: -	Net: £-31m (net gain)
		Yes
		Zero net cost

Evidence Base (for summary sheets)

What is the problem under consideration? Why is government intervention necessary?

1. Tobacco use remains one of the most significant challenges to public health across the United Kingdom and is the leading cause of premature death in the UK. While rates of smoking have declined over past decades, in recent years this decline has lost momentum. The Government remains concerned about the take up of smoking by young people, the difficulty that adult smokers have in quitting smoking, high levels of relapse of those smokers that do attempt to quit and the consequences for the health of others from exposure to second hand smoke (SHS). Tobacco use also contributes significantly to health inequalities.
2. The Government has a policy to stop the promotion of tobacco.¹ Action to stop the promotion of tobacco has been taken over many years. The Tobacco Advertising and Promotion Act 2002 (TAPA) prohibits tobacco advertising. The Health Act 2009 requires the end of tobacco displays in England (in large stores from 2012 and all other tobacco retailers in 2015). A Cancer Research UK report on plain packaging says that tobacco packaging serves multiple functions for tobacco manufactures. It is used to promote the product using the same strategies employed by other manufacturers of consumer goods, specifically packaging innovation, design and value packaging. Packaging is viewed as a key marketing tool for tobacco companies, according to both their own internal documents and also the retail press. Packaging has a wider reach than advertising and is the most explicit link between the company and the consumer.² Tobacco packaging and branding is a key element of tobacco marketing and promotion in the UK today.
3. Introducing standardised packaging³ represents a policy option for the Department of Health in England and for the Devolved Administrations in Scotland, Wales and Northern Ireland, as part of their wider comprehensive tobacco control strategies, to improve public health by reducing tobacco use. Research evidence suggests that standardised packaging of tobacco products would contribute to the Government's public health policy objectives by reducing the appeal of cigarettes, packs and brands, increasing the salience of health warnings, making perceptions of product harm and strength more accurate and reshaping smoking-related attitudes, beliefs, intentions and behaviour.
4. Tobacco control policy across the UK aims to reduce youth uptake of smoking, and to encourage and support quitting amongst smokers who wish to quit; standardised packaging is expected to have a positive impact on both.
5. Smoking rates are today broadly the same among men and women. Around two-thirds of smokers say that they started smoking regularly before the age of 18. In 2009, the Public Health Research Consortium (PHRC) published a review of young people and smoking in England. The review found that the onset of smoking is a function of individual factors (e.g. self-image), social and community factors (e.g. family circumstances) and societal factors (e.g. tobacco marketing).⁴ Moodie et al. (2008) summarise the different research undertaken on tobacco advertising and smoking uptake by young people, and has found that:

Research has consistently revealed that tobacco advertising and promotion increases the likelihood that adolescents will start to smoke, whether employing cross-sectional research, prospective research, time series studies or systematic reviews. The cumulative evidence indicates that there is a dose-response relationship, where greater exposure to advertising and promotion results in higher risk, even when controlling for known causative factors such as low socioeconomic status, parental and peer smoking... Furthermore, we know that tobacco

¹ HM Government (2011). *Healthy Lives, Healthy People: A tobacco control plan for England*. DH, London.

² Cancer Research UK (2012). *The packaging of tobacco products*. The Centre for Tobacco Control Research funded by Cancer Research UK, University of Stirling and the Open University, Stirling.

³ Standardised packaging has also been referred to as plain packaging. As packs would not be plain (for example, they would be required to have coloured picture warnings), The term standardised packaging is considered to be a more accurate description.

⁴ Public Health Research Consortium (2009). *A Review of Young People and Smoking in England*. PHRC, York.

branding is continuing to drive UK teen smoking even after TAPA (2008).⁵

6. Of particular concern is the impact of tobacco packaging on young people who might not yet be in a position to make properly informed or considered adult lifestyle choices. Growing up in homes where smoking by adults is the norm, children are more likely to become smokers themselves and to take up smoking at an earlier age, perpetuating smoking into new generations.⁶ A 15 year-old living with a parent who smokes is 80 per cent more likely to smoke than one living in a household where no one smokes.⁷ In England, around one-third of children under the age of 16 years live with someone who smokes.⁸
7. The impact of tobacco marketing (including branding) may be a key factor in youth smoking uptake. The British Medical Association says:

Young people are greatly influenced by their sense of what is normal and attractive; and this in turn is affected by the messages and imagery attached to different behaviours. Thus, particular fashions, music styles and forms of recreation become more or less popular over time. Young people's smoking is susceptible to these same forces, but in this case the associated imagery seems, for some young people at least, to remain consistently positive. This capacity to remain 'forever cool' belies the reality: smoking continues to be the leading cause of ill health and premature death in the UK.

Pro-smoking imagery originates from three overlapping sources.

First, it is part of the social milieu: young people see others – parents, peers and public figures – smoking and this reinforces the normalcy of the habit. In Great Britain, smoking still has around 10 million role models. The detritus of smoking also provides a reminder of the apparent normalcy of the behaviour.

Second, entertainment media depict smoking on a regular basis. Images of smoking are commonplace in films, television shows and magazines, and can influence the attitudes and behaviours of young people. Other forms of media such as the internet represent a growing concern in this respect.

Third, young people are exposed to the positive images of smoking generated by tobacco industry marketing. The ban on tobacco advertising in the UK has greatly restricted the more traditional forms of marketing (eg billboards); however, ubiquitous distribution, increasingly elaborate point-of-sale displays, attractive pack livery and evocative brand imagery continue to provide key marketing opportunities that influence young people.⁹

8. Research suggests that standardised packaging would help to *re-shape* social norms around the use of tobacco products, assisting people to understand that tobacco use is highly addictive and can be hugely damaging to health. According to an article in the *Bulletin of the World Health Organisation*, "for decades, the tobacco industry has taken advantage of the package as a venue for creating positive associations for their product".¹⁰
9. While smoking prevalence has fallen steadily in England since its peak in the mid-20th century, smoking rates are today higher than average among particular groups meaning that smoking has emerged as one of the most significant contributors to health inequalities in England. The association between smoking and inequalities is today apparent from evidence of who smokes. Smoking is most common among those who earn the least, and least common among those who earn the most. In 2010, smoking prevalence was more than twice as high among people in routine and manual occupations compared with managerial and professional occupations. Smoking rates are high in particular ethnic and social

⁵ Moodie, C. et al. (2008). 'Tobacco marketing awareness on youth smoking susceptibility and perceived prevalence before and after an advertising ban' in *European Journal of Public Health*. 2008, 18(5).

⁶ Buller, D., Borland, R., Woodall, W., Hall, J., Burris-Woodall, P. and Voeks, J. (2003). "Understanding factors that influence smoking uptake" in *Tobacco Control*. 12 (supplement 4), pp.iv16-iv25.

⁷ Loureiro, M., Sanz-de-Galdeano, A. and Vuri, D. (2010). "Smoking Habits: Like Father, Like Son, Like Mother, Like Daughter?" in *Oxford Bulletin of Economics and Statistics*. 72(6), pp.717-743.

⁸ Office for National Statistics (2011). *General Lifestyle Survey 2009: Smoking and drinking among adults, 2009*. ONS, Newport.

⁹ British Medical Association (2008). *Forever cool: The influence of smoking imagery on young people*. BMA, London.

¹⁰ Fong, G., Hammond, D. and Hitchman, S. (2009). 'The impact of pictures on the effectiveness of tobacco warnings' in *Bulletin of the World Health Organization*. 2009, 87:640-643.

groups. Smoking rates among people with mental health problems is significantly higher than among the general population.

10. The difference in smoking between social groups widens throughout adulthood as people from more affluent groups are more able to quit, for a variety of reasons. Differences in motivation do not account for the differences in smoking rates between social groups, as desire to quit remains broadly the same. There is likely to be a number of reasons why people from less affluent backgrounds are less successfully able to quit, including levels of addiction and the socially reinforcing nature of smoking in groups and communities where smoking rates are high.¹¹
11. Smoking is the main cause of differences in illness and death between the poor and wealthy. The Government's Healthy Lives, Healthy People White Paper published in 2010 sets out that one of the Government's key objectives will be to improve the healthy life expectancy of the population, improving the health of the poorest, fastest. The independent review into health inequalities in England, 'Fair Society, Healthy Lives', proposed 'the most effective evidence-based strategies for reducing health inequalities in England' and made the following recommendation:

*Tobacco control is central to any strategy to tackle health inequalities as smoking accounts for approximately half of the difference in life expectancy between the lowest and highest income groups. Smoking-related death rates are two to three times higher in low-income groups than in wealthier social groups.*¹²

12. In England and Wales, at least half of the excess risk of death observed in unskilled manual workers by comparison with professionals is attributable to smoking. Similar effects of smoking on health inequalities were also seen in the United States, Canada and Poland.¹³ A 28-year cohort study in Scotland examined the impact of smoking on survival between social classes, and found that the differences in survival between smokers and never smokers are much greater than those between smokers in different social positions.¹⁴
13. The total cost of treating childhood disease caused by SHS has been estimated at £23.3m per annum in the UK.¹⁵ We would expect this cost to be reduced in proportion to any reduction in parental smoking which might result from a standardised tobacco packaging policy. But, as in previous IAs related to tobacco control policies, we have not otherwise included an impact on NHS costs for the treatment of smoking-related diseases. Although recent research has claimed that quitting may lead to reduced lifetime healthcare costs, the required modelling of cost consequences of deferred mortality requires further development.¹⁶

Summary and Conclusion of Tobacco Standardised Packaging Impact Assessment

14. There is a substantial body of evidence regarding the factors associated with the uptake of smoking by young people and the factors that can inhibit smokers who wish to quit and induce relapse among smokers who have tried to quit. This evidence strongly suggests that the implementation of standardised packaging ("the intervention") could both reduce the uptake of smoking by young people and create a supportive environment for those who wish to quit. Recent research has considered the impact specifically of tobacco packaging and branding (including standardised packaging) on the self-image of smokers and on the likelihood of quitting, and has confirmed that introducing standardised packaging could bring substantial benefits for public health.

¹¹ Department of Health (2008). *Consultation on the future of tobacco control*. Department of Health, London.

¹² Marmot, M. *et al.* (2010). *Fair Society, Healthy Lives: Strategic review of health inequalities in England post-2010*. Marmot Review Secretariat, London.

¹³ Jha, P., Peto, R., Zatonski, W., Boreham, J., Jarvis, M. and Lopez, A. (2006). "Social inequalities in male mortality, and in male mortality from smoking: Indirect estimation from national death rates in England and Wales, Poland, and North America" in *The Lancet*. 368, pp.367-370.

¹⁴ Gruer, L., Hart, C., Gordon, D. and Watt, G. (2009). "Effect of tobacco smoking on survival of men and women by social position: A 28 year cohort study" in *British Medical Journal*. 339, p.643.

¹⁵ Royal College of Physicians (2010). *Passive Smoking and Children*. Royal College of Physicians, London.

¹⁶ Godfrey C, Ali S, Parrott S, Pickett K (2011). *Economic model of adult smoking related costs and consequences for England*. University of York, York.

15. Quantification of the likely scale of the impact on smoking take up and prevalence is difficult in the absence of directly comparable precedents. There is, however, experience in the UK and internationally of other tobacco control interventions, particularly those involving tobacco advertising, promotion and marketing to provide insight into expected impacts of introducing standardised packaging. Researchers who have specialised in tobacco control are in an informed and experienced position to integrate existing policy experience with the research studies on tobacco packaging. Independent academic research was commissioned by DH to gather an expert view on the likely scale of impact of standardised packaging from a range of tobacco control experts from around the world. The consensus (based on the median of reported views) of these experts is that the intervention would be expected to generate after two years:
- a decline in the proportion of 11-15 year olds who have ever smoked of three percentage points (from a baseline of 27% at the time of the research); and
 - a decline in adult smoking prevalence of one percentage point (from a baseline of 21% at the time of the research), as more people find themselves able to quit.
16. Based upon the TPD Impact Assessment²⁴ we estimate that around one tenth of this gain might plausibly be achieved by TPD without standardised packaging. The rest of the gain provides our central estimate of the incremental gain attributable to standardised packaging.
17. With the intervention sustained for ten years following the policy implementation date (the standard policy appraisal period), such shifts in smoking behaviour would generate very large health benefits – estimated in total at over 400,000 life years (discounted). These health gains, using standard DH methodology (based upon surveys of citizens’ willingness to pay for mitigation of health risks), are valued at £26bn.
18. Further benefits are estimated to include productivity gains of £0.8bn, production cost savings of £0.3bn and a reduction in retail transactions costs of £0.069bn. The gross gain of standardised packaging (that could be valued) before considering costs or unquantified impacts is assessed as £27.2bn.
19. The intervention carries quantified costs, of which central estimates are as follows (ten years’ cost, discounted):
- £10-15m in packaging manufacturers’ costs;
 - £166m loss of brand value to tobacco manufacturers and retailers;
 - £2.3bn in Exchequer losses. (Additional losses with an indicative value of around £2bn due to an increase in non-UK duty paid cigarettes will be further explored in later IAs but is not included in the NPV estimate here.)
20. Three potentially significant, but unquantified, potential costs to be considered arising from this intervention are lost consumer surplus, a rise in legal cross-border importation of legal branded tobacco from other countries in the European Union and a rise in consumption of illicit tobacco products.
21. In terms of this intervention, consumer surplus represents the loss of the ability of those who continue to smoke to gain the intangible benefit associated with smoking a particular brand that only the packaging of that brand, as it is currently available, can produce.
22. Regarding branding, it is hard to assess how many of the nine million or so people expected to continue smoking would suffer any felt loss from the absence of this particular avenue of self-expression, and to quantify the loss. Personal branding might be substituted by purchase of other branded goods. There is some further evidence that such branding carries a positional good externality¹⁰⁵: the positive branding associated with premium brands inspires embarrassment and hostility in others not able to afford such self-branding. For these reasons we have not attempted to quantify this loss.¹⁷
23. The loss associated with pack design is less easy to substitute – though it would affect only those who are purchasing such packs.

¹⁷ Note that the health externality arising from branding in encouraging smoking is not mentioned here as it is already captured (and quantified) in this Impact Assessment.

24. Those who continue to smoke may also feel as though they have suffered a restriction in freedom. However, from a societal perspective, there is reason to discount the importance of this loss of freedom. For individuals to carry and personally to display branded packets of cigarettes may contribute to encouraging others, including children, to take up smoking and to deter quitting by those who wish to quit. Tobacco packaging and branding plays a promotional role and helps to shape social norms around smoking. The freedom to have branded tobacco, therefore, carries a cost to others; and society arguably need not accord value to a freedom that involves inflicting harm on others.
25. There is a risk that the intervention may unintentionally encourage smokers who want branded tobacco to seek it from places where it is still available. People travelling from the EU may bring unlimited amounts of tax paid (but not UK tax) tobacco to the UK for their own use, subject to UK customs regulations. This is known as “cross-border shopping”. Any significantly increased level of cross-border shopping would detract from the effectiveness of the intervention in two ways:
- some who would otherwise quit will continue smoking because they can import cigarettes in branded packets, detracting from the policy’s effectiveness – and these branded packets will continue to be present in homes and elsewhere encouraging others to smoke;
 - some who would otherwise have continued to smoke cigarettes in standardised packets will purchase cigarettes from the EU for their own consumption in the UK therefore paying EU duty but not UK duty – increasing the cost of the intervention.
26. There is also a risk that standardised packaging could increase the demand for and supply of illicit tobacco (such as counterfeit tobacco, cheap “illicit whites” or products legitimately bought in the EU and illegally re-sold in the UK). Any increase in the size of the illicit market would impact on profits of those involved in the legitimate manufacture and sale of tobacco, as well as on the Exchequer. Every percentage point increase in the size of the illicit cigarette market corresponds to a loss of around £120m per annum in revenue to the Exchequer.¹⁸ There could also be impacts on the effectiveness of the intervention. Mitigating action could however be taken if the intervention causes an increase in the illicit tobacco market.
27. While the risk of increasing the size of the illicit market has been identified by some interested parties, we have not received sufficient evidence to enable quantification of these risks, notwithstanding their possible significance. These risks are considered more fully in a Risks section at the end of this IA.
28. The intervention is worth pursuing now, notwithstanding these costs and risks. We believe that the cost of delaying a decision on whether to implement the intervention (IA option 3) is too great in public health terms, particularly in view of the following considerations:
- the potential health gains are very substantial and dramatically outweigh quantified costs;
 - the deferral of such gains would adversely affect the life expectancy of large cohorts of children and adult would-be quitters in every year of deferral;
 - if standardised packaging is implemented, monitoring of extent of impacts, such as any impact on cross-border shopping or the size of the illicit market would identify where mitigating action is needed;
 - the information conveyed by such monitoring is likely to be much more directly pertinent to the policy context in the UK than that which can be gathered from other countries that have implemented the intervention (such as Australia);
 - we can already benefit from the experience of Australia in determining the detail of any legislation and in implementing the intervention.

Policy context

29. The United Kingdom is a Party to the World Health Organization’s *Framework Convention on Tobacco Control* (FCTC). The FCTC is the world’s first public health treaty and places obligations on Parties to meet the treaty objective to ‘reduce continually and substantially the prevalence of tobacco use and exposure to tobacco smoke’ and to implement comprehensive tobacco control strategies. Since the United Kingdom became a Party to the treaty in 2004, the Government has taken its FCTC obligations

¹⁸ The HMRC tax gaps publication estimates that a 9% illicit market share for cigarettes give a rise to a loss of £1,100m in duty and VAT.

very seriously. To help Parties meet their obligations under the FCTC, guidelines have been developed. While these guidelines are not binding, Parties have agreed that they reflect their consolidated view of a desirable means of fulfilling their FCTC obligations.

30. Guidelines on Article 11 of the FCTC¹⁹ suggest that:

Parties should consider adopting measures to restrict or prohibit the use of logos, colours, brand images or promotional information on packaging other than brand names and product names displayed in a standard colour and font style (plain packaging). This may increase the noticeability and effectiveness of health warnings and messages, prevent the package from detracting attention from them, and address industry package design techniques that may suggest that some products are less harmful than others.

31. Guidelines on Article 13 of the FCTC²⁰ recommend:

Packaging and product design are important elements of advertising and promotion. Parties should consider adopting plain packaging requirements to eliminate the effects of advertising or promotion on packaging. Packaging, individual cigarettes or other tobacco products should carry no advertising or promotion, including design features that make products attractive.

32. In 2007, the European Commission (EC) suggested standardised tobacco packaging as a possible policy option in its consultation on revising the Tobacco Products Directive. It stated that ‘in order to decrease the smoking initiation and to protect EU consumers on equal basis in all Member States the introduction of generic (black and white) standardised packaging for all tobacco products could be explored as a possibility to reduce the attractiveness’.²¹
33. In March 2011, the Government published *Healthy Lives, Healthy People: A Tobacco Control Plan for England*²² which set out the Government’s comprehensive, evidence-based, approach to tobacco control in England. It includes (at paragraphs 3.6 and 3.7) the commitment to explore whether there is evidence to demonstrate that plain packaging of tobacco would have an additional public health benefit, over and above the existing smoking control initiatives in place, including legislation to end the open displays of tobacco products in shops.
34. In March 2014 the European Commission’s revised Tobacco Products Directive (TPD) was officially adopted by the Council following its formal approval by the European Parliament in February 2014.²³ Most of the new rules will apply in the first half of 2016 following a two year transposition period for Member States, of which the UK is one. The TPD covers how tobacco products are to be manufactured, produced and presented in the EU. The expected impact of the TPD on tobacco consumption used in this IA is a 2.15% reduction over five years. This value is taken from the TPD IA.²⁴ Whilst some of the requirements included in the TPD bear slight resemblances to the rules prescribed under standardised packaging, the TPD still allows for packaging to display logos, colours and brand images. Please see Annex E for a more detailed overview of the TPD requirements.
35. Given that the open display of tobacco in retail environments has ended in England for large shops, (and will end in 2015 for small shops), and the adoption of the revised TPD, the introduction of standardised tobacco packaging might further reduce the promotion of tobacco products. With display of tobacco

¹⁹ Article 11 of the FCTC relates to packaging and labelling of tobacco products.

²⁰ Article 13 of the FCTC relates to tobacco advertising, promotion and sponsorship.

²¹ European Commission (2007). *Report from the commission to the European parliament, the Council and the European economic and social committee. Second report on the application of the Tobacco Product Directive*. Brussels: Commission of the European Communities.

²² HM Government (2011). *Healthy Lives, Healthy People: A Tobacco Control Plan for England*. Department of Health, London.

²³ TPD text is available at:
http://www.europarl.europa.eu/meetdocs/2009_2014/documents/envi/dv/envi20140122_tobacco_agreed_text_/envi20140122_tobacco_agreed_text_en.pdf

²⁴ Available at:
http://ec.europa.eu/health/tobacco/docs/com_2012_788_ia_en.pdf

products ending, the tobacco industry may seek to invest more in promoting tobacco use through packaging.

36. A World Health Organization report on the global tobacco epidemic argues that consumers of tobacco products have a 'fundamental right to accurate information about the risks of smoking'. A basic requisite for reducing tobacco use is that every person be informed of the health consequences, addictive nature, and potential for disability and premature death posed by tobacco consumption and exposure to tobacco smoke'.²⁵ Research shows that health warnings on tobacco packages are among the most direct and prominent means of communicating with smokers.²⁶ Health warnings have high reach and frequency of exposure among smokers; a 20 pack a day smoker potentially being exposed to these warnings over 7000 times per year.
37. As the consultation was conducted on a UK-wide basis, this IA considers costs and benefits of standardised packs for the UK, although some of the illustrative data reported here relate to England only. Devolved Administrations agreed that the primary powers in the Children and Family Act could be passed on their behalf, meaning that the provisions would apply on a UK-wide basis, their consent would also be needed for any regulations to have force in each UK country

Summary of Responses to Consultation

38. The *Consultation on standardised packaging of tobacco products* was carried out between 16 April and 10 August 2012. A consultation-stage IA was included in the consultation exercise, with twelve questions specifically seeking views on the IA and inviting respondents to provide data and evidence where this could inform and strengthen the IA (see Annex C). The IA draws upon information provided in consultation responses.
39. A summary report of the consultation has been published by the Department of Health.²⁷

Impact upon Equality Groups

40. An initial assessment of the potential impact of standardised tobacco packaging on the Government's duties under the Equality Act 2010 was included in the consultation exercise with a specific question asking respondents for their views and for evidence on whether requiring standardised packaging would contribute to reducing health inequalities or help the Government to fulfil its duties. An Equality Analysis has been updated to take into account points raised in the consultation responses and it also considered the Secretary of State's duty to reduce inequalities with respect to benefits from the health service (under section 1C of the NHS Act 2006 which came into force in April 2013).
41. The conclusion of the updated Equality Analysis is that, although certain groups in society may be affected differently from others, and potential adverse impacts were identified for those with impaired sight or with literacy difficulties, a policy of standardised tobacco packaging of cigarettes and hand rolling tobacco would not have any significant negative impact on any particular aspect of equality. However, the policy should, if successful in achieving the policy aims of reducing smoking initiation among young people and supporting successful quitting, have a positive impact on equalities, and could help to reduce health inequalities between socio-economic groups, because the impact would be greater on those groups in which smoking prevalence is highest.
42. Growing up in homes where smoking by adults is the norm, children are more likely to become smokers themselves and to take up smoking at an earlier age, perpetuating smoking into new generations.²⁸

²⁵ World Health Organization (2011). *WHO report on the global tobacco epidemic. Warning about the dangers of tobacco*. WHO, Geneva.

²⁶ Hammond D. (2011). 'Health warning messages on tobacco products: a review' in *Tobacco Control* 20:327-337.

²⁷ Department of Health (2013). *Consultation on standardised packaging of tobacco products: summary report*. London: Department of Health. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/212074/Summary_of_responses_to_consultation_-_standardised_packaging_tobacco.pdf

Smokers in the routine and manual group take up smoking at a younger age than those in other groups. In 2006, 40% of the smokers in the routine and manual group had taken up smoking by the age of 16 compared with 31% in the managerial and professional group.²⁹ These findings could go some way to explaining why, in 2010, 13% of the managerial and professional group were smokers compared with 27% of the routine and manual group. If display of branded packets induces take-up within the home and explains the link between parental smoking and take-up, standardised packaging may be helpful in tackling the differences in acculturation to smoking across socio-economic groups.

43. Smoking rates are high in other population groups, such as among lesbian, gay and bisexual people³⁰ and smoking by gay men is believed to be twice that of wider population levels.³¹ Smoking by people with a mental illness is 'a tremendous problem that goes largely ignored'.³² Smoking is higher in certain ethnic groups, in particular Bangladeshi and Pakistani men and Irish men and women.³³
44. While lower socio-economic groups are more likely to smoke cheaper cigarettes (which may be less subject to brand attachment than more expensive brands), current research does not provide insight into the differential impact of branding on different socio-economic groups.

Evidence regarding the potential impact of standardised tobacco packaging

45. The health benefits in this IA are assessed on the basis of additional benefits that would be likely to accrue over and above existing tobacco control measures and anticipated measures in place at the time of standardised packaging implementation. This includes the benefits of recently commenced legislation in England to end tobacco sales from vending machines, ending the open public display of tobacco products in shops by April 2015, and the benefits arising due to the revised TPD.
46. The Department of Health and the Devolved Administrations each have tobacco control plans in place.³⁴ If introduced, standardised packaging would form an element within these wider comprehensive strategies to contribute to reducing rates of smoking. The objectives of a policy for standardised packaging would be to improve public health by:
 - discouraging people from starting to use tobacco products
 - encouraging people to give up using tobacco products
 - helping people who have given up, or are trying to give up, using tobacco products not to start using them again
 - reducing the appeal or attractiveness of tobacco products
 - reducing the potential for elements of the packaging of tobacco products other than health warnings to detract from the effectiveness of those warnings
 - reducing opportunities for the packaging of tobacco products to mislead consumers about the effects of using them
 - reducing opportunities for the packaging of tobacco products to create false perceptions about the nature of such products

²⁸ Buller D, Borland R, Woodall W, Hall J, Burris-Woodall P, Voeks J (2003). "Understanding factors that influence smoking uptake". *Tobacco Control* 12(suppl.4):iv16-iv25.

²⁹ DH (2008). Consultation on the future of tobacco control. London: Department of Health

³⁰ Covey L, Weissman J, Lo D, Duan N (2009). "A comparison of abstinence outcomes among gay/bisexual and heterosexual male smokers in an intensive, non-tailored smoking cessation study". *Nicotine and Tobacco Research* 11:1374-1377.

³¹ Harding R, Bensley J, Corrigan N (2004). "Targeting smoking cessation to high prevalence communities: outcomes from a pilot intervention for gay men". *BMC Public Health* 4:43.

³² Williams J, Ziedonis D (2004). "Addressing tobacco among individuals with a mental illness or addiction". *Addictive Behaviours* 29:1067-1083.

³³ Information Centre (2004). Health Survey for England 2004: health of ethnic minorities. Leeds: The Information Centre.

³⁴ Scotland: *Creating a Tobacco Free Generation: A Tobacco Control Strategy for Scotland* (2013); Northern Ireland: *Ten-Year Tobacco Control Strategy for Northern Ireland* (2012); Wales: *Tobacco Control Action Plan for Wales* (2012); England: *Healthy Lives, Healthy People: A tobacco control plan for England*, (2011).

- having an effect on attitudes, beliefs, intentions and behaviours relating to the reduction in use of tobacco products
 - reshaping social norms around tobacco use to promote health and wellbeing.
47. Standardised packaging will contribute to these objectives by building on the success of Tobacco Advertising and Promotion Act 2002 and further reducing the opportunities for advertising and promotion of tobacco products.
 48. If effective, the policy would improve the health of those not starting to smoke and those quitting smoking. An additional benefit would be a reduction in exposure to SHS from reduced rates of smoking. Given that smoking is a leading cause of health inequalities, standardised tobacco packaging may help to narrow these inequalities.
 49. While packaging has a practical function, today it is an important component of the overall marketing strategy. Tobacco packaging is a crucial promotional vehicle that helps to create brand awareness, increase brand appeal and foster positive attitudes towards smoking.³⁵ The importance of packaging as part of the promotional mix is recognised in marketing literature. Packaging ‘act(s) as a promotional tool in its own right’.³⁶ According to Underwood and Ozanne (1998), the ‘product package is the communication life-blood of the firm’ or the ‘silent salesman that reaches out to customers’.³⁷ Tobacco company documents show the value of packaging to this industry. A report prepared for the tobacco manufacturer Philip Morris in 1989 set out that ‘consumer perceptions are based on pack design, price points and usage patterns – not images created by advertising’.³⁸ Tobacco packaging remains a “badge” product.
 50. According to Cancer Research UK, packaging is seen as an effective marketing medium that helps to build consumer relationships through possession and usage. Packaging innovation, design and value packaging are used to promote the product, distinguish products from competitors, communicate brand values and target specific consumer groups. These packaging strategies, together with the visual and structural aspects of packaging design, such as colour, size and shape, influence consumer perceptions and purchase and usage behaviour. They give packaging an important role both at point-of-purchase and post-purchase.³⁹
 51. Cancer Research UK also suggests that packaging strategies enable marketers to align brands with target groups of consumers. Brand values are inferred from packaging design and this has an impact on purchase intent, particularly when brand values are congruent with personal values. As personal values stem from membership of cultural and peer groups, careful attention is paid to which values are important to the target group. Tobacco industry documents show clear segmentation with regard to groups such as young people and lower social classes. The values of such groups are monitored to allow packaging strategies to fit in with any changes. For instance, value packaging becomes more prominent in times of economic pressure. A review of tobacco industry documents undertaken by Wakefield (2002) revealed the following about packaging, branding and young people:

Documents repeatedly show that tobacco companies are aware that brand choices are made relatively early in the life of a smoker and that packaging is an important ingredient in positioning brands to be attractive to youth. A Liggett and Myers document, for example, stated: ‘16-21—the formative years; smoking starts and brand preferences are developed.’⁴⁰

³⁵ Gallopel-Morvan K, Moodie C, Hammond D, Eker F, Beguinot E, Martinet Y (2012). Consumer perceptions of cigarette pack design in France: a comparison of regular, limited edition and plain packaging. *Tobacco Control* 21:502-506.

³⁶ Palmer, A. (2000). ‘The product’ in Palmer A (ed.) *Principles of Marketing*. Oxford University Press, London.

³⁷ Underwood, R. and Ozanne, J. (1998). ‘Is your package an effective communicator? A normative framework for increasing the communicative competence of packaging’ in *Journal of Marketing Communication*. 4(4), pp.207–220.

³⁸ Kelly Weedon Shute Advertising (1989). *Cigarette Marketing - A New Perspective*. Available online at: <http://legacy.library.ucsf.edu/tid/lti49e00>.

³⁹ Cancer Research UK (2012). *The packaging of tobacco products*. The Centre for Tobacco Control Research funded by Cancer Research UK, University of Stirling and the Open University, Stirling.

⁴⁰ Wakefield, M. (2002). ‘The cigarette pack as image: New evidence from tobacco industry documents’ in *Tobacco Control*. 11, Supplement I, pp.i73-i80.

52. Action on Smoking and Health says that the Tobacco Advertising and Promotion Act, which bans tobacco advertising and many forms of promotion, has been effective in removing overt promotional activity and has brought about a consequent reduction in awareness of tobacco marketing amongst the young. However, branding continues to drive teen smoking, and awareness of packaging and new pack design is a key element of this ongoing marketing. Since the Act was implemented, the tobacco industry has invested increased resources into packaging design in order to communicate brand imagery and increase sales. Research shows that this has already had an effect: between 2002 and 2006 there was an increase in the proportion of young people aware of new pack design from 11 per cent in 2002 to 18 per cent in 2006.⁴¹
53. In England, we anticipate that legislation to end the open display of tobacco in shops and the revised TPD will help to sustain the medium to long-term downwards trend in smoking prevalence among the adult population. *Figure 1* shows the trend in smoking prevalence among adults (people aged 16 years and over who say that they do smoke nowadays). *Figure 2* shows the trend in the proportion of young people (aged 11-15) in England who are regular smokers (at least one cigarette per week).
54. To inform policy development and responses to the consultation, the Department of Health commissioned a systematic review of the evidence on standardised tobacco packaging.⁴² The review was supported through the Public Health Research Consortium (PHRC)⁴². This is referred to as the “evidence review” below. Please note that Sir Cyril Chantler refers to the evidence review as the “Stirling Review” in his report.⁵⁸
55. Initial evidence on the impact of standardised packaging on smoking beliefs and quitting thoughts in Australian smokers has been reported by Wakefield et al. (2013)⁴³ among 388 participants smoking from a standardised pack and 148 smoking from a branded pack. Those smoking from a standardised pack consistently rated quitting as a significantly higher priority and a significantly higher proportion in this group thought about quitting at least once a day in the last week (36.8% versus 21.8%). The odds ratio on this measure was statistically significant in the unadjusted analysis and in both models which adjusted for covariates. However, there was no significant difference in the proportions seriously considering quitting in the next six months. Further details of this study can be found in an update to the evidence review.⁴⁴

Findings of the evidence review

Appeal

56. Studies cited in the PHRC evidence review show that standardised tobacco packaging reduces the appeal of tobacco products to both adults and children, as compared with branded packs. For example, tobacco in standardised packs can be perceived to be of poorer quality. The removal of branding features, such as logos, colour and typeface identified with a particular brand, is likely to reduce the ability of the pack to be linked with brand identity and therefore may weaken the attachment of a smoker to a particular brand. The ability of manufacturers to introduce frequent changes of colour, logos and typefaces allows tobacco brands to be refreshed and modernised, often on a regular basis. There are

⁴¹ Action on Smoking and Health (2012). *ASH Briefing: Plain Packaging*. ASH, London. Online at: http://ash.org.uk/files/documents/ASH_699.pdf.

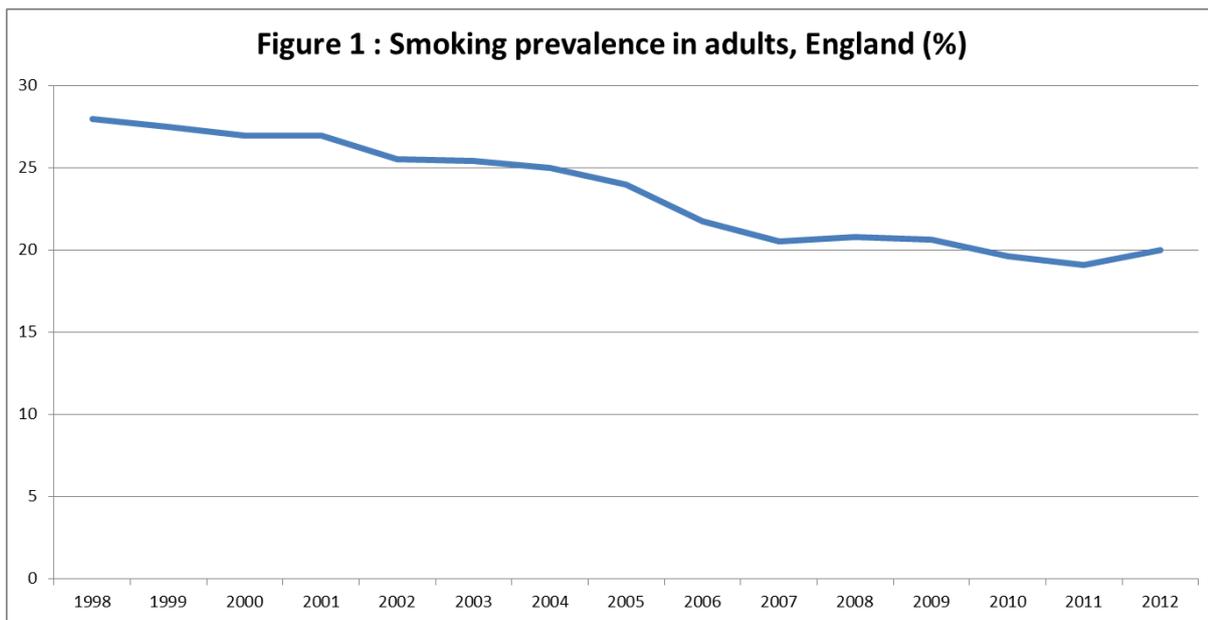
⁴² The systematic review was supported through the Public Health Research Consortium (PHRC), a network of researchers funded by the Department of Health’s Policy Research Programme. The lead teams on the review were from the University of Stirling, the University of Nottingham and the Institute for Education, London. The review has been peer reviewed in accordance with the Department of Health’s Research Governance Framework. The PHRC report represents the work and views of the authors, not necessarily those of the Department of Health. Moodie, C. et al. (2012). *Plain Tobacco Packaging: A systematic review*. Public Health Research Consortium. Online at: http://phrc.lshtm.ac.uk/project_2011-2016_006.html

⁴³ Wakefield M A, Hayes L, Durkin S, Borland R (2013). Introduction effects of the Australian plain packaging policy on adult smokers: a cross-sectional study. *BMJ Open* 3:e003175.

⁴⁴ Moodie C, Angus K, Stead M and Bauld L (2013). Plain tobacco packaging research: an update. Stirling: Centre for Tobacco Control Research, Institute for Social Marketing, University of Stirling

benefits to manufacturers of refreshing packaging, as was illustrated by the £60 million increase in sales of Lambert & Butler in the UK in November 2004 following the introduction of a new “celebration” pack.⁴⁵

- 57. Branded tobacco packaging can result in the creation of smoker identity that involves the projection of personality attributes by specific brands, such as “cool” and “popular”. Tobacco industry documents reveal the importance of creating favourable brand image, with one in particular setting out that ‘In the cigarette category brand image is everything. The brand of cigarettes a person smokes is their identity. Cigarettes tell others who they are as a person’⁴².
- 58. In contrast, standardised tobacco packs are consistently rated as less appealing in terms of the projection of personality attributes. Standardised tobacco packs can weaken smokers’ attachment to brands and hence are associated with a less desirable smoker identity. A survey of smokers’ perceptions in which branding was increasingly removed showed the plainest packs projected less mature and less popular attributes.⁴⁶ Cigarettes in standardised packs were perceived to be less trendy and stylish and their smokers less sociable and outgoing than smokers of cigarettes from the original branded pack.

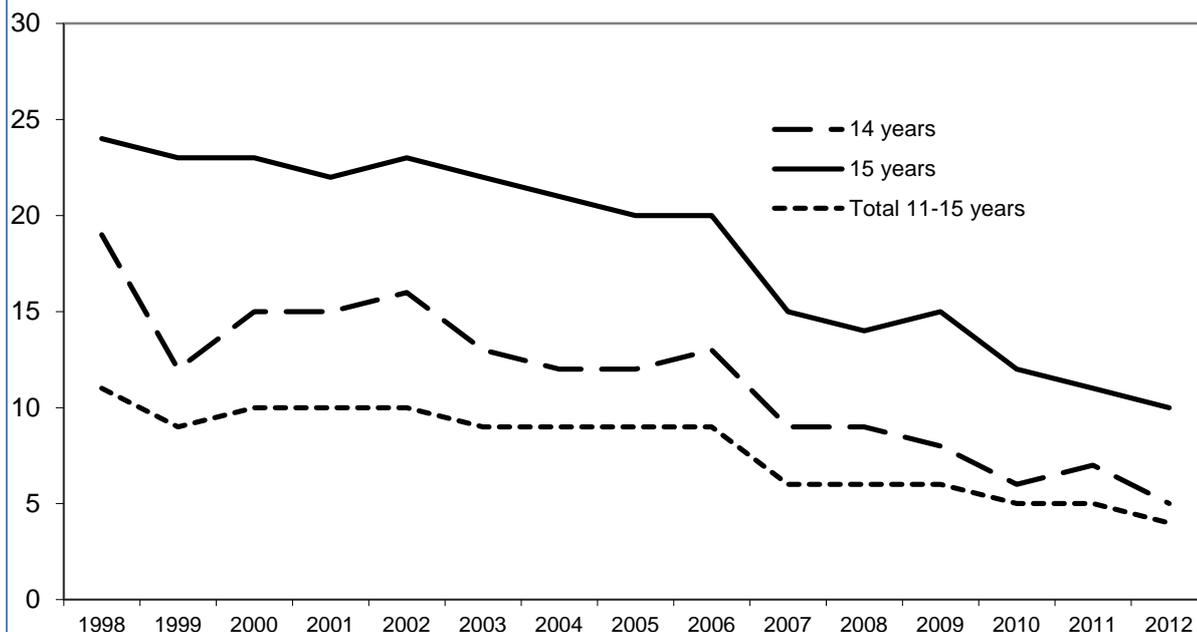


Source: General Lifestyle Survey / Opinions and Lifestyle Survey

⁴⁵ Good G (2006). Global brand director, Imperial tobacco group plc. Presentation at UBS Tobacco Conference, 1 Dec 2006. Available at: http://www.imperial-tobacco.com/files/financial/presentation/011206/ubs_transcript.pdf

⁴⁶ Wakefield M, Germain D, Durkin SJ (2008). How does increasingly plainer packaging influence adult smokers’ perceptions about brand image? An experimental study. *Tobacco Control*, 17: 416-21

Figure 2: Proportion of pupils (aged 11-15) who were regular smokers, England (%)



Source: Smoking, drinking and drug use among young people in England in 2012

59. A study in Scotland asked participants to use their own packs and standardised packs, each for a two week period, to research smokers' reactions to using standardised and branded packs. Of 140 smokers aged 18-35 who enrolled, 48 completed the full study as intended. The use of standardised packs resulted in the participants feeling more negative about smoking, including reduced enjoyment and satisfaction, as well as experiencing significantly increased feelings of embarrassment and shame.⁴⁷ Participants reported that they were more likely to keep the pack out of sight, to cover the pack, to smoke less around others, to think about quitting and to want to quit. At the fourth measurement point, 44% reported smoking less around others with the "Kerros" pack (the fictitious brand name ascribed to the standardised pack) compared with 7% with their own pack ($p < 0.001$). At the same time point, a higher proportion of participants with the standardised pack reported thinking about quitting than those using their own branded pack (52% versus 28%, $p < 0.01$) and a higher proportion reported wanting to quit with the standardised than with their own pack (37% versus 26%, $p < 0.05$). Participants also reported that they were more likely to forgo a cigarette with the standardised pack than with their own branded pack (30% versus 9%, $p < 0.05$). A further survey showed that smokers who are more motivated to quit consider standardised packs as most likely to help motivate cessation.⁴⁸
60. The evidence review identified relatively few studies that compared the appeal of tobacco packaging for children with that among adults. Those studies that did, however, showed that younger participants were more affected by standardised tobacco packaging than adults. A Canadian study found smoking and non-smoking teenagers were much more likely to give standardised tobacco packs negative ratings than branded packs on a range of attractiveness criteria (ugly/attractive, boring/exciting, old fashioned/modern, awful/nice, dull/colourful, nerdy/cool).⁴⁹ A survey in New Zealand found that smoking

⁴⁷ Moodie C, Hastings GB, Mackintosh AM, Ford A (2011). Young adult smokers' perceptions of plain packaging: A pilot naturalistic study. *Tobacco control*, 20: 367-373 in Moodie C, Stead M, Bauld L, McNeill A, Angus K, Hinds K, Kwan I, Thomas J, Hastings G (2012). Plain tobacco packaging: a systematic review. Stirling: University of Stirling.

⁴⁸ Gallopel-Morvan K, Moodie C, Hammond D, Eker F, Beguinot E, Martinet Y (2011). Consumer understanding of cigarette emission labelling. *European Journal of Public Health*, 21: 373-375 in Moodie C, Stead M, Bauld L, McNeill A, Angus K, Hinds K, Kwan I, Thomas J, Hastings G (2012). Plain tobacco packaging: a systematic review. Stirling: University of Stirling.

⁴⁹ Centre for Health Promotion (1993). *Effects of plain packaging on the image of tobacco products among youth*. University of Toronto: Centre for Health Promotion.

and non-smoking young adults were 25 times more likely to give a plain pack the worst rating (least likely to share with a new group of friends) than a branded pack.⁵⁰

61. Young adults, when using standardised tobacco packs, are more likely to think of quitting or increasingly want to quit as branding is removed. Standardised tobacco packs have been found to have poor symbolic power for young people seeking to create an identity through smoking.⁵¹ Donovan (1993) found that smoking and non-smoking 11-17 year olds rated standardised tobacco packaging significantly less appealing than smoking and non-smoking 18-29 year olds.⁵² A study of females aged 16-19 years old in the UK found standardised tobacco packs were rated as significantly less appealing as branded packs targeted at women.⁵³

Health warnings

62. The evidence review concludes that health warnings become more prominent with the removal of branding and standardised tobacco packaging is, therefore, likely to result in increasing attention being paid to the warnings. In addition, the prominence of health warnings on standardised packs aids the impression of seriousness and the credibility of the warnings. Given the number of times smokers (and possibly others) look at cigarette packs every day, the importance of health warnings in communicating the health harms of using tobacco is high and may be enhanced by standardised packaging.
63. A study in Canada showed that recall of the health warning “Smoking can kill you” from the side of a cigarette packet was 22% for branded packs compared with 56% for standardised packs ($p < 0.001$).⁵⁴ In a second North American study undertaken in classrooms in Chicago and Ontario, 51% of the students in Ontario said that it was easier to see the health warning on the standardised pack compared with 29% for the regular pack. The other 20% said it made no difference.⁵⁵
64. A Belgian study researched the motivations of young people choosing cigarette packs. The participants, both daily and non-daily smokers, commented on how the warnings were more salient on the standardised pack than the branded pack.⁵⁶ The study concluded that the prominence and perceived seriousness of health warnings were greater with standardised packs than branded packs. It also appears that recall of the health warning itself is greater because the standardised pack has fewer distractions and fewer stimuli for the smoker to process.

⁵⁰ Hoek J, Gendall P, Louviere J (2009). Tobacco Branding and Plain Packaging: The New Frontier in Tobacco Control? In Moore B, Paappalardo J, Wilkie W (Eds.), *Proceedings of the American Marketing Association Marketing and Public Policy Conference*, Washington DC, May 28-30.

⁵¹ Comite National Contre Tabagisme (2008). “Comment mettre en oeuvre les dispositions de la CCLAT pour parvenir à une “dénormalisation” de la consommation de tabac?” *Evaluation de l’impact du paquet de cigarettes neutre: Résultats d’une étude qualitative menée sur 34 personnes* [Evaluation of the impact of a plain cigarette pack: Results of a qualitative study with 34 people]. Report for the Institute National de Cancer. Paris: CNCT.

⁵² Donovan R (1993). *Smokers’ and non-smokers’ reactions to standard packaging of cigarettes*. Perth Australia: University of Western Australia.

⁵³ Hammond D, Daniel S, (2011). UK plain pack study among young women. Submitted to *Journal of Adolescent Health*.

⁵⁴ Goldberg ME, Leifield J, Kindra G, Madill-Marshall J, Lefebvre J, Martohardjona N, Vrendenberg H (1995). *When Packages Can’t Speak: Possible impacts of plain packaging of tobacco products*. Prepared for Health Canada. Toronto, Canada in Moodie C, Stead M, Bauld L, McNeill A, Angus K, Hinds K, Kwan I, Thomas J, Hastings G (2012). *Plain tobacco packaging: a systematic review*. Stirling: University of Stirling.

⁵⁵ Rootman I, Flay BR, Northrup D, Foster MK, Burton D, Ferrence R, Raphael D, Single E (1995). *A study on youth smoking: Plain packaging, health warnings, event marketing and price reductions*. Toronto, ON, Canada: University of Toronto, University of Illinois at Chicago, York University, Ontario Tobacco Research Unit, Addiction Research Foundation in Moodie C, Stead M, Bauld L, McNeill A, Angus K, Hinds K, Kwan I, Thomas J, Hastings G (2012). *Plain tobacco packaging: a systematic review*. Stirling: University of Stirling.

⁵⁶ van Hal G, Arts M, Vriesacker B, Fraeyman J, Roos S (2011). *Tobacco plain packaging: perceptions of Flemish teenagers*. Unpublished manuscript in Moodie C, Stead M, Bauld L, McNeill A, Angus K, Hinds K, Kwan I, Thomas J, Hastings G (2012). *Plain tobacco packaging: a systematic review*. Stirling: University of Stirling.

Perceived quality

65. The evidence review found that smokers' perceptions of the quality of tobacco can be influenced by branding. A survey of adults and young people in the UK, comparing standardised white and branded packs, found that differences between alternative brand variants in perceived smoothness of taste were less likely to be recorded when standardised white packs rather than branded packs were being used. Comparing standardised brown packs with conventional branded packs, significantly fewer adults associated the standardised pack with a smoother taste using the examples of Mayfair King Size (9% versus 18%, $p < 0.001$) and Lambert & Butler King size (11% versus 20%, $p < 0.001$). Similarly, significantly fewer youth smokers gave a smoother taste rating to the standardised Mayfair pack (13% versus 20%, $p = 0.001$) or the standardised Lambert & Butler pack (12% versus 26%, $p < 0.001$) when compared with the respective branded packs.⁵⁷

The evidence review's key findings

66. The following are the evidence review's⁴² key findings:

Appeal of cigarettes, packs and brands:

- All studies reported that plain packs were rated as less attractive than branded equivalent packs, by both adults and children.
- Plain packs were perceived to be poorer quality, poorer tasting and cheaper than branded equivalent packs.
- Positive impressions of smoker identity and personality attributes associated with specific brands were weakened or disappeared with plain packaging.
- Non-smokers and younger people responded more negatively to plain packs than smokers and older people.

Salience of health warnings:

- Overall, the studies suggest that plain packaging tends to increase the recall of health warnings, the attention paid to them and their perceived seriousness and believability.
- Findings appear to be moderated by the type, size and position of health warning used.
- Only one study examined sub-group differences, and reported that non-smokers and weekly smokers may pay more attention to warnings on plain packs than daily smokers.

Perceptions of product harm and strength:

- Plain packaging can reduce misperceptions about the relative harmfulness of different brands.
- Colours of packs affect perceptions of product harm and strength. In general, plain packs are perceived as more harmful than branded packs if in a darker colour such as brown and, conversely, less harmful than branded packs if in lighter colours such as white. Red packs are perceived to contain stronger cigarettes than light-coloured packs.
- Use of descriptors such as 'gold' or 'smooth' on plain packs have the potential to mislead consumers, as they do on branded packs.

⁵⁷ Hammond D, Dockrell M, Arnott D, Lee A, McNeill A (2009). Cigarette pack design and perceptions of risk among UK adults and youth. *European Journal of Public Health* 19: 631-637.

- In general, smokers are more likely to have misperceptions about the harmfulness of packs, both branded and plain, than non-smokers.

Smoking related attitudes, beliefs, intentions and behaviour:

- Plain packs appear to increase negative feelings about smoking.
- Plain packs are generally perceived as likely to have a deterrent effect on the onset of smoking by young people and as likely to encourage existing smokers to reduce their consumption or to quit, although in some studies they are perceived as likely to have little impact.
- Non-smokers, lighter smokers and younger people are more likely to perceive that plain packs would discourage or reduce smoking.

Independent review of public health evidence for standardised tobacco packaging (Chantler Report)

67. Sir Cyril Chantler was commissioned by the Government to give advice on whether or not the introduction of standardised packaging is likely to have an effect on public health, and what any effect might be, particularly in relation to the health of children. When undertaking his review he considered three key questions and came to the following conclusions:
- ***Is standardised packaging likely to lead to a reduction in the consumption of tobacco?***
 - Sir Cyril considered evidence from the Stirling Review and commissioned his own independent assessment to make sure the Stirling Review was robust. He accepts the findings of the Stirling Review that standardised packaging has been shown to reduce pack and product appeal. He considers it likely that standardised packaging will result in smokers and potential smokers feeling more negative about smoking, susceptible children and young adult smokers becoming less likely to associate particular brands with the peers they want to emulate and health warnings becoming more credible when not next to attractive packaging. This reduction in appeal is likely, in due course, to translate into changed behaviour and so to a reduction in tobacco use. Overall he expects standardised packaging, over time, to contribute to a reduction in the prevalence of smoking
 - ***Does branded packaging promote tobacco consumption, especially by encouraging children to take up smoking?***
 - Very strong evidence shows that children who are exposed to advertising or promotion of tobacco products are more likely to subsequently take up smoking. Branded cigarettes are ‘badge’ products, frequently on display, which therefore act as a “silent salesman.” The tobacco industry argues that all of its marketing activity, including packaging, aims solely to persuade existing adult smokers to switch brand and never targets children or new smokers. However, Sir Cyril has heard no coherent argument as to how this separation happens in practice. In his view children and non-smokers cannot be ‘quarantined’ from seeing tobacco packaging and once they are exposed to it, they are susceptible to its appeal whether it is intended to target them or not. In the light of these and other considerations he believes that branded packaging contributes to increased tobacco consumption.
 - ***Is it likely that standardised packaging will lead to an increase in tobacco consumption by lowering the price of tobacco as the market is commoditised or by increasing the consumption of cheap illicit products?***
 - Sir Cyril is not convinced by these arguments. He considers that the risk of prices falling is small, but if it were to happen and undermine the objectives of standardised packaging then this could be mitigated through taxation. He notes that in Australia prices have continued to rise, above and beyond tax increases since plain packaging. He has not found any convincing evidence to suggest that standardised packaging would increase the illicit market. The main driver to an increase in the illicit market seems to be price. He notes that what constrains the size of the illicit market is not a lack of demand, but restrictions placed on supply by border controls. He says that if this were not the case then the size of the illicit market would have increased over the last 14 years as tobacco taxes have risen in real terms. Instead the size of the illicit market in the UK has roughly halved. He says that HMRC’s actions in combating illicit trade appear to have been very effective. It seems to Sir Cyril that the solution to illicit use is to have an effective enforcement regime, and the enforcement agencies in the UK have already

demonstrated that an effective enforcement regime and appropriate sanctions can keep illicit products to low levels.

In coming to his conclusions he considered published studies, met with representatives from the tobacco industry and tobacco control experts, and commissioned independent analysis of the Stirling Review.⁵⁸ He notes that the independent academic analysis of the Stirling Review found that, in their opinion, the work was robust, and notable for the consistency of its findings (paragraph 4.18).

Conclusions

Conclusions on the role of branded packaging

68. Sir Cyril concludes the following on the role of branded packaging: “In my opinion, the balance of evidence suggests that the appeal of branded packaging acts as one of the factors encouraging children and young adults to experiment with tobacco and to establish and continue a habit of smoking. As British American Tobacco Australia’s spokesman acknowledged in our meeting, tobacco companies, like other consumer goods companies, see branded packaging as one of the tools of marketing. This is supported by numerous internal tobacco industry documents. Although the tobacco industry says that the purpose of branded packaging is to encourage brand switching only, they cannot explain how it would only ever attract switchers from one brand to another, and would never encourage initiation from non-smokers or increased overall consumption. Further, they have not been able to explain why, given that advertising and promotion are proven to increase tobacco consumption, the related marketing tool of branded packaging (referred to by Japan Tobacco International’s counsel against the Australian Government as their mobile “billboard”) should so differ in its effect.”

Conclusion on impact of standardised packaging

69. Sir Cyril concludes the following on the impact of standardised packaging: “Having reviewed the findings of the Stirling Review and subsequent Research Update, and the detailed critiques made of them, I believe the evidence base for the proposed “intermediate” outcomes is methodologically sound and, allowing for the fact that overall effect size cannot be calculated from it, is compelling about the likely direction of that effect. Taken together the studies and reviews based on them put forward evidence with a high degree of consistency across more than 50 studies of differing designs, undertaken in a range of countries. This conclusion is not seriously undermined by the criticisms made, many of which reflect necessary constraints on study design. This is confirmed by the independent analysis I commissioned.”
70. “I am of the opinion that on the basis of the evidence I have seen, it is likely that standardised packaging will result in smokers and potential smokers acquiring more negative feelings about smoking. They will be less deceived into thinking that some brands are healthier than others and that therefore health warnings apply less to them. Susceptible children and young adult smokers will be less likely to associate particular brands with the peers they want to emulate. Health warnings will be more credible, memorable and effective when not confusingly juxtaposed with attractive branded packaging. This is, in turn likely to lead to behavioural changes such as smokers hiding their cigarette packets, thereby diminishing their role in creating an exaggerated view of smoking as a social norm. This may help to make smoking seem less “normal” and therefore less desirable to children to take up smoking to ‘fit in’ with peers.”

Policy Options

Option 1: Require changes to legislation to bring the UK in line with the European Tobacco Products Directive in 2016 (i.e. go no further than the UK’s Legal requirements)

71. Option 1: This constitutes the baseline against which standardised tobacco packaging is assessed. It incorporates all existing tobacco control measures currently in place and expected measures, including legislation to end the open display of tobacco products and the revised TPD which will be implemented in 2016. By definition, this option involves zero costs and zero benefits in this IA.

⁵⁸ <http://www.kcl.ac.uk/health/PressRelease3April2014.pdf>

72. The impact of standardised packaging on smoking behaviour has been considered against the background of the projected benefits attributable to existing and expected policies, both in terms of adults quitting (or not relapsing) and young people prevented from taking up smoking. In both cases, the expected impact of standardised packaging derived from the expert panel described below has been reckoned as additional to the impact of ending the display of tobacco in shops.
73. The full effect of the ending the display of tobacco in shops in England is projected to be a fall in the percentage of 11-15 year-old “ever smokers” from 25% in 2011 when the display ban was introduced (according to the NHS Information Centre survey of Smoking, Drinking and Drug Use Among Young People in England in 2011) to around 21%.⁵⁹ The implementation of the revised TPD is assumed to reduce this prevalence by a factor of 2.15% over 5 years. We use this anticipated prevalence as the baseline against which standardised packaging is assessed
- 73b. The new European TPD will come into force in May 2016, and includes the following few requirements:
- Mandatory “combined” picture/text health warnings to cover 65% of the front and the back of cigarette packs, and to be aligned with the top edge of the pack.
 - New textual health warnings will be required on 50% of the sides of packs (e.g. "smoking kills – quit now"; "tobacco smoke contains over 70 substances known to cause cancer"), replacing the current tar, nicotine and carbon monoxide (TNCO) levels.
 - There will be minimum dimensions for the health warnings and slim, 'lipstick'-style cigarette packs, which are often targeted to young women, will no longer be allowed.
 - To improve the visibility of health warnings, cigarette packs will be required to have a cuboid shape and each pack will contain a minimum of 20 cigarettes.
 - No promotional or misleading features or elements will be allowed on packs. This includes, for example, references to lifestyle benefits, to taste or flavourings or their absence (e.g. "free of additives"), special offers or suggestions that a particular product is less harmful than another.
 - Similar rules will apply to hand rolling tobacco (HRT) packs, which will also have to carry 65% combined health warnings on the front and back as well as the additional text warnings. HRT products can have a cuboid or cylindrical shape, or be in the form of a pouch, and each pack will contain a minimum of 30g of tobacco. Further details on the TPD are discussed in Annex E.
74. Amongst adults, the health benefits of ending the display of tobacco were based on an expected 3% increase in annual quit attempts and relapses, giving a 0.04 percentage point decrease in prevalence annually. The implementation of the revised TPD is assumed to reduce the prevalence by a factor of 2.15% over 5 years in line with the TPD impact assessment.

Option 2: Go beyond the European Tobacco Products Directive in 2016 and require standardised packaging

75. Option 2: Require standardised packaging of cigarettes and hand rolling tobacco (HRT) and possibly of other specialist tobacco products such as cigars and pipe tobacco.⁶⁰ This would involve the standardisation of pack colour, size and shape, and the removal of all branding from all external and internal packaging, with the exception of a brand and variant name which would appear in a standardised format on the pack. Markings required by law, such as health warnings and fiscal marks, would be retained.
76. Guidelines to Parties for the implementation of Article 13 of the FCTC set out the following description for standardised packaging of tobacco:

⁵⁹ This is based on updated estimates of the prevalence of ever smoking and regular smoking compared with the IA for the ending of tobacco displays.

⁶⁰ Specialist tobacco products such as cigars and pipe tobacco make up a very small amount of the tobacco consumed in England; only 0.6% of the population aged 16 years and above regularly smoke cigars (General Household Survey, 2011). Therefore, the possibility of this addition is not discussed further in this IA.

The effect of advertising or promotion on packaging can be eliminated by requiring plain packaging: black and white or two other contrasting colours, as prescribed by national authorities; nothing other than a brand name, a product name and/or manufacturer's name, contact details and the quantity of product in the packaging, without any logos or other features apart from health warnings, tax stamps and other government-mandated information or markings; prescribed font style and size; and standardized shape, size and materials. There should be no advertising or promotion inside or attached to the package or on individual cigarettes or other tobacco products.⁶¹

77. Reflecting the FCTC guidelines, the following proposed approach to standardised packaging was developed to inform consultation:

- All internal and external packaging to be in a prescribed colour(s) (details would be set out by the Government in the future);
- All text on the pack, including brand names, to be in a standard colour and typeface (specifications including maximum size of type would be set out by the Government in the future);
- No branding, advertising or promotion to be permitted on the outside or inside of packs, or attached to the package, or on individual tobacco products themselves. For this purpose 'branding' includes logos, colours or other features associated with a tobacco brand;
- Packs to be of a standard shape and possibly manufactured with particular materials (specifications would be set out by the Government in the future);
- Only the following information or markings to be permitted on packs (specifications would be set out by the Government in the future):
 - a brand name;
 - a product name;
 - the quantity of product in the packaging;
 - the name and contact details of the manufacturer;
 - one barcode to facilitate sale and stock control;
 - health warnings as currently required;⁶²
 - tar, nicotine and carbon monoxide (TNCO) yield information as currently required;⁶³
 - fiscal mark requirements as currently required;⁶⁴ and
 - markings not visible to the naked eye to counter illicit trade in tobacco products or other features to prevent fraud (details would be set out by the Government in the future).
- Any wrapper around the pack to be transparent and colourless, without any markings.

⁶¹ From Article 13 (tobacco advertising, promotion and sponsorship) of the World Health Organization's *Framework Convention on Tobacco Control*. FCTC implementation guidelines are available on the web at: www.who.int/fctc.

⁶² Written and picture warnings, set out in the Tobacco Products (Manufacture, Presentation and Sale) (Safety) Regulations 2002 and the Tobacco Products (Manufacture, Presentation and Sale) (Safety) (Amendment) Regulations 2007.

⁶³ Set out in the Tobacco Products (Manufacture, Presentation and Sale)(Safety) Regulations 2002.

⁶⁴ Set out in the Tobacco Products Duty Act 1979, the Tobacco Products Regulations 2001 and HMRC Notice 476 dated February 2011.

78. The approach to standardised packaging outlined above does not stipulate a particular colour for the packaging, although regulations would specify a required standard colour. Research identified by the systematic review of evidence suggests that the effectiveness of standardised packaging may be affected by the colour chosen, with lighter colours such as white or light blue being associated by participants in some studies with less harm than darker colours such as dark grey or brown.
79. Cigarette and HRT manufacturers' ability to circumvent standardised packaging requirements by producing other products with tobacco branding, such as cigarette cases or covers for packs, is already prohibited as a form of promotion.
80. To provide maximum clarity, the 2014 consultation on standardised packaging will include draft regulations which set out the proposed requirements for standardised packaging, should it be introduced. The draft regulations do not set out any requirements regarding the size or length of cigarettes, or the size of cigarette packets.

Option 3: Defer a decision pending collection of evidence from experience in Australia

81. It is recognised that there may be a case for delaying a decision on standardised packaging until evidence from Australia, and any other jurisdiction that introduces standardised packaging, becomes available. Any deferral would need to take account of the difficulty of disentangling the impact of standardised packaging from other public health measures in those jurisdictions (for example, tax increases and new media campaigns have been introduced at the same time as standardised packaging as part of Australia's comprehensive tobacco control strategy) and the time lag in identifying any effects. Under this option, costs and benefits would be deferred but the additional evidence collected would provide information relevant to the decision being made. The extent to which deferring a decision would be beneficial depends on the type of evidence which is likely to become available from international experience, against the public health costs of not taking action. While preliminary evidence on serving times is already emerging, other impacts will require a longer period of observation. This topic is discussed in the Chantler Review:
 - "A survey from the Australian Institute of Health and Welfare is expected to report results of overall prevalence in October 2014 and estimates for youth prevalence are expected in August 2015, in the Australian School Students Alcohol and Drug survey. Even then, it will be difficult to distinguish the impact of plain packaging from other drivers of prevalence."

Categorisation of benefits and costs

82. The main categories of impact to be considered with regards to standardised packaging are set out below (where (i)-(iv) outline the costs and (a)-(h) the benefits). If the policy is successful, benefits may accrue through:
 - (a) health benefits consequent upon reduced take-up of smoking; and/or
 - (b) health benefits consequent upon improved quit rates;
 - (c) reduced adult and child ill-health caused by second hand smoke (SHS), including avoidable treatment costs;
 - (d) reduction in health inequalities;
 - (e) improved workplace productivity;
 - (f) cleaner streets;
 - (g) pecuniary benefits to quitters.
83. The main categories of costs to be considered are:
 - (i) the costs to manufacturers and distributors, including reduced profits from any reduction in brand value, and any other transition costs in the redeployment of resources towards the provision of other goods and services;
 - (ii) costs borne by the Exchequer through the loss of tobacco duty resulting from a reduction in tobacco consumption,
 - (iii) possible losses to the Exchequer, tobacco companies and retail businesses from:
 - any increase in cross-border shopping
 - any increase in the illicit market

-any brand-related down-trading.

84. The loss of brand value associated with standardised packaging of tobacco may generate:
(h) cost-saving to business associated with the loss of the scope for branding, and to retailers due to simplification of the process of selecting a brand from a display.

There may also be:

(iv) a loss of consumer surplus associated with diminished branding.

85. Types of business which could be affected by standardised packaging are as follows:

- tobacco manufacturers who would be deprived of the value of their brands and would be required to transform their current brand led business model in the UK;
- small retailers who would expect lower margins as well as a loss of business to larger chains and illicit traders;
- the carton and packaging industry, who have invested heavily to meet the needs of the tobacco industry, including the regulatory requirements directed by Government;
- component suppliers (such as filter, paper, dyes, ingredients, etc.);
- creative packaging designers and developers; and
- machinery manufacturers in the EU (who design and manufacture machinery used to package tobacco products).

86. There are three categories of impacts on these businesses:

- Those resulting from reduced final demand for tobacco and corresponding reductions in demand for inputs into the manufacturing process. Reduced profits resulting from such reductions in demand will be offset by increased profits on goods and services purchased in place of tobacco. However, we allow for a one-off reduction in brand value due to switching from more expensive to less expensive brands and (in the critical value calculation for the increase in illicit market share required to generate a zero net benefit) from tobacco consumption diverted from the licit to the illicit trade. (Profits from illicit trade are not counted as offsetting benefits.)
- Transition costs for each group of businesses in the adaptation required of capital equipment and other inputs from an environment of branded packs to a standardised packaging environment. Write off of equipment may be partly offset by opportunities for redeployment.
- Longer term implications for the costs of tobacco manufacturing under standardised packs. Following the initial period of transition, production costs associated with standardised packs are likely to be lower than those currently incurred to produce branded packs.

87. These benefits and costs are discussed and estimated in turn, and net impact is derived in a subsequent section.

Manufacturing and Distributor Costs (i) and Cost Savings (h)

Transition Costs

88. Standardised packaging might be expected particularly to reduce the appeal of high price brands of cigarettes. While we expect there to remain residual brand loyalty among smokers, tobacco companies say that, in time, we could see smokers trading down to lower price brands. We therefore expect a more rapid decline in sales of high price than of low price brands because of a greater likelihood of quitting among smokers of high price brands and because of switching from high price to low price brands among those who continue to smoke. We assume that the rate of switching or downtrading between the

top two price bands and the lower two price bands will take place at twice the rate after standardised packaging as before standardised packaging.

Profits to the tobacco industry and retailers

89. Any impact on profitability for manufacturers will over time be eroded as investors move capital between investment opportunities. In the event that revenues fall (for example, tobacco revenues fall due to decreased smoking prevalence or customers switching to cheaper brands) and lower profits are expected, capital will be re-allocated elsewhere. The impact on returns to business is therefore best expressed as a one-off decline in the value of the assets employed in those industries where revenues are falling. For tobacco companies, this can result from a fall in smoking prevalence or a switch, amongst smokers, from higher price to lower price cigarettes (downtrading). In both cases, there are losses to multinational companies, many of whose shareholders are located overseas. Reduced profits resulting from reductions in demand will be offset by increased profits on goods and services purchased in place of tobacco. Reduced profits attributable to the reduction in brand value due to increased downtrading and due to reduced prevalence are quantified below.
90. On the assumption that all cigarette packets cost broadly the same to produce, the difference in profit between a pack of 20 in one of the top two price brands as opposed to the bottom two price brands is around £0.65. We assume that the excess revenue on a higher price as opposed to a lower price brand is split between manufacturer and retailer. The manufacturer's share is the residual after deducting the retailer's share, the latter being based on evidence from the retail sector on the retailer's margin on cigarettes at different price points. We assume that 10% of the profits of multinational tobacco companies are received by UK shareholders, whereas 100% of the retailer's share is retained in the UK. We have implicitly assumed that there are no extra profits for a Premium/Midprice pack above an Economy/ULP pack for the wholesale sector. On the basis of these assumptions, the loss of profits to tobacco companies' UK shareholders is estimated at £44m and the loss of profits to retailers is estimated at £122m discounted over the ten year time horizon of the IA. We treat these combined effects as a one-off loss of value to tobacco manufacturers and retailers resulting from standardised packaging, in the base case, of £166m.
91. We have also initially quantified the loss in profits attributable to the reduction in premium brand value from those who quit smoking entirely. An initial estimate of this loss is £39m discounted over 10 years. Since this is an initial estimate, we are not including this in our current NPV calculations but will look to do so in the next IA.

Impact upon costs of manufacturing packaging

92. A requirement to package tobacco products in standardised packaging may require initial resource costs to manufacturers within the wider tobacco industry to achieve compliance. In particular, packaging manufacturers (producing printed 'blank' packaging for conversion into finished cigarette packs) and tobacco manufacturers may find that existing capital equipment is not compatible with or inefficient in producing standardised packaging. The 2007 IA for the introduction of picture warnings on tobacco packs⁶⁵ estimated set-up costs at between £3.4m and £4.1m for the UK.
93. Across 27 EU countries, a 2010 Rand Europe study has estimated the administrative cost of introducing mandatory generic packaging at between €32.5m and €125.4m, the same as for making pictorial warnings mandatory.⁶⁶ As packaging companies have added additional units to their gravure presses in order to produce the colour picture warnings, this is likely to be an overestimate of the cost of acquiring the capability to manufacture standardised packs. Using the gravure process, a packaging company would simply need to procure the printing cylinder(s) required to print the standardised colour and brand details in addition to the picture warning. The implications of standardised packaging for the efficiency of existing equipment is likely to be of greater concern to packaging manufacturers.

⁶⁵ Available at the DH website:
http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_077963.pdf

⁶⁶ Tiessen J, Hunt P, Celia C, Fazekas M, de Vries H, Staetsky L, Diepeveen S, Rabinovich L, Ridsdale H, Ling T (2010). Assessing the impacts of revising the Tobacco Products Directive: study to support a DG SANCO Impact Assessment. Cambridge: RAND Europe.

94. At present, around 90% of UK cigarette packets are printed on gravure machines costing around €8m for a new nine colour press. Much of this equipment, with a lifespan of perhaps 20 years, is relatively new, having been installed to cope with new pack design features introduced by tobacco manufacturers in the last three to five years. It is estimated that approximately €200m has been invested in tobacco packaging equipment across Europe in the last ten years, around 10% of this in the UK. Under standardised packaging, printing of cigarette packs could be performed on offset machines costing around £2m new (£0.5m second-hand), introducing greater competition and exerting downward pressure on costs towards the lower end of the current range of packaging costs (€10-€50 per 1,000 blanks). Since tobacco companies tend to redesign their brands periodically, the introduction of standardised packaging would avoid the costs of brand redesign, yielding additional savings to business.
95. The European Carton Makers Association ECMA estimate that 60% of gravure printing plant in the UK would cease operations if standardised packaging was introduced. We can derive a rough estimate of the value of the capital stock which might be affected by taking €20m investment spread over the last ten years as our reference point. Assuming a lifespan of around 20 years, this equipment might have a current book value of around £10m. Some of this investment will have been made to replace existing machinery but, if we assume that this has been added to an existing capital stock with an illustrative current value of £10m, then there would be around £20m worth of machinery in total. If 50% - 60% of this is written off (consistent with ECMA estimate), then machinery to the value of between £10 and £15m might be written off (estimates rounded to £5m) unless it can be re-assigned to the export market. This corresponds broadly to the seven presses currently in operation with an average book value of around £4m each (50%-60% of which might become redundant) assuming an average age of around 5 years. This is higher than the estimate reported earlier based on the Rand study, although we reiterate that the impact on the value of multinational packaging businesses of the introduction of standardised packaging in the UK would be felt partly in countries other than the UK. After adjustment to a standardised packaging environment, as discussed later in this IA, there would be cost savings to business. Tobacco packaging manufacturers have told us that standardised packs would be substantially cheaper to produce. We have based our estimate of these savings on the gravure process, which would be faster and require fewer raw materials under standardised packaging, although a switch to less costly offset lithography equipment and greater competition would also be expected to reduce costs.
96. Imperial Tobacco have several machines specially engineered to produce the Glide Tec design, which was launched on to the market in 2011. In addition to supplying the UK market, a significant proportion of the outputs of these machines are intended for the export market (over 20 markets), thus limiting the impact of a UK-specific standardised packaging regime. Glide Tec design is unlikely to conform to TPD requirements hence any costs incurred due to standardised packaging will already have occurred under our base case, thus giving an incremental cost of zero.

TPD

97. As described in Annex E, the revised TPD will require changes to be made to cigarette packages and HRT, such as to display larger warnings and the minimum dimensions of packs will be determined by the required dimensions for health warnings. In light of these requirements, it is likely that the machinery employed by packaging manufacturers will need to be reconfigured to produce packs in accordance with the TPD. For example, in the gravure printing process there will likely be the need for new plates to print the new packs with larger warning signs.
98. Where manufacturers are expected to incur set up costs in order to reconfigure equipment in light of the TPD, the incremental cost of standardised packaging over and above this could be close to zero. Where the requirements of standardised packaging result in expenditure on new equipment, and where this expenditure is equal to that under the TPD, there is no additional cost under option 2 relative to option 1.
- 98b. If the impacts of standardised packaging on tobacco consumption were to occur at a particularly rapid pace there may be additional transition costs faced by employees in the tobacco and/or packaging industries. An example of this would be the cost of finding a new job. It is anticipated, however, that the transitional period will extend over a long enough duration such that any resultant staff turnover will be absorbed within the wider economy. This is not expected to exceed employee turnover as per the usual cycle. This assumption is also noted above in paragraph 86

Disposal costs

99. There is a chance that duty paid branded packs could be disposed of during the transition to standardised packaging. When considering Australia, the Chantler review stated “retailers returned a significant quantity of tobacco stock in branded packaging during the first half of 2013 which was subsequently destroyed rather than smoked”. This is expected to be dependent on the details of any sell-through period of the legislation.
- 99b. The draft regulations propose allowing a 12-month sell-through period for tobacco products that were manufactured before May 2016. We have no reason to believe that there would be any significant quantity of non-compliant tobacco stock after this sell-through period. The same sell-through period was provided when picture health warnings requirements were introduced in the UK in 2008. The Department of Health was not made aware of any significant quantity of non-compliant tobacco stock at the end of that 12-month period. Tobacco products carrying picture warnings were available in shops within one month of the introduction of the legislation. In addition, due to the high cost of tobacco products, we are aware that small shops are unlikely to carry large stocks of tobacco in reserve, and generally sell and replenish stock on a regular basis. We have not provided any quantification here as a result but we may explore quantification in later versions of this IA.

Enduring Costs

100. A report by Europe Economics (2008)⁶⁷ argues that, following a transition period during which costs are incurred to switch to standardised pack manufacturing, branding costs would no longer be incurred and ‘costs for cigarette manufacturers would ultimately tend to fall’. We note, in this context, that, although standardised tobacco packaging in the UK would imply a different pack style from most other countries, there already exists variation in branded pack styles between countries in the EU, not least due to the use of different health warnings and different pack size requirements in different Member States. The Rand Europe study argued that the ongoing administrative burden of introducing plain or generic packaging is ‘probably negative’ because of lower production costs with standardised packaging, although this impact is not quantified. Responses to the consultation suggest that plain packaging would reduce costs for suppliers of counterfeit tobacco and it will presumably have a similar impact on the costs of legitimate production. Consultation with packaging companies has likewise indicated a cost reduction under standardised packaging. A penny saving on the production cost of a blank cigarette carton is broadly consistent with the estimated range of costs reported earlier. In addition, there are likely to be cost savings in the assembly of the final product. For our estimate of the cost saving associated with the production of a standardised rather than a branded pack, we take the mid-point of the range of 1-3 pence (2 pence) estimated for the possible savings on the production cost of a counterfeit pack under standardised packaging.⁶⁸ This gives a saving of around £30m per year at current volumes. Over a ten year period following the effective date of the policy, total discounted savings are estimated at £304m.
101. In summary, one-off costs to packaging companies are estimated at £10m-£15m in terms of redundant machinery. Lost revenues due to increased downtrading are expected to result in a one-off loss of asset value to the UK of £166m. Reduced production costs associated with standardised packs give cost savings over a ten year period of £304m. *To further elaborate this IA, we would welcome views on the estimates in this section, including those relating to the TPD.*

Reduction in Retail Transactions Costs

102. The IA for the tobacco display legislation cited a total of 66,710 shops selling tobacco in the UK (8,151 large and 58,559 small). Specialist tobacconists (as defined in TAPA) consist of around 50 small shops in England.⁶⁹

⁶⁷ Europe Economics (2008). Economic analysis of a display ban and/or a plain packs requirement in the UK. London: Europe Economics.

⁶⁸ Joossens L (2012). Smuggling the tobacco industry and plain packs. London: Cancer Research UK.

⁶⁹ There are special provisions with respect to tobacco advertising and promotion (including display) for specialist tobacconists, provided they meet the definition set out in legislation.

103. If selecting and serving a standardised tobacco pack takes longer than for a branded pack, retailers would bear some costs. Whether these costs would be significant has been explored through consultation and through recent empirical research. Any impact on serving time would also impact on the leisure time of consumers. Similarly, if selecting and serving a standardised tobacco pack is quicker, then there would be benefits.
104. There are few studies which have directly investigated the serving time required for a standardised pack as opposed to a conventional branded pack. One simulation study among participants unfamiliar with cigarette packs, while not being directly applicable to a typical retailer, suggests that serving staff may adapt quickly to the requirement to distinguish between packs and may be able to serve a standardised pack in the about the same time as, or more quickly than, for branded packs.⁷⁰ The study found that the average transaction was slightly quicker for standardised packs than for branded packs (2.92 vs. 3.17 sec; $p=0.040$). When selecting standardised packs, 17.3% of participants made a mistake compared with 40.4% when selecting branded packs.
105. The design of this simulation experiment means that we should be cautious in applying its findings to the real-world environment of the tobacco retailer. Here, we simply observe that familiarity with the study task soon appeared to mitigate the initial increase in serving time. In practice, there are means by which the effect of removing visual cues from packs could be mitigated, such as arranging packs in alphabetical order.
106. To investigate the impact of plain packaging on serving times in the retail environment, the Rural Shops Alliance (RSA) commissioned a study (funded by British American Tobacco) comparing serving times in four convenience stores in England during a week with conventional packaging and a week with standardised packaging.⁷¹ Each store was fitted with CCTV cameras to record customers' transactions over the two seven day periods, the usual store environment being recorded in the first week and the standardised packaging environment in the second. Standardised packaging was simulated by over-sleeving of all cigarette packs on display. All cigarette transactions were recorded and analysed by trained video processors to generate a series of metrics relating to each transaction. A number of stages were identified for each purchase, from the customer reaching the counter through to instructing for tobacco, the shop assistant picking the product from the shelf and putting it on the counter to the customer paying for the product, or a transaction error being recorded, prompting a fresh transaction. Some 23,887 transactions were tracked in total, of which 3,851 contained tobacco. The study found that, in the control week, selection time and total transaction time were estimated at 11 seconds and 30 seconds, respectively, compared with 28 seconds and 58 seconds under standardised packaging. Based on these findings, the RSA estimated the total annual cost to the convenience store sector (accounting for 50% of the tobacco market) in the UK to be £37m.
107. DH received a critique about this study⁷² suggesting that the features of its design make the generalisability of the results beyond the confines of the study problematic, with the conclusion that tobacco transactions take longer than they would otherwise in real life situations if:
- the cigarette packs are covered in unusual, plain sleeves;
 - the sleeves are novel to both the retailer and customer;
 - the retailer and customer are aware they are participating in a study;
 - (and probably most importantly) the cigarette packs are not arranged in alphabetical order.
108. The critique acknowledged weaknesses of both the Carter et al. (2011) and RSA studies, with real world data from Australia preferred to either. Since these studies were conducted, such real world data has become available. A study⁷³ among over 300 outlets in Sydney, Melbourne, Adelaide and Perth

⁷⁰ Carter O B J, Mills B W, Phan T, Jonathon R Bremner (2011). Measuring the effect of cigarette plain packaging on transaction times and selection errors in a simulation experiment. *Tobacco Control* doi:10.1136/tobaccocontrol-2011-050087 in Moodie C, Stead M, Bauld L, McNeill A, Angus K, Hinds K, Kwan I, Thomas J, Hastings G (2012). *Plain tobacco packaging: a systematic review*. Stirling: University of Stirling.

⁷¹ Visuality (2012). The effects of standardised tobacco packaging on retail service in the UK. Weymouth: Rural Shops Alliance.

⁷² Owen Carter, personal communication.

⁷³ Wakefield M, Bayly M, Scollo M (2013). Product retrieval times in small tobacco retail outlets before and after the Australian plain packaging policy: real world study. *Tobacco Control* 0:1-7.

compared retrieval times in December 2012, after the introduction of standardised packaging, with two baseline months, June and September 2012. The retrieval time in December (12.43 seconds) was found to be significantly higher than in September (9.84 seconds) but not significantly different from June (10.91 seconds). Retrieval times adjusted quickly to the introduction of standardised packaging, falling from 16.03 seconds between 3 and 5 December to 8.15 seconds between 8th and 12th December, a figure which did not differ significantly from either baseline month. The findings of this research are similar to those of a study by Carter et al. (2013),⁷⁴ undertaken at 100 convenience stores, newsagents, petrol stations and supermarkets in Perth one month before and after the introduction of standardised packaging in Australia. Published as a letter to the *BMJ*, the study found that, between October 2012 and January 2013, average transaction times decreased from 8.94 seconds to 7.39 seconds, a statistically significant reduction. We conclude here that any impact on retail time costs is likely to be extremely short lived and is likely to be negative beyond the immediate point of introducing standardised packaging.

109. We have estimated a cost saving to retailers and customers as a result of standardised packaging assuming a 1.5 second time saving per transaction. This draws on all the information above, and is most similar to the findings in the *BMJ* letter with its real-world environment data over a relatively long time period. Savings to retailers are based on the hourly rate for “sales assistants and retail cashiers” from the 2012 Annual Survey of Hours and Earnings, with a 30% uplift to allow for overheads and adjusted to 2013 prices using the GDP deflator. The number of transactions was based on the estimated number of packs sold and the finding from the RSA/Visuality study of an average 1.5 packs per transaction. Cost savings to customers used the value of leisure time estimated by the Department of Transport⁷⁵ again uprated to 2013 prices. This gave a combined saving of £9m per year or £69m over 10 years discounted. We welcome views on these estimates during consultation.

110. The Department of Health’s 2012 consultation document states the following:⁷⁶

“Consistent with the allowances for advertising in section 4 of the Tobacco Advertising and Promotion Act 2002, we do not believe that standardised packaging requirements would be necessary during the course of business solely within the tobacco trade. This means that brand names, colours and logos would still be allowed to be used openly within the tobacco trade. However, tobacco products that are made available for sale to the public, or that could be visible to the public, would need to meet the requirements” of a standardised packaging policy.

111. Accordingly, we do not expect any significant changes for wholesalers and retailers in their acquisition and management of stock.

Small retailers

112. The Local Shop Report 2013 from the Association of Convenience Stores suggests that 21.1% of sales are due to tobacco.⁷⁷ Since this is an average, clearly some stores will have lower proportion of sales due to tobacco, while others higher. Responses to the consultation suggest that tobacco may account for up to 30% of the revenue of a convenience store although, anecdotally, the profit margins on the sale of tobacco may be relatively low. Planning how to cope with changing demand may be more difficult for small retailers than for larger supermarkets and chains. However, there are many trends already impacting on small retailers such as confectionary/tobacconist/newsagents (CTNs). They include: sales via the internet; economic cycles; the rise of big supermarkets; town planning strategies; demographic change; the long-run decline of smoking; long-run changes in demand for hard-copy newspapers; and trends affecting confectionery sales. Hence small retailers such as CTNs, in order to thrive in this

⁷⁴ Carter O, Welch M, Mills B, Phan T, Chang P (2013). Plain packaging for cigarettes improves retail transaction times. *BMJ* 346:f1063.

⁷⁵ Department of Transport (2013). Values of time and vehicle operating costs. London: Department of Transport.

⁷⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/170568/dh_133575.pdf

⁷⁷ The Local Shop Report 2013, a report by the Association of Convenience Stores. available at: http://www.acs.org.uk/filemanager/root/site_assets/research/local_shop_report_2013/local_shop_report_final_web.pdf

changing world, already need to be planning their future business strategies, considering diversifying, and thinking about how to cope with all the trends and shocks that are likely to affect them. Our assumption is that standardised packaging will not add greatly to these needs for future-proofing. We have summarised the potential impacts faced by small and micro businesses in the section headed “Small and Micro Business Assessment” later in this IA.

General employment levels

113. There has been some assessment of the employment impacts of reduced levels of smoking. A report by York University⁷⁸ looked at the expenditure patterns of current and ex-smokers. They concluded that, as ex-smokers spend more on recreation and entertainment, the net impact would be to increase employment. Their results indicate that “policies aimed at reducing smoking-related diseases and deaths may also benefit the economy by creating more jobs...[and]...it is fortunate and reassuring to discover that government health policies are also good for employment.” (Buck, Godfrey, Raw & Sutton, 1995)

Costs to the exchequer (iii)

114. There are several mechanisms by which costs will be incurred by the Exchequer through loss of tobacco taxes, as follows:

- Consumption reduction;
- Illicit purchases
- Cross-border sales
- Downtrading from higher price to lower price brands;
- VAT, some of which will be recouped on spending on other goods and services;
- Drop in price – if standardised packaging results in tobacco manufacturers dropping their prices, then there will be a loss of tobacco duty from cigarettes from lower prices, per pack bought. Sir Cyril Chantler states in his report that “it is my view that the risk of such effects undermining the objectives of a standardised packaging policy are small and that the impacts could be readily mitigated through taxation if nevertheless they were to materialise.”

115. For the loss of cigarette sales brought about by reduced prevalence, we make the assumption that consumption of higher priced brands (premium and mid-price) will decrease more than those of lower priced brands (economy and ultra-low price). The relative shift towards the lower price segments resulting from this is compounded by a continuation of switching from the higher price to the lower price segments. In the base case, we assume that the decrease in prevalence due to standardised packaging is twice that in the higher priced brands than the decrease in prevalence across all brands. Also in the base case, we assume that the rate of downtrading from higher price to lower price brands under standardised packaging occurs at twice the trend downtrading rate. Table 1 provides an illustration of the implications of our assumptions regarding the impact of standardised packaging on smoking prevalence and downtrading (see Annex D for further details). These assumptions take into account the expected impact of the TPD.

Table 1: Illustration of the IA assumptions on the tobacco market

Year	Prevalence (%) - no Standardised packaging	Prevalence (%) - with Standardised packaging	Market size with Standardised packaging (million packs)	Market share – current downtrading trend (including Standardised packaging)		Market share – double downtrading trend (including Standardised packaging)	
				Premium/ mid-price	Economy / ULP	Premium/ mid-price	Economy/ ULP
2016	19.66	19.32	1,962	28.3%	71.7%	26.4%	73.6%
2017	19.54	18.85	1,914	25.8%	74.2%	22.4%	77.6%
-	-	-	-	-	-	-	-
2025	18.96	18.27	1,856	15.1%	84.9%	7.3%	92.7%

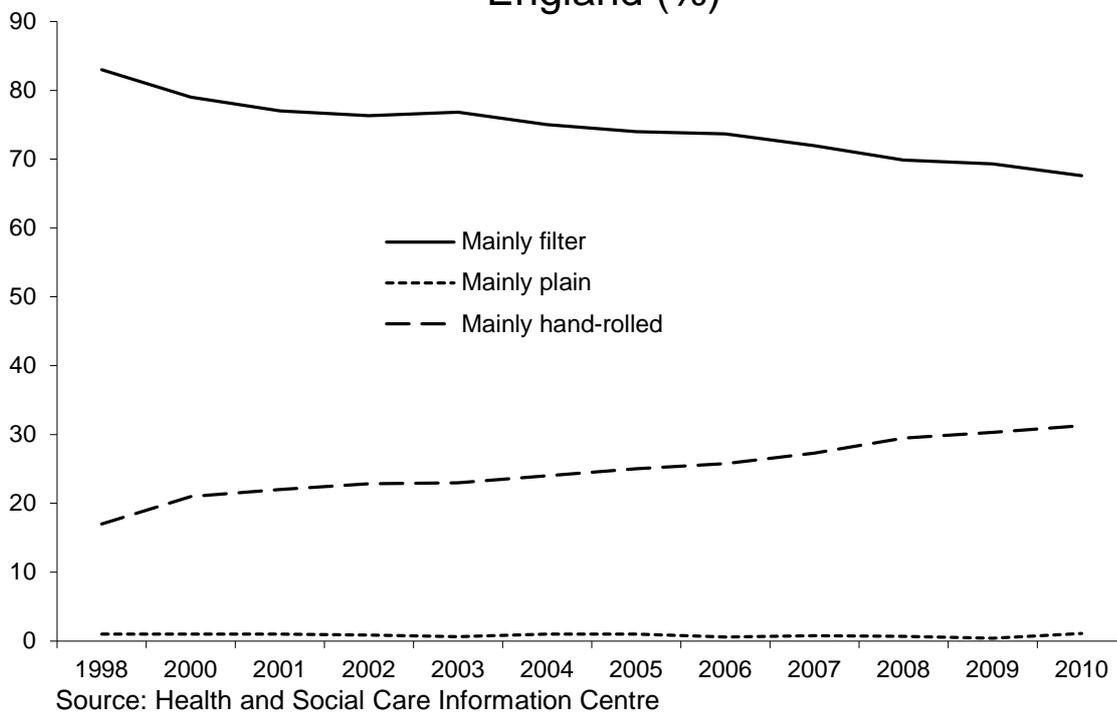
⁷⁸ <https://www.york.ac.uk/media/che/documents/papers/occasionalpapers/CHE%20Occasional%20Paper%2023.pdf>

116. For changes in consumption, we report a potential lifetime impact on duty consistent with the magnitude of the impact on health. The estimates of lost duty have been updated since the IA on the legislation ending the open display of tobacco in shops and use the same methodology as for health benefits (see Annex A). For every additional adult smoker who quits, there is a lifetime loss of duty around £4,000. For every young person who no longer takes up smoking, there is a lifetime loss of around £11,000. Lifetime losses of duty and VAT are estimated at £2.1bn using a ten year time horizon and allowing for mortality and the probability that those quitting as a result of standardised packaging would have quit at some point in the future. Lost duty plus VAT due to downtrading are estimated at £181m up to year 2025 (ten years following the expected effective date of the policy). This figure does not reflect the potential changes in the illicit market and cross border shopping, which will be investigated after this consultation stage IA.
117. The losses of duty and VAT mentioned above are for illustrative net present value purposes. These are likely to differ significantly from any Exchequer impact that will eventually be incorporated into the Public Finances, which will have to be certified by the Office for Budget Responsibility (OBR), if the policy were to be enacted. In part the differences will be down to issues that are not appropriate for inclusion in this Impact Assessment e.g. not discounting, different relevant timeframes etc. In addition consideration will be given to various behavioural responses which are relevant to both the Public Finances and the Impact Assessment. There are significant elements of judgement involved in the applicable behavioural responses around which the OBR will take their own view. In addition over time as more evidence becomes available this may impact on relevant estimates. We therefore expect that the figure that will eventually be incorporated into the Public Finances will differ significantly in light of OBR judgements and any future evidence.
118. Our base case figures do not reflect potential losses should there be an increase in the illicit trade and/or an increase in cross-border shopping. The overall exchequer revenue loss could therefore be higher. We later provide an illustrative estimate that for cigarettes this may be in the order of £2bn discounted over 10 years. This estimate is for illustration only, however, and is not included in the overall NPV calculation due to the high levels of uncertainty around this estimate. Similarly, the health benefits due to the overall reduction in tobacco consumption may therefore be correspondingly lower (as addressed in the critical value analysis). Consumers' behaviour is also likely to have an impact on tobacco duty revenues, as there may be downtrading within the cigarette market or further down-trading to HRT. This would be in addition to any downtrading that is currently occurring. Finally, if standardised packaging results in tobacco manufacturers dropping their prices, then there will be a loss of tobacco duty from cigarettes from lower prices, per pack bought. Sir Cyril Chantler states in his report that "it is my view that the risk of such effects undermining the objectives of a standardised packaging policy are small and that the impacts could be readily mitigated through taxation if nevertheless they were to materialise."
119. In previous IAs, we have excluded any impact on VAT receipts on the basis that any loss is expected to be matched by a compensating gain elsewhere in the economy. Here, we allow for the difference between VAT on tobacco (20%) and the average rate of VAT in the economy (around 13.2%) to obtain an additional item for lost VAT (around £870 per young person who no longer takes up smoking and around £310 per adult quitter). These estimates of lost receipts are indicative and do not allow for future changes in rates of duty, changes in market shares of different brands, changes in smoking patterns or purchasing habits.
120. Given that standardised packaging may increase the attractiveness of counterfeit and/or illicit products (such as those illicit products that still carry branding) the policy may lead to a more elastic duty paid market (increased behavioural response to future duty changes) if the industry doesn't change its pricing strategy. For example, a duty increase, if it is passed on as a price increase, is very likely to reduce consumption of duty paid cigarettes more under this scenario than in a pre-standardised packaging environment. This is because product differentiation between duty paid and illicit or counterfeit will be minimized (or at least reduced) in a plain packaging environment. A more elastic duty paid cigarettes market has wider implications. Although increased price elasticity might increase the effectiveness of duty changes as a means for limiting tobacco consumption, but only if reduced distinction between legal and illicit packaging were compensated by stronger measures to deter illicit imports, these stronger measures are likely to involve additional resources and funding which cannot be assumed or guaranteed

Loss of tobacco duty due to downtrading

121. For switching between brands, we provide an illustration of the implications of additional switching of a magnitude equal to that of the historical trend (i.e. downtrading occurs at twice the trend rate under standardised packaging). The trends in brand share are explored further in Annex D
122. By 2025, the number of premium and mid-price packs is estimated to fall to around half of the number anticipated under continuation of the historical trend. We have not made any allowance for further switching between tobacco and HRT⁷⁹, as has been the trend in England over the past 15 years (illustrated in Figure 3). Any acceleration or deceleration in this trend would have an impact on duty receipts due to differential duty regimes (lower duty on HRT) and to the higher likelihood of illicit HRT avoiding duty altogether. Switching between HRT brands is not, however, an issue for duty receipts as duty on HRT is levied by weight (although potentially there could be a relatively very small loss due to decreased VAT the majority of which is expected to be recouped elsewhere in the economy as discussed previously).

Figure 3: Type of cigarette smoked by adults, England (%)



123. To estimate the loss of duty from downtrading, table 2 presents the duty comparison for an illustrative example of downtrading from the premium/mid-price segment to the economy/ultra low price (ULP) segment. We have estimated the average prices for these two broad groupings on the basis of prices by market segment provided post-consultation (adjusted for the 2014 budget) and the market shares presented in Annex D. The difference in duty on a packet of cigarettes between the premium/mid-price segment and the economy/ULP segment is relatively small at £0.16. The corresponding loss of VAT which would not be recouped by expenditure elsewhere in the economy is around £0.05.

⁷⁹

We may explore expanding on the reasoning behind this assumption in later versions of the IA

Table 2: Duty comparison between market segments

	Premium + Mid-price	Economy + ULP
Price	8.15	7.18
Ad valorem duty	1.34	1.18
Specific duty	3.68	3.68
Total duty	5.03	4.87
VAT	1.36	1.20
Price less duties and less VAT	1.76	1.12

Illicit and Cross Border Shopping (CBS)

124. The Chantler review set out the Illicit product categories as follows:

- **Contraband:** legally manufactured by the major tobacco companies. Smuggled into the UK either from other countries (where they are duty paid in that country but due to higher UK duty are still worth smuggling into the UK). Typical examples of this in the UK would be French cigarettes in French packs
- **Illicit Whites:** legally manufactured by companies often based in emerging economies with the intent on exporting illegally to other countries through a smuggling network. Brands are typically imitation brands, copying the “look and feel” of well-known legal brands. Known illicit white brands are ‘Manchester’ and ‘Jin Ling’
- **Counterfeit:** illegally manufactured copies of well-known existing brands. Often very high quality copies of the pack, but distinguishable from legal duty free through the lack of identifiable production/security markings. Product quality is often poor.

125. People travelling from the EU may legally bring unlimited amounts of duty paid (but not UK duty) tobacco products bought in another EU country back into the United Kingdom for their own use, subject to United Kingdom customs regulations. This legal practice is known as “cross-border shopping” (CBS).

Recent trends in Illicit and Cross Border Shopping (CBS) share

126. According to HMRC data, the size of the illicit cigarette and HRT markets has been steadily declining since 2000 with the exception of a recent rise. This is due to the success of the Government’s strategy on illicit tobacco that includes sustained investment in enforcement activity. Although compliance measures are in place to mitigate generic risks associated with illicit tobacco goods, HMRC assesses that standardised packaging is likely to enhance and diversify current risks that the UK faces from tobacco fraud, although there is no direct information or evidence to enable estimation of any increase to the size of the illicit market. Further to this, an increase in cross border shopping cannot be mitigated where it involves travellers from the EU legally importing unlimited quantities of duty paid (but not UK duty) tobacco products for their own use. A potential increase in the size of the illicit market, apart from the adverse effect on duty receipts, may limit the potential influence of future tobacco duty policy. The potential impact on the UK duty unpaid market remains unknown and unquantified. If the illicit market increased significantly it could significantly increase the costs of a standardised packaging policy.

127. The work by Pechey et al (Annex B) elicits expert’s judgement on the numbers of smokers, not the number of smokers who smoke UK duty paid tobacco. Therefore we assume the experts would have taken into account some mitigation of smoking reduction due to the availability of illicit and foreign tobacco available from CBS. Therefore we would not expect an increase in the size of the illicit market or cross-border shopping due to those who would have quit, no longer doing so. However, if this was to occur, then there would be a corresponding impact on the projected health benefits, which is explored further in the critical value section.

128. Loss of excise duty and VAT would result from any increase in the share of the market represented by the illicit trade and any switching from standardised tobacco packs to branded packs sourced from other

countries. Estimates are available for the impact on duty receipts of an increase in the share of the market accounted for by the illicit trade but not the impact of standardised tobacco packaging on this share. It is hard to predict the potential impact on the complex and dynamic nature of the illicit trade in contraband and counterfeit tobacco and any switching in legitimate trade to branded packs purchased abroad.

129. Based on 2013 tax gap data, the loss of duty and VAT from a 9% illicit cigarette market share was £1,100m in 2012/13.⁸⁰ For HRT, the loss in duty and VAT from a 36% illicit market share was £900m. The consultation has identified potential risks of the illicit market increasing if standardised packaging is introduced. Although the consultation has provided no basis to quantify a change (either an increase or decrease) in the tax gap, it is important to consider the potential impacts if it did. However, it should be noted that the independent review led by Sir Cyril Chantler concluded “I am not convinced by the tobacco industry’s argument that standardised packaging would increase the illicit market, especially in counterfeit cigarettes. There is no evidence that standardised packaging is easier to counterfeit, and indeed in Australia, hardly any counterfeit standardised packages have been found to date.”
130. It is worth noting that the TPD includes measures against illicit trade of tobacco such as an EU-wide tracking and tracing system for the legal supply chain and visible and invisible security features (e.g. holograms) aimed to facilitate law enforcement and help authorities and consumers detect illicit products (Annex E). These measures may help to reduce this risk relative to a world without TPD.
131. Table 8 shows that legitimate CBS of cigarettes has decreased to a plateau of around 3% over the last few years, the main reason for this being a sharp decline in passenger journeys from UK residents to the EU and the less favourable £/€ exchange rate. However, we would expect the CBS share of the UK tobacco market to increase towards pre-2008 levels as these external factors unwind. Indeed, tobacco industry surveys show an increased market share of UK duty unpaid cigarettes in 2012, and this is backed up by ONS data showing an increase in UK passenger travel in late 2012 and an improved exchange rate. The CBS share could increase further if standardised packaging was introduced in the UK but not in other EU countries, with the extra incentive of tobacco in branded packets being available at cheaper prices. While attempts to sell tobacco bought in other countries could be identified by law enforcement, legitimate CBS may yet mitigate some of the benefits of standardised packaging in the adult population and result in a loss of revenue to the Exchequer. The same losses associated with an increase in the illicit market share would apply to an increase in the CBS share. Based on 2013 tax gap data, for every percentage point increase in the tax gap, we would expect a revenue loss of around £120m for cigarettes and £25m⁸¹ for HRT per annum. Any change in CBS would be additional to the illustrative figures stated above; this is a particularly large risk as an increase in CBS when undertaken for personal use cannot be mitigated.

Table 8: Components of the UK tobacco market

Cigarettes	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
UK Tax Paid Consumption	72%	72%	74%	72%	76%	78%	79%	82%	83%	86%	88%	90%	88%
Illicit Market	22%	21%	18%	20%	17%	15%	15%	12%	12%	11%	9%	7%	9%
Cross-Border Shopping	6%	7%	9%	9%	6%	7%	6%	6%	5%	3%	3%	3%	3%
<hr/>													
Hand rolling tobacco (HRT)	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
UK Tax Paid Consumption	27%	28%	28%	31%	30%	33%	36%	42%	41%	50%	55%	58%	57%
Illicit Market	61%	56%	55%	54%	62%	59%	55%	49%	50%	42%	38%	35%	36%
Cross-Border Shopping	12%	16%	16%	15%	8%	8%	9%	9%	8%	8%	7%	6%	6%

Source: Tax gap data as above and correspondence with HMRC

Reasons for expecting increases relative to trend in each of these two activities consequential to Standardised packaging

132. It has been argued that standardised tobacco packaging would be easier and cheaper to copy, so increasing the supply of counterfeit tobacco. Against this, standardised tobacco packs would still need to carry coloured picture warnings as well as authentication markings. It is also clear that counterfeiters are already able to copy tobacco packaging on the market in the UK at present, as well as producing other types of sophisticated and accurately replicated goods. Moreover, there is no reason to suppose that

⁸⁰ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/249543/131009_Publication_of_Tobacco_Tax_Gap_estimates_2012-13.pdf

⁸¹ Data from correspondence with HMRC

legitimate tobacco manufacturers would not also enjoy lower production costs. From the point of view of counterfeit and Illicit White manufacturers, the production costs are sufficiently low, that a fall in production costs may provide relatively little additional incentive for these operators. It has been estimated that a packet of Jin Ling (an 'illicit white' brand intended solely for the illicit market) can be produced for €0.16 and that the rate of profit on Jin Ling is as much as 900%.⁸² However, standardised packaging may lead to easier market entry for new counterfeit suppliers leading to an overall increase in the supply of counterfeit cigarettes. Another advantage claimed for the counterfeit trade is that consumers will be less able to detect a genuine standardised pack from a counterfeit pack although it has also been noted that a counterfeit pack sells for around half the price of a legitimate pack, a possibly more important indicator (for consumers and suppliers) of a pack's legal status.

133. It has been argued that smokers may be more likely to seek out branded products in a standardised packaging environment. If this was to occur the CBS share could increase further if standardised packaging was introduced in the UK but not in other EU countries, with the extra incentive of tobacco in more appealing branded packets. Similarly it has been argued that, as branded packs, contraband and Illicit White sales may also increase

Mitigating factors

134. For the size of the illicit tobacco market to increase, there would need to be increased demand for and supply of such products. On the demand side, the evidence is, again, too speculative for use in this IA and, as we have not seen any directly relevant information or evidence, we are not able to provide a robust quantification of how demand for illicit tobacco products could shift should standardised packaging be introduced in the UK. It has been argued that smokers may be more likely to seek out branded products in a standardised packaging environment, whether these are counterfeit branded packs, illicit whites or contraband, with price perhaps being the determining factor. Indeed, it is argued in consultation responses from tobacco industry respondents that high prices of tobacco in the UK, resulting from high rates of duty, are the motivating factor behind the illicit trade. This suggests that any downward pressure on prices of standardised packaging may be a factor mitigating the risk of an increase in the illicit trade. A more elastic duty paid cigarettes market may simply lead to a shift towards illicit or counterfeit products limiting the expected benefits associated with quitting. Mitigation of this risk is possible if enforcement action is enhanced to tackle the supply of and demand for illicit tobacco.

Conclusion

135. We conclude that there is likely to be an increase in the UK duty unpaid segment but we have no means of quantification. In the absence of a quantified estimate of the impact on the non-UK duty paid market, our central assumption is that there may be an (unquantified) increase in the UK duty unpaid segment. Hence, we adopt a critical value approach as a sensitivity analysis later in the IA.

Future Considerations

136. We recognise that using an (unquantified) increase in the UK duty unpaid segment for this IA is not ideal. An alternative would be to make an assumption based on what information is available, appreciating the uncertainty in that assumption and investigating that using a critical value approach. We will adopt this approach in any future IAs if possible. If this approach was to be taken 3 assumptions would be necessary for the tobacco market. For illustrative purposes the assumptions are worked through below for cigarettes which make up the largest part of the tobacco market. This analysis will be performed for HRT as well in due course.
137. Firstly an assumption about the impact of on the illicit cigarette market: We can divide tobacco consumers into two groups - those that currently engage in the illicit market and those that don't. Both groups decide on their illicit consumption given current characteristics of the UK tobacco market (such as price). Assuming all variables do not change except for those included under standardised packaging, it may introduce an additional incentive for both groups to wish to increase their illicit tobacco consumption. Despite an increase in demand, however, the supply of illicit products may be capped,

⁸² JTI (2010). DG SANCO's consultation on the possible revision of the Tobacco Products Directive 2001/37/EC (TPD): JTI's full response. Weybridge: Japan Tobacco International.

especially compared to similar movements in legal product markets. We therefore believe it is not unreasonable to assume a small positive value as an impact of around 0-1 percentage points. This assumption is included in this consultation IA for illustrative purposes only and is subject to change in consideration of review of evidence including consultation responses. This assumption is in accordance with the Chantler Report in which Sir Cyril Chantler considered this noting:

- "5.6 Tobacco manufacturers cite the industry funded KPMG report on illicit tobacco in Australia, which purports to show that there has been a large increase in illicit trade since the introduction of plain packaging. I have considered both this report and a critique. My team have also met with KPMG in order to understand their methods I note that Australian Government departments, both Health and Customs, appear to be strongly of the view that KPMG's methodology is flawed. These Departments point to official Customs data, which shows no significant effect on illicit tobacco following the introduction of plain packaging, backed by analysis undertaken by the Cancer Council Victoria (based on data from the National Drug Strategy Household Survey) that suggests that illicit tobacco in Australia is only 10-20% of the level proposed by KPMG. In a situation where estimates differ by such magnitudes, I do not have confidence in KPMG's assessment of the size of – or changes in – the illicit market in Australia."

138. And concluding: "I am not convinced by the tobacco industry's argument that standardised packaging would increase the illicit market, especially in counterfeit cigarettes "

139. Secondly an assumption about the proportion of those who would otherwise have quit smoking who divert to the UK duty unpaid segment: The most plausible assumption is considered to be that this is already included in the work by Pechey et. al. , (Annex B) which elicits experts' judgement on the numbers of smokers, not the number of smokers who smoke UK duty paid cigarettes. It is appreciated that there is uncertainty in the values from Pechey et al.'s work and this is considered in the sensitivity analysis section.

140. Thirdly an assumption about the impact on cigarette cross border shopping: Here we note that this value has varied between 3% and 9% over the last 13 years, and hence the variation has had a magnitude of 6 percentage points. The value of interest is not how much this changes, but how much this may change due to standardised packaging. The number of in passenger journeys from UK residents to the EU and the £/€ exchange rate are considered to be the main drivers for this variation. In comparison, smokers seeking out branded packets are assumed to be a much smaller driver, and a plausible assumption is that it could account for around 0-2 percentage points. We believe this is not an unreasonable assumption. Similarly to the illicit market, we can divide tobacco consumers into two groups - those that currently cross border consume and those that don't. Both groups decide on their cross border consumption given current characteristics of the UK tobacco market (such as price). Assuming all variables do not change except for those included under standardised packaging, it may introduce an additional incentive for both groups to wish to consume tobacco from abroad. Since this market is legal, however, the level of supply is unlikely to be capped to the same degree as under illicit trade. We have therefore estimated a slightly larger potential impact. This assumption is included in this consultation IA for illustrative purposes only and is subject to change in consideration of review of evidence including from consultation responses.

141. With the current UK tax paid market at 88% for cigarettes (Table 8) an estimated increase in cross border trade by 0-2 percentage points taken together with an estimated 0-1 percentage point increase in illicit trade gives a 0-3 percentage point increase. This represents around a 2% transfer from the UK duty paid market to UK duty unpaid market.

142. Estimates of the impact on cigarettes with these assumptions give around a £2bn reduction to the NPV estimate of this policy (discounted over 10 years) this will change giving consideration to all tobacco products. This value is a large relative increase to the costs of the policy. However, this is small in comparison to the benefits of the policy, as can also be seen by comparing the assumed 2% transfer to the 20% that would be needed according to the critical value analysis, an order of magnitude different. This assumption is included in this consultation IA for illustrative purposes only and focuses on cigarettes rather than cigarettes and HRT. It is subject to change in consideration of review of evidence including consultation responses.

Health Benefits consequent upon reduced uptake (a) and improved quit rates (b)

143. The evidence review⁸³ found that there is consistent evidence to support the recommendations set out in the FCTC implementation guidelines relating to the role of standardised tobacco packaging in helping to reduce smoking rates, as one part of a comprehensive tobacco control strategy. Evidence from the systematic review suggests that mechanisms by which it might be an effective tobacco control measure include reduced pack and product appeal, increased prominence of the health warning and reduced confusion and false beliefs about the harmfulness and strength of cigarettes. Anecdotally, there are indications that research findings on the link between pack colour and taste (see the 'Perceived quality' section of the evidence review) have been borne out in practice. Cancer Council Australia has received reports of some smokers suspecting that the flavour of the tobacco in the standardised packs has been adversely altered.⁸⁴

144. Despite the limitations of the studies that were considered as part of the evidence review, the authors concluded that:

there was consistency in study findings regarding the potential impacts of plain packaging. This consistency of evidence can provide confidence about the observed potential effects of plain packaging. If and when introduced, existing evidence suggests that plain packaging represents an additional tobacco control measure that has the potential to contribute to reductions in the harm caused by tobacco smoking now and in the future.

145. The evidence on whether and to what extent the introduction of standardised packaging might influence consumption patterns is inevitably indirect because such a policy has been introduced for the first time in only one country, the Australian Tobacco Plain Packaging Act 2011 having been implemented throughout Australia as recently as December 2012. The DH commissioned systematic review of the literature provides indicative research evidence on the direction of impact on smoking behaviour but DH has supplemented this work with information received through consultation and will take account of any later research that becomes available.

146. A quantified estimate of the impact of standardised packaging on smoking behaviour has been based on the findings of a research project undertaken by the Policy Research Unit (PRU) on Behaviour and Health at the University of Cambridge (Pechey et al., 2013).⁸⁵ The Unit receives research funding through the DH Policy Research Programme. The project elicited informed judgements from three groups of internationally-renowned experts on tobacco control, one group recruited from each of Australasia, the UK and North America, with about 10 experts in each group. Participants were provided with the results of the systematic review by Moodie et al. (2012) and asked to state what they believed to be the likely impact of standardised packaging on the prevalence of smoking in adults and the prevalence of children trying smoking. This study was intended to support the development of this IA and inform wider policy-making efforts, in the absence of other evidence on the impact of standardised packaging on smoking behaviour. A summary of the methods and results is included at Annex B.

⁸³ Moodie, C., Stead, M., Bauld, L., McNeill, A., Angus, K., Hinds, K., Kwan, I., Thomas, J. and Hastings, G. (2012). *Plain tobacco packaging: a systematic review*. Public Health Research Consortium, University of Stirling, Stirling.

⁸⁴ <http://www.cancer.org.au/news/media-releases/tobacco-in-plain-packs-tastes-worse.html>.

⁸⁵ Pechey R, Spiegelhalter D, Marteau T M (2013). Impact of plain packaging of tobacco products on smoking in adults and children: an elicitation of international experts' estimates. *BMC Public Health* 13:18-24.

(a) *Value of reduced take-up of smoking*

147. We value the health benefits gained for each quitter or individual who refrains from starting to smoke, in the same way as for the IAs on the legislation to stop the sale of tobacco from vending machines and legislation to end the display of tobacco display in shops. For every young person who no longer takes up smoking, there is a lifetime benefit through increased life expectancy of 1.3 years, valued at around £78,000 (£60,000 per year⁸⁶). Further details of the calculations of health benefits are given in Annex A.
148. From the Pechey et al. (2013) study, the median estimate for the most likely change in the percentage of children trying smoking two years after the introduction of standardised packaging (holding other factors constant) is a decline of three percentage points. All respondents considered a reduction in the percentage of children trying smoking to be the most likely outcome. We note that there was some uncertainty around this figure, with the lowest and highest likely values being no change and a 6.1 percentage point reduction, respectively.
149. This estimate was originally set against a baseline of 27% of 11-15 year olds categorised as 'have ever smoked' drawn from the survey of Smoking, Drinking and Drug Use among Young People in England 2010. The corresponding survey for 2011 (the year before any display ban was introduced) found that the proportion of 11-15 year olds who had ever smoked was around 25%. By the time both the TPD and standardised packaging policies are to commence (2016), we expect the result of the display ban to be a reduction in the proportion of ever smokers to around 21%. To reach this figure, we have applied the estimate of effectiveness data cited in the IA on the prohibition of tobacco displays at the point of sale for the effectiveness of this intervention, to a baseline of 25%. Applying the same proportionate decrease to the percentage 15 year olds classified as regular smokers gives a reduction in prevalence in 15-year-olds, from 10.7% to 9%.
150. We factor in the impact of the TPD to finalise the counterfactual. We assume the TPD is expected to reduce tobacco consumption by a factor of 2.15% over five years, consistent with the prevalence reduction assumed for adults in the TPD IA (see Annex E for further details). We assume this reduction will be evenly spread out over the five years following the introduction of the TPD. After five years the prevalence is assumed to remain constant thereafter. The baseline prevalence of regular smokers amongst 15 year olds after the fifth year following the TPD is just under 9%.
151. On the basis of the Pechey et al. (2013) findings, we use the reduction in prevalence of 3 in 27, or around 11%, to represent the impact of standardised packaging given existing tobacco control measures. As described in Annex E, the TPD will contain measures that overlap with some elements of standardised packaging. We take the 11% reduction and then take account of the shared impact of standardised packaging and TPD (1.25%) to prevent double-counting. This implies a net reduction of approximately 9.9% relative to the Option 1 baseline. Maintaining such a reduction in the prevalence of regular smokers among the 15-year-old age group, from just under 9% to just under 8%, in each successive cohort of young people, gives around 6,600 fewer smokers in each cohort, over and above the benefit attributed to the display ban and TPD.
152. This scale of reduction in young people smoking would generate an additional lifetime benefit of around £520m per year if that reduction in the proportion of young people who are regular smokers were realised immediately. As the expert survey asked respondents to state the change in prevalence two years after the introduction of standardised packaging, we attribute the full benefit to year two onwards, with one half of this benefit being attributed to year one. We have limited the time horizon to 10 years following the expected implementation of standardised packaging; the discounted value of health gains over this period is around £4.4bn. Extending the time horizon would increase the number of cohorts of young people for whom we register benefits.

(b) *Value of improved quit rates*

153. For every additional adult smoker who quits, there is a lifetime benefit of 1.02 life years, valued at around £61,000. The median estimate for the most likely smoking prevalence in Pechey et al. (2013) gave a one

⁸⁶ DH assigns a value of £60,000 to a Quality Adjusted Life Year. Where Quality Adjusted Life Year estimates are not readily available, and it is appropriate this value is used for Life Years. This is consistent with similar valuation of policies that mitigate mortality or morbidity risk by other Government departments, based upon studies of what members of the public are on average willing to spend to reduce their own mortality risk, or to improve their own health outcomes.

percentage point decline two years after the introduction of standardised packaging, with median estimates for the lower and upper values of no change and a 2.25 percentage point fall. In the survey, these changes were against a baseline of 21% prevalence. This figure is higher than the most recent estimate of prevalence from the General Lifestyle Survey/Opinions and Lifestyle survey of 19.9%. We make an adjustment to this baseline by applying an annual 0.04 percentage point decrease in prevalence rate due to the display ban to construct an expected prevalence profile up to 2025 (ignoring TPD). The decrease in prevalence due to the display ban is taken from the IA for the ending of tobacco displays. This gives us an initial baseline prevalence of around 19.8% in 2016.

154. Again we factor in the impact of the TPD to finalise the counterfactual. We assume the TPD is expected to reduce tobacco consumption by a factor of 2.15% over five years, consistent with the TPD IA (please see Annex E for details). We assume this reduction will be evenly spread out over the five years following the introduction of the TPD. This brings the baseline prevalence to about 19.7% in 2016. Assuming this new TPD baseline, and again taking into account the overlapping elements of TPD and standardised packaging, gives a reduction of around 0.69 percentage points in prevalence due to standardised packaging. Applying this reduction to the UK population aged 16 and over in 2016 gives, around 180,000 additional quitters annually for each of two years. This gives around £11bn of lifetime health benefits attributable to each of these two years. No account is taken of further reductions in smoking beyond two years. Neither the benefits of reduced take-up nor those of increased quit rates allow for improvements in quality of life gains in non-smokers as opposed to smokers.

Reduced Child and Adult Ill-health from SHS and avoidable treatment Costs (c)

155. An additional benefit of standardised packaging would be a reduction in exposure to SHS from reduced rates of smoking. While exposure to SHS is harmful to anyone, children are particularly vulnerable to health conditions caused by SHS exposure. A report by the Royal College of Physicians identifies links between SHS and a number of causes of morbidity in infants and children. The report puts the costs of primary care and hospital admissions related to childhood disease caused by SHS at £23.3m per annum in the UK⁸⁷ in addition to the impact of SHS on adult morbidity and mortality. We would expect this cost to be reduced in proportion to any reduction in adult smoking which might result from a standardised packaging policy.
156. The impact of smoking reduction on the use of health care resources has been illustrated in a study conducted by Sims et al. (2010)⁸⁸ who reported a statistically significant 2.4% reduction in the number of hospital admissions for myocardial infarction (heart attack) in the year following the introduction of smokefree legislation in England. Significant reductions were observed for men and women aged 60 or older and men, but not women, aged less than 60. As in previous IAs, we have not included an impact on NHS costs for the treatment of patients with smoking-related illnesses, despite evidence of the immediate impact on hospital admissions of smokefree legislation. Recent evidence suggests that quitting may, in addition, lead to a reduction in costs over the lifetime compared with continuing to smoke. Modelling has estimated that, if 1% of the total prevalent smoker population of England over the age of 35 were to quit, then the total lifetime cost savings would be around £162m.¹⁶ However, the model is too speculative to be relied upon as it requires assumptions regarding the costs of the alternative causes of death for those who gain longevity from reduced smoking prevalence. We have therefore excluded impacts on health care costs from this IA.

Reduction in health inequalities (d)

157. Although we expect a greater impact of standardised packaging on smoking prevalence among smokers of high price than low price brands, inequalities within lower income groups are likely to narrow as the gap between those who quit smoking and low income non-smokers is reduced. This health gain amongst lower income groups is likely to be more important than the corresponding gain amongst higher income groups – as the latter contain fewer smokers (albeit more of the smokers are likely to smoke high price brands).

⁸⁷ Royal College of Physicians (2010). *Passive smoking and children*. London: Royal College of Physicians.

⁸⁸ Sims M, Maxwell R, Bauld L, Gilmore A (2010), Short-term impact of smoke free legislation in England: retrospective analysis of hospital admissions for myocardial infarction. *BMJ* 340:c2161.

Improved Workplace Productivity (e)

158. In relation to economic productivity, Policy Exchange have estimated the costs of lost productivity due to smoking breaks (£2.9 bn) and tobacco-related absenteeism (£2.5 bn) in the UK⁸⁹, while supplementary analysis undertaken for a NICE appraisal of workplace-based smoking cessation interventions estimated a potential productivity gain of £6000 per treated employee (with the inclusion of the costs of smoking breaks).⁹⁰ The main analysis carried out for the appraisal estimated a lifetime productivity loss per person in the absence of any smoking cessation intervention of £3,458⁹¹, based on the 2005 ASHE average hourly wage rate. Uprating this figure for the increase in hourly wages between ASHE 2005 and the latest provisional 2013 ASHE gives a productivity benefit of £4,200 per employed adult quitter. Adjusting for the proportion of smokers in employment of 58% (quoted in NICE's tobacco return on investment toolkit) gives a lifetime productivity gain per adult quitter of £2,400.

Cleaner streets (f)

159. It has been estimated that, in 2007, local authorities in England spent £342m⁹² to remove cigarette litter from the streets. As a result of reduced smoking prevalence consequent on standardised packaging, we would therefore expect some savings (unquantified here) to local government, and to businesses, related to the costs of removing cigarette litter on the streets and in business premises.

(iv) Consumer surplus

160. Normally if a desired feature of a product were removed, this would be counted as a loss, of “consumer surplus”⁹³, to the consumer. In the case of addictive products, this theory is more difficult to apply in both principle and practice.

161. The orthodox approach in cost-benefit analysis is based on rational consumer behaviour. If smokers were making a rational trade-off between the utility they gained from smoking (together with avoiding the pain of withdrawal) versus the harm to their health then it could be argued that their current consumption level is a product of that trade-off. Further, anything that reduced the current pleasure from smoking would tip the balance in favour of health, and a lower level consumption would then be rationally chosen. By this argument, lower consumption would be the consequence of the cost of the loss of pleasure from smoking. In this case, this would be an indicator that loss of branding was felt to be a loss of part of the pleasure of smoking. However, in the case of addictive goods, this theory of rational trade-offs is not the only possible approach.

162. As the Chantler Report has noted, “addiction to nicotine involves multiple processes, with evidence suggesting adolescents can experience a loss of autonomy very soon after the first cigarette. None of these processes requires conscious awareness, rather there is a powerful urge to smoke in the presence of stimuli associated with previous absorption of nicotine, which increases as opportunities for smoking become more frequent, especially after the school years. Although two-thirds of current smokers report wanting to give up smoking, quitting is extremely difficult and most smokers make multiple quit attempts before they succeed. Although the number of children taking up smoking has been falling since the 1990s, an estimated 207,000 children aged 11-15 still take up smoking each year in the United Kingdom.”

⁸⁹ Nash R, Featherstone H (2010). Cough up: balancing tobacco income and costs in society. London: Policy Exchange.

⁹⁰ Flack S, Taylor M, Trueman P (2007). Cost impact analysis of workplace-based interventions for smoking cessation: sensitivity analysis of time lost due to smoking. Supplementary report. York: York Health Economics Consortium.

⁹¹ Flack S, Taylor M, Trueman P (2007). Cost-effectiveness of interventions for smoking cessation: Final report. York: York Health Economics Consortium.

⁹² Keep Britain Tidy: Reducing Smoking Related Litter, a guide for businesses. http://www.nerwai.org.uk/uploaded/file/Smoking%2520Related%2520Litter_615.pdf

⁹³ Consumer surplus is typically measured as the difference between the amount the consumer would have been willing to pay and the actual price.

163. In the case of addictive goods like tobacco, branding may act as a cue that stimulates the craving for the good. Removing the cue, in such circumstances, helps the addict to realise their true preferences. An alternative approach to cost-benefit analysis could reflect this, and if so any reduction in consumption due to plain packaging would be taken as indicating that smokers' demand had moved to a level that better reflected their true preferences. Consequently, the former level of demand would not be seen as a reflection of true preferences, but rather a reflection of addiction. Hence that former level of consumption could be regarded as a cost without a compensating benefit.
164. The Chantler Report also notes that “the aim of standardised packaging is to reduce the tobacco package’s visual identity and appeal as an advertisement for the product. There is very strong evidence that exposure to tobacco advertising and promotion increases the likelihood of children taking up smoking. Industry documents show that tobacco packaging has for decades been designed, in the light of market research, with regard to what appeals to target groups. Branded cigarettes are ‘badge’ products, frequently on display, which therefore act as a “silent salesman.” Tobacco packages appear to be especially important as a means of communicating brand imagery in countries like Australia and the UK which have comprehensive bans on advertising and promotion. It is notable that Japan Tobacco International responded to the decision to introduce tobacco plain packaging in Australia by attempting to sue the Australian Government for taking possession of its mobile “billboard”.
165. Another feature of branding is to distinguish ‘premium products’ from ordinary products. Premium cigarettes are not prohibited by standardised packaging. However, the conspicuous consumption of a premium product will be inhibited. This would represent a loss – again of consumer surplus – to those who wished to consume a premium product conspicuously. It could, though, at the same time represent a gain to those who felt their consumption was made less enjoyable, or were made to feel inferior, by the conspicuous consumption of premium products by others.
166. The measurement of consumer surplus is thus highly complex in such circumstances. We acknowledge that under “rational choice” assumptions, people who stop smoking, or lose the pleasure of branding, may lose some consumer surplus. Also, many who quit will, in the early stages of becoming ex-smokers, suffer from withdrawal symptoms, although for many this will be temporary. On the other hand, there is another view that becoming free from an addiction enhances consumer surplus rather than diminishes it, and branding may have negative external impacts as well as positive. More detailed discussion on the consumer surplus implications of removing branding is in Annex F.

Pecuniary benefits to quitters (g)

167. There may be thought to be a gain for those who wished to give up, and whose unrealised preferences for quitting are now realised, even above the value of the health gain: they have been aided to realise their second-order preferences (their preference not to choose to buy cigarettes). They now understand the branding to have conveyed misinformation that beguiled them into sustaining an addiction. Drawing on models of addiction with time inconsistent preferences, such as those of Gruber and Köszegi (2008)⁹⁴ and Weimer et al. (2009)⁹⁵, there are reasonable grounds to assign to these individuals a benefit equivalent to their reduction in expenditure on tobacco. On the basis of our pricing and consumption assumptions, an illustrative estimate 10-year NPV estimate for this saved expenditure is around £3bn. In this IA we do not include this potential benefit since the assumptions required around consumer preferences are relatively new and unconventional at this time.
168. Although smokers that decide to quit do so voluntarily and out of their own choice, there may also be grounds to include any withdrawal pains quitters endure. As we do not include the pecuniary benefits accrued by quitters, we also do not make allowance for individual quitting costs in our NPV calculation.

⁹⁴ Gruber J, Köszegi B (2008). A modern economic view of tobacco taxation. Paris: International Union against Tuberculosis and Lung Disease.

⁹⁵ Weimer D L, Vining A R, Thomas R K (2009). Cost-benefit analysis involving addictive goods: contingent valuation to estimate willingness-to-pay for smoking cessation. *Health Economics* 18:181-202.

One in two out (OITO) calculation

169. Impacts we identify as being relevant for OITO are:

- Any costs to retailers;
- Costs for manufacturers associated with changes in production processes.

170. If standardised tobacco packaging were expected to result in higher costs for retailers, then these would constitute an IN for the purposes of OITO. Losses of profits to tobacco companies and others in the supply chain due to reduced consumption of cigarettes or downtrading are an indirect effect (as agreed for legislation to end the display of tobacco in shops) and out of scope for OITO. Likewise, loss of profit to the UK as a result of increased downtrading is out of scope. Packaging companies and tobacco manufacturers would incur costs in the transition to standardised packaging. Some of these costs would have been incurred under option 1 anyway due to the TPD requirements. Overall we expect these to be exceeded by long term cost savings.

171. A reduction in production cost of as little as a penny per packet is likely, in the space of a single year, to outweigh any short term cost burdens. Costs to retailers in the form of increased serving time are expected to be negligible with the impact being short lived (a matter of weeks). Thereafter, retailers are expected to see a reduction in transactions times. Overall, the impact on business beyond the period necessary to make the transition to standardised packs is expected to be positive. The OITO for this policy would therefore be recorded as a zero OUT.

Summary of impact

172. Our quantified estimates of lifetime health benefit are based on the information presented earlier for the lifetime benefits per young person not taking up smoking or adult quitting multiplied by the reduced numbers of young people becoming regular smokers and the increased numbers of adults we expect to quit as a result of standardised packaging. We report annual costs and benefits over a ten year period from implementation of the policy, with health benefits discounted at 1.5% per year and other flows of costs and benefits at 3.5% per year. In the base case, we use the assumption of 2016 implementation, with impacts occurring from 2016 onwards. We distinguish those impacts due to changes in smoking behaviour, expressed in terms of lifetime impact (discounted back to an individual year), from those relating to the overall tobacco market (primarily the effects associated with downtrading), where impacts are related to the specific years in which they occur. Lifetime impacts are reported in tables 3 and 4 for young people and adults, respectively. Table 5 reports the total lifetime impact. Table 6 presents the within year impacts under base case downtrading assumptions while table 7 reports the results of the sensitivity analysis on the extent of downtrading.

Table 3: Lifetime impacts – young people

	Prevalence (%)	Life years (no.)	Health (£m)	Duty + VAT (£m)	
2016	8.5%	4,179	251	-	38
2017	8.0%	8,235	494	-	73
2018	8.0%	8,113	487	-	70
2019	8.0%	7,993	480	-	68
2020	7.9%	7,875	473	-	66
2021	7.9%	7,759	466	-	64
2022	7.9%	7,644	459	-	61
2023	7.9%	7,531	452	-	59
2024	7.9%	7,420	445	-	57
2025	7.9%	7,310	439	-	55
	Total (£m)	74,061	4,444	-	612

Table 4: Lifetime impacts - adults

	Prevalence (%)	Life years (no.)	Health (£m)	Duty + VAT (£m)	Productivity (£m)
2016	19.3%	180,884	10,853	-	756
2017	18.8%	178,211	10,693	-	730
2018					
2019					
2020					
2021					
2022					
2023					
2024					
2025					
	Total (£m)	359,096	21,546	-	1,486
					818

Table 5: Lifetime impacts – total

	Life years (no.)	Health (£m)	Duty + VAT (£m)	Productivity (£m)	Total (£m)
2016	185,064	11,104	-	793	416
2017	186,446	11,187	-	803	402
2018	8,113	487	-	70	-
2019	7,993	480	-	68	-
2020	7,875	473	-	66	-
2021	7,759	466	-	64	-
2022	7,644	459	-	61	-
2023	7,531	452	-	59	-
2024	7,420	445	-	57	-
2025	7,310	439	-	55	-
	Total (£m)	25,989	-	2,098	818
					24,709

173. Lifetime net benefits are around £25bn over the ten year evaluation period shown in table 5. If there were no impact on smoking behaviour, all the figures in tables 3, 4 and 5 would revert to zero. If standardized packaging were introduced, it should be evaluated for its impact on smoking prevalence and shifts in smoking patterns. Table 6 reports the in year impacts related to changes in the overall market while table 7 reports a sensitivity analysis under which those who smoke premium/mid-price packs switch entirely and immediately to economy/ultra low price brands.

Table 6 – Within year impacts (£m): base case downtrading assumption

	Production cost savings (£m)	Lost duty + VAT (£m)	Loss of asset value		Retail transaction costs
			Manufacturers (£m)	Retailers (£m)	
2016	37	- 8	- 44	- 122	8
2017	35	- 12	-	-	8
2018	33	- 16	-	-	7
2019	32	- 19	-	-	7
2020	31	- 20	-	-	7
2021	29	- 21	-	-	7
2022	28	- 22	-	-	6
2023	27	- 22	-	-	6
2024	26	- 21	-	-	6
2025	25	- 20	-	-	6
Total	304	- 181	- 44	- 122	69

Table 7 – Within year impacts (£m): immediate 100% switching

	Production cost savings (£m)	Lost duty + VAT (£m)	Loss of asset value		Retail transaction costs
			Manufacturers (£m)	Retailers (£m)	
2016	37	- 108	-164	-455	8
2017	35	- 93			8
2018	33	- 83			7
2019	32	- 75			7
2020	31	- 67			7
2021	29	- 60			7
2022	28	- 54			6
2023	27	- 49			6
2024	26	- 44			6
2025	25	- 40			6
Total	304	- 674	- 164	- 455	69

174. Over the ten year period, under base case downtrading assumptions, the within year effects give an overall net benefit of £25m. Savings in production costs decline as the total number of packs sold falls while losses to the exchequer increase as the gap between the projected numbers of premium/mid-price packs with and without standardised packaging widens over time. However, this difference levels off as the time horizon increases. Under the assumption of immediate 100% downtrading from premium to value packs, we obtain a net loss of around £920m over a ten year period. The one-off costs for packaging manufacturers in terms of the potential redundancy of capital equipment is estimated to be smaller, in the region of £10m-£15m. The lifetime health benefits are the dominant effect in the analysis. If the lifetime health benefits of the magnitude suggested by the expert panel could be achieved, then benefits would be substantially greater than costs. Recent theoretical approaches to the analysis of

addiction suggest that reduced expenditure on cigarettes can also be counted as a benefit to those smokers who quit. The overall monetised net benefits give an idea of the magnitude of the loss of consumer surplus/civil liberties for those continuing to smoke valued brands which would be necessary to outweigh the benefits of the policy.

175. The case for deferring a decision on standardised packaging pending the collection of evidence from Australia will depend on the ability of such evidence to be generalised to the UK and the speed with which it can be collected, analysed and published. While evidence on the impact for retailers is already becoming available, evidence on the impact on prices and market shares is likely to take longer to emerge and the impact on smoking prevalence may take several years to become apparent. Evidence from Australia is valuable but considerable uncertainties will remain given that the Australian authorities have introduced a raft of tobacco control measures alongside standardised packaging. Australian experience is unlikely to shed light on the implications of standardized packaging for cross-border flows of tobacco into the UK. While there may be advantages in waiting for further evidence to emerge from Australia, the costs imposed by standardised packaging (other than for equipment being written off) are readily reversible.

Summary of impacts - costs and benefits

Stakeholder		Impact	Included in EANCB? Direct or indirect?	Included in NPV?	Quantified Present Value	IA ref (para)
Smokers & quitters	A	Health gain, and lower inequalities in health, from reduced smoking	X Not a business impact	✓ Health gain measured in life-years, and monetised using WTP	£26bn	147-154
	B	Loss of consumer surplus <ul style="list-style-type: none"> • If prefer branded tobacco • Save money and incur pecuniary benefits • If would-be quitters reduce tobacco consumption • Some incur disutility of quitting • Withdrawal symptoms 	X Not a business impact (business impact set out below)	X Usually included, but offset by following points: <ul style="list-style-type: none"> • Branding also produces negative externalities • Tobacco is addictive, so consumption does not reflect true preferences • Lower consumption level better reflects preferences 		160-168, Annex F
	C	Time taken to buy tobacco in standardised packaging	X Not a business impact (business impact listed below)	Time impact measured, and valued as leisure time	£26m	102-109
Businesses who employ smokers	D	Less smoking / fewer smokers at work improves business productivity	X Indirect. Contingent on changed behaviour by smokers	Gain from less smoking: shorter breaks, and less time off sick; valued as avoided loss of work time	£820m	158
Smokers & non-smokers	E	Health gain from reduced second-hand smoke	X Not a business impact	In principle measurable in life-years - discussed only qualitatively in IA		155
	F	Reduced: litter from packaging environmental damage, etc	X Indirect Contingent on changed behaviour	In principle - discussed only qualitatively in IA)		159
Retailers of tobacco & wholesalers	=C	Time taken to sell tobacco in standardised packaging	✓ Direct. Measured by research study, and valued at retailers' time costs	Value of retailers' time	£43m	102-109
	G	Profits reduced: <ul style="list-style-type: none"> • Reduced tobacco sales quantity • Down-trading [Tax implications – see Q below]	X Indirect Contingent on changed behaviour by smokers	NPV of reduced profit stream – only attributable to the impact of reduced premium brand value (down-trading/less premium smokers) Reduced profits from overall fall in tobacco consumption assumed roughly equal to H (that is, H=G+I), therefore, net effect is zero.	(£122m)	86, 89-91

Manufacturers, retailers & wholesalers of other goods and services"	H	Profits increased: <ul style="list-style-type: none"> Ex-smokers spend more on, eg, recreation and entertainment [Tax implications – see Q below]	X Indirect Contingent on changed behaviour by smokers	NPV of increased profit stream Assumed roughly equal to overall profit lost from reduced tobacco consumption in G plus I		86
Tobacco /cigarette manufacturers & their shareholders	I	Profit stream reduced: <ul style="list-style-type: none"> Reduced tobacco sales quantity Down-trading Value of intangible asset, of 'premium brand', could be reduced – for UK. [Tax implications – see Q below]	X Indirect Contingent on changed behaviour by smokers	Loss of intangible asset of 'premium brand', only partially offset by increase in relative value of other brands. Measurable as NPV of net lost profits– only attributable to the impact of reduced premium brand value (down-trading/less premium smokers) Reduced profit from a decrease in overall tobacco consumption assumed roughly equal to H when added to G Only include impact on UK shareholders.	(£44m)	86 89-91
	J	Costs of competitive branding reduced	✓ Direct. Saved expenditure on designing and implementing regular branding changes and on production costs of standardised packs	Included production cost savings in NPV. It is also no longer an option to compete through branded packs, so these costs are saved	£300m	100-101
Tobacco packaging printing companies & their shareholders	K	Some gravure machines to become redundant	✓ Direct. Value of gravure machines in current use written down prematurely	NPV of asset value lost	(£10m - £15m)	92-96
	L	Printing may switch from gravure printing to cheaper offset lithography	X Indirect impact. If switch to cheaper printing – contingent on such a change. Impact on profit is also uncertain.	Not quantified.		92-96
	M	Reconfiguration of machinery (eg plates) to comply with new packs.	X No incremental cost over and above TPD requirements	Not included. Assumed to be nil-to-small due to TPD,		97-98
Printing machines and printing plates producers & their shareholders	N	Potentially, reduced sales of gravure printing machines, but increased sales of offset lithography printing machines	X Indirect If switch to cheaper printing – contingent on such a change	Assumed that the net effect is negligible		
NHS / healthcare	O	Fewer A&E attendances, inpatients, outpatients, GP visits, medication, etc	X Indirect Contingent on changed behaviour by smokers	Savings of NHS expenditure not included. Long-term impact is discussed qualitatively		13, 156

	P	Change in healthcare use due to longer life expectancy & quality of life increase	X Not a business impact	Health benefit is counted at A Costs consequently incurred should, in principle, also be included – long-term impact is discussed qualitatively		156
HMRC & Taxpayers	Q	Revenue changes <ul style="list-style-type: none"> • Less tax and duty, due to: <ul style="list-style-type: none"> ○ Reduced tobacco sales ○ Down-trading ○ More legal importing ○ If illicit share increases • More tax from other goods and services • Overall net reduction in tax revenue 	X Not a business impact	Tax revenue lost and not recovered from consumption of other goods is included in the NPV as a cost.	(£2.3bn)	114-120
	R	Other tax payers pay more to make up net reduction in tax revenue	X Not a business impact	Loss to other tax payers who must pay more (£amount = Q)		114-120

Risks

176. The two key risks associated with introducing standardised packaging are a potential increase in the illicit market and a potential increase in cross border shopping. Both risks may have wider implications for the Government's strategy in limiting tobacco consumption.

Critical value approach

177. Rather than providing a central estimate of the impact of standardised packaging on the UK duty unpaid segment of the market (ie the illicit and CBS market), we have undertaken a critical value analysis which explores the increase in the share of this market required to yield a zero NPV of the policy (more detail of this is included in Annex G). We model two possible sources of increase in the UK duty unpaid market:

- Those who continue to smoke cigarettes under standardised packaging divert to the UK duty unpaid market.
- Those who would otherwise quit smoking divert to the UK duty unpaid market.

178. We assume a percentage of cigarette smokers who continue to smoke under standardised packaging divert from the UK duty paid market to the UK duty unpaid market. This reduces the amount of UK tax for the exchequer, the profits of manufacturers and the profits of retailers⁹⁶, thus decreasing the NPV of the policy

179. We assume the same percentage who would have quit under our base case assumptions, firstly, no longer quit, and secondly transfer to the UK duty unpaid market. This reduces the health benefits and the workplace productivity benefits of these people, thus decreasing the NPV of the policy

180. This percentage is increased until it reaches 20% when we find the NPV of the policy has reduced to zero. Therefore the conclusion is that 20% of the UK duty paid market would need to transfer to the UK duty unpaid market, and 20% of those who would otherwise have quit smoking need to divert to the UK duty unpaid market for this policy not to have a positive NPV.

181. The proportion of the cigarette market that is UK duty unpaid is currently around 12%. If 20% of the UK duty paid cigarette market was to transfer to the UK duty unpaid cigarette market, the UK duty unpaid cigarette market would become 30% of the overall cigarette market. The risk of smokers switching from HRT UK duty paid to HRT UK duty unpaid is not quantified here but may be in future versions of this IA.

Strategy to monitor the risk

182. Monitoring the risk of increased illicit and cross border shopping (CBS) will need to take account of sources of evidence such as the Empty Packs Survey and data collected by HMRC who estimate the extent of CBS and the duty free market on the basis of the International Passenger Survey and commercially provided data about deliveries of cigarettes to ferries. The illicit market is estimated as the sum of declared consumption, based on the General Lifestyle Survey, and undeclared consumption, based on the Health Survey for England, less UK duty paid consumption (based on HMRC clearances), CBS and duty free sales.

Options for mitigation

183. When considering mitigation the risk of an increase in the illicit market Chantler concluded: "that the solution to illicit use is instead to have an effective enforcement regime, and the enforcement agencies in the UK have already demonstrated that an effective enforcement regime and appropriate sanctions can keep illicit to low levels, even in a relatively high tax jurisdiction."

184. There may be ways to mitigate the risk of an increase in the illicit market through strengthened controls and regulation. In Australia, criminal offences were created for those smuggling, conveying or

⁹⁶ Production cost savings and saving from reduced transaction time are also effected but the calculation is not sensitive to these changes.

possessing smuggled tobacco products shortly before standardised packaging came into effect. CBS is more difficult but joint EU action has been considered on cross border distance (internet) sales in the context of a revised Tobacco Products Directive.

185. To mitigate any increase in illicit trade would require additional resources devoted to reducing the demand, and intercepting the supply of illicit tobacco products which would increase costs and the additional funding required cannot be guaranteed or assumed.

Sensitivity Analysis

186. The analysis suggests that the Net Present Value of a standardised packaging policy is considered to be highly positive. There are always uncertainties in any measurement or assumption and we therefore consider the sensitivities of this finding to certain key variables. The most sizable benefits of this policy are the health benefits and pecuniary benefits from people quitting or not taking up smoking. The only cost of a similar magnitude is the cost to the exchequer due to lost duty and taxes from people quitting or not taking up smoking. The key variables that define the size of both these benefits and cost are the number of people quitting or not taking up smoking. Fundamentally these key variables are derived from the work of Pechey et. al. as described previously and in Annex B.
187. Pechey found the overall median estimate for the absolute change in the prevalence of adults smoking two years after the introduction of plain packaging was -1% (between-expert range -3% to 0%). The overall median estimate for the absolute change in the percentage of children trying smoking two years after the introduction of plain packaging was -3% (between-expert range -7.1% to -0.4%). We therefore illustrate the sensitivity to these key variables by considering the approximate impact on NPV under two separate scenarios. First, that standardised packaging has no impact on both adult and young people smoking prevalence. The second scenario increases the impact of standardised packaging on both adult and young people smoking prevalence by a factor of 3 (compared to our base case analysis). Both scenarios are approximations to the expert ranges quoted above.
188. Under the no impact scenario, we clearly assume that the marginal impact of standardised packaging consists of no additional adult quitters and no fewer child smokers. Under the scenario where we scale up the impact by a factor of 3, we estimate that standardised packaging will result in around 550,000 adult quitters and around 20,000 fewer child smokers. These compare to our base model which estimates that standardised packaging will result in around 183,300 additional adult quitters and 6,600 fewer child smokers.
189. Under the no impact scenario, nearly all costs and benefits would reduce to 0. The costs that remain would be the loss of brand value, the losses to the exchequer due to downtrading, and the potential losses to packaging companies due to redundant machinery. We also include the estimated costs arising from the transfer of 2% of the UK duty paid market to the cross border shopping market (around £2bn impact on tax receipts as quoted above). The benefits that remain would be the benefit of reduced transaction times and manufacturing cost savings. These remaining costs and benefits will be of very similar values to those estimates previously, and so the NPV would reduce to around -£2bn.
190. If the number of people quitting or not taking up smoking was increased by a factor of 3 (compared to our base case analysis), then all of the most sizeable costs and benefits such as the health benefit would also increase by a factor of 3. The costs and benefits that would not increase by a factor of 3 (the ones discussed in the previous paragraph) are of a different order of magnitude and hence have little relative impact on the NPV in such a scenario. Therefore, in such a situation, the NPV would increase by a factor of 3 to around £74bn. Subtracting the £2bn impact of non-UK duty paid cigarettes (as in the first scenario) the NPV is estimated around £72bn.
191. This key sensitivity analysis is augmented elsewhere in the IA with some of the less key variables. There is a scenario assuming 100% downtrading which would reduce the base NPV estimate by around £900m. A critical value approach is taken on the impact of both cross border and illicit trade which shows that, given a large proportion of the current market moving to the UK duty unpaid market, that impact may too be in the order of billions. Additionally, an initial illustration taking a 2% move from UK duty paid

to UK duty unpaid suggests this impact may be around £2 billion for cigarettes (this will be further explored in later IAs).

Specific Impact Tests

Small and Micro Business Assessment

192. This IA has considered impacts on business under each of the various sections. The section headed “Categorisation of benefits and costs” provides an outline of these potential impacts.
193. With respect to Small and Micro Businesses (SMBs), the IA considers the following four impacts:
- Retail transaction costs
 - Consumption of tobacco products
 - Consumption of other goods and services
 - Improved workplace productivity
194. Retail transaction costs are discussed in detail above in the “reduction in retail transaction costs” section. Costs to retailers in the form of increased serving time are expected to be negligible with the impact being short lived (a matter of weeks). Thereafter, retailers are expected to see a reduction in transactions times. The total savings incurred by both retailers and customers has been estimated at £69m discounted over 10 years, with over 60% of these saving expected for retailers. The expected benefit realised by SMBs will be a proportion of this estimate. Since these savings are expected to occur as a direct effect of standardised packaging, they are quantified and relevant to the Equivalent Annual Net Cost To Business (EANCB) calculation.
195. SMBs are expected to incur costs in the form of reduced profits from their tobacco sales. It is expected that the estimated fall in smoking prevalence rates will lead to a reduction in overall tobacco consumption. The potential impact on SMBs may arise two-fold: first, from the overall reduction in the quantity of cigarette and HRT sales and, second, the downtrading from more profitable higher priced brands to less profitable lower priced brands.
196. Whilst SMBs are expected to face reduced profits from a reduction in their tobacco sales, it is expected that consumers will reallocate their income expenditure to other goods and services in the economy. Since SMBs are a component of the economy, losses from reduced tobacco sales may be offset by consumption of their other products.
197. The above effects on SMBs regarding tobacco and non-tobacco sales are partially quantified in this IA. These impacts are regarded as indirect effects of standardised packaging as they require consumers to alter their behaviour and spending patterns. They are, therefore, out of scope of the EANCB and OITO calculations.
198. This IA highlights the productivity gains due to the expected decrease in smoking. This was estimated at around £820m over the lifetime of the adult quitters. As employers, SMBs are expected to gain a share of this benefit. Since these gains can be classed as indirect effects of standardised packaging, they are not considered in the EANCB calculations.
199. We have attempted to contextualise the impacts of standardised packaging on small retailers in light of other challenges retailers face in the sub-section headed “Small Retailers”. Responses to the first consultation suggested that tobacco may account for up to 30% of the revenue of a convenience store although, anecdotally, the profit margins on the sale of tobacco may be relatively low. Small retailers such as CTNs, in order to thrive in this changing world (eg internet sales, economic cycles, big supermarket competition and demographic changes) already need to be planning their future business strategies, considering diversifying, and thinking about how to cope with all the trends and shocks that are likely to affect them.

200. Further consultation responses may yield potential measures to help mitigate any costs to SMBs and additional evidence to consider for all impacts mentioned here.

Equality Test

201. In a recent survey there were no significant differences by ethnicity or education level when rating standardised tobacco and branded packs in terms of appeal.⁹⁷ There are not expected to be any differences in how appealing a standardised tobacco pack is to different socio-demographic groups. If branded packaging is one means by which smoking is propagated in lower socioeconomic groups, standardised packaging should have a favourable impact on smoking-related health inequalities.
202. Whilst both females and males find standardised tobacco packs less appealing, females are particularly negative about standardised tobacco packaging. Gallopel-Morvan et al. (2011) found women more likely than men to rate standardised tobacco packs as “repulsive”.⁹⁸ However, Bansal-Travers et al. (2011) could find no significant differences by gender of respondent (n=397).

Competition Test

203. Standardised tobacco packaging will limit competition through limiting product differentiation. However, it is also expected to increase price competition, which may result in process innovation as companies improve the efficiency of the production process. Standardised tobacco packaging may result in product innovation as tobacco companies invent new ways of differentiating their products. The policy may also encourage innovation in the wider market for nicotine products that would not be subject to standardised packaging, such as e-cigarettes.

Sustainability Test

204. It is not thought that a change to standardised packaging of tobacco will change the sustainability of tobacco packaging from the current situation.

Environmental test

205. It is not thought that a change to standardised packaging of tobacco will change the environmental impact of tobacco packaging. Should there be a change, then it is likely to be due to a reduction in tobacco consumption, a fall in the number of tobacco products and therefore in the packaging produced and discarded.

⁹⁷ Bansal-Travers M, Hammond D, Smith P, Cummings KM (2011). The impact of cigarette pack design, descriptors and warning labels on risk perceptions. *American Journal of Preventive Medicine*, 40: 674-682 in Moodie C, Stead M, Bauld L, McNeill A, Angus K, Hinds K, Kwan I, Thomas J, Hastings G (2012). Plain tobacco packaging: a systematic review. Stirling: University of Stirling.

⁹⁸ Gallopel-Morvan K, Moodie C, Hammond D, Eker F, Beguinot E, Martinet Y (2011). Consumer understanding of cigarette emission labelling. *European Journal of Public Health*, 21: 373-375 in Moodie C, Stead M, Bauld L, McNeill A, Angus K, Hinds K, Kwan I, Thomas J, Hastings G (2012). Plain tobacco packaging: a systematic review. Stirling: University of Stirling.

Annex A: Technical

206. This Annex describes the method and data sources behind the estimation of:

- (a) The discounted number of life years saved for each young person who does not take up smoking.
- (b) The discounted number of life years saved for a randomly chosen adult who quits smoking today. This figure is lower, as some harm may already have been done by past smoking.
- (c) The discounted amount of lost duty and VAT for each young person who does not take up smoking and for each adult who quits.

Estimating and monetising the health benefits associated with reduced take-up among children and increased quit rates among adults

207. To convert the above figures into a monetary value, a standard value of £60,000 per life year is applied. Both estimates take account of the fact that many smokers quit during their lifetime, thus reducing the expected number of life years lost from starting to smoke in the first place, and reducing the expected number of life years gained by quitting today.

208. DH assigns a value of £60,000 to a Quality Adjusted Life Year. Where Quality Adjusted Life Year estimates are not readily available, and it is appropriate this value is used for Life Years. This is consistent with similar valuation of policies that mitigate mortality or morbidity risk by other Government departments, based upon studies of what members of the public are on average willing to spend to reduce their own mortality risk, or to improve their own health outcomes

209. The following main sources of data are used:

- (a) Opinions and Lifestyle Survey (OLS, 2012) source data used to identify the age distribution of smokers and the relationship between age and the percentage of smokers who have quit.
- (b) Doll, Peto, Boreham and Sutherland (2004), 'Mortality in relation to smoking: 50 years' observations on male British doctors' (*BMJ* 2004;328;1519) reports the impact of smoking on mortality, split by age of quitting smoking (if applicable).
- (c) Office for National Statistics (ONS) period life tables, United Kingdom, 2010-12, report population mortality estimates used to transform the outputs of the doctors' study into life years saved.
- (d) Integrated Household Survey (IHS 2012) for the smoking prevalence rates for individuals aged 18 and above.

210. The steps common to both estimates are listed below:

- **Identify an estimate of the percentage of smokers who have quit by each year of age.** We use data from OLS (2012) which reports the numbers of those who have never smoked (never smokers), current smokers and ex-smokers, by single year of age. We use this cross-sectional data to provide an estimate of the rate of quitting over time in a cohort of young people, some of whom become smokers and some of whom remain never smokers. Over time, quitting behaviour results in a decline in the proportion of current smokers among those who have ever smoked (ever smokers). This percentage declines at a fairly steady and constant rate as age increases. A linear relationship was estimated between age and the current smokers share of ever smokers; the results imply that 15% of "ever-smokers" have already quit by age 16, with 1.1% of ever smokers quitting in each year thereafter up to age 98. This is broadly consistent with a quit rate among current smokers of 2.5% per annum, a figure used in the literature as the background rate of quitting. We can therefore obtain an estimate of the proportion of smokers who have quit at each age. This is important as mortality amongst ex-smokers depends on the age at which they quit.
- **Identify mortality data (by year of age) for non-smokers and for four categories of smoker (as defined by quit age).** Mortality data are taken from Doll, Peto, Boreham and Sutherland (2004, Table 5),

which lists number of deaths per 1,000 people at ages 34-44, 45-54, 55-64, 65-74 and 75-84. (These are referred to below as the five age bands). This information is presented at each age band for lifelong non-smokers, as well as

- those who have quit between age 35-44,
 - those who have quit between age 45-54,
 - those who have quit between age 55-64, and
 - those who continue to smoke beyond age 65
- These categories of smoker are used throughout the calculations, and are referred to as quit age bands (alongside an “age under 35” band). The data are converted into relative risks by dividing the number of deaths per 1,000 in each of these four categories by the equivalent number of deaths (i.e. the number of deaths in the same age band) for the lifelong non-smokers. The following formulae are then applied, which calculate mortality rates at each year of age (from 0 to 100) for smokers and non-smokers respectively.
 - Smokers’ mortality at age $x = M * (r / (pr + 1 - p))$
 - Non-smokers’ mortality at age $x = M * (1 / (pr + 1 - p))$
 - Where M is the mortality estimate from the ONS life tables for age x , r is the relative risk at age x , and p is the prevalence (expressed as a proportion) at age x .
 - The above formulae are calculated for each year of age, for each sex and for each of the four age categories of smoker, as the relative risks differ between quit age categories and population mortality differs between the sexes.
 - **Identify the number of life years lost (by year of age) for each combination of sex and the four categories of smoker.** For each combination of quit age band and sex, two life tables are calculated following the method of Chiang (1984). One of the two life tables starts with the smokers’ mortality figures and the other starts with the non-smokers’ mortality figures (both for each year of age, and as calculated above). Each life table models a birth cohort of 100,000 children; one column in particular measures the total number of life years lived by the cohort for each year of age. For each year of age, the difference in this column between the two life tables is calculated and divided by 100,000 to convert the value into the expected number of life years lost per capita (for that age). The sum of these values across all years of age (from 0 to 100) equals the number of life years lost by the specified combination of quit age band and sex. For example, the comparison of life tables for men and the quit age band 35-44 provides an estimate of the survival experience over the lifetime between men who take up smoking at a young age but quit between the ages of 35 and 44, compared with their counterparts who are lifelong non-smokers.
 - **Discount the numbers of life years lost, as calculated in the previous step.** As the life years lost occur in future years of the cohort’s life, they should be discounted appropriately. The discount rates used are equal to Green Book rates minus 2%. The ‘minus 2%’ takes account of the fact that the monetary value per life-year (which is applied later on) can be expected to grow at the same rate as real economic growth. The 2% figure for this is taken from the Social Rate of Time Preference assumptions underlying the Green Book discount rates. In the short to medium term, life years are discounted at 1.5% per annum (3.5% less 2%) but this declines for survival gains occurring more than 30 years into the future. The sum of the discounted numbers of life years lost at each year of age equals the discounted number of life years lost by the specified combination of quit age band and sex.

211. The end results of these calculations are presented in Table A1. The identified relationship between age and the percentage of ever smokers who currently smoke is used to calculate the percentages in the second column. The third column shows that the penalty of smoking in terms of reduced survival increases the longer the history of smoking. For those who quit before the age of 35, life expectancy is the same as for those who have never smoked (relative risk of one), as the Doll et al. (2004) study does not report results for ages of quitting below 35 years. Neither does it report results for ages of quitting above 64 years nor for chronological age above 84 years; in the former case, mortality is assumed to be the same as for continuing smokers. For individuals with chronological age of 85 years and above, the mortality risk among smokers is assumed to be equal to that of non-smokers, that is, the relative risk is one.

Table A1: Age distribution of quitting and change in life years by age band

Quit age band	Percentage of smokers in this band	Change in life years lived (discounted), male	Change in life years lived (discounted), female
Under 35	35.0%	0.00	0.00
35 to 44	10.7%	-0.78	-0.64
45 to 54	10.7%	-2.61	-2.28
55 to 64	10.7%	-3.33	-2.96
65 or Over	32.98%	-4.40	-4.08

212. **The benefit (in discounted life-years) for each young person who does not take up smoking is estimated as follows:**

- (a) For male smokers aged under 35, the number of life years gained by quitting in each future age category is multiplied by the proportion of smokers quitting in that age group. The sum of these weighted survival gains is taken as our estimate of the number of life-years gained for young males.
- (b) A similar weighted average is calculated for young females.
- (c) The resulting male and female estimates are then downscaled to 65% and 61% of their calculated value respectively. This reflects the fact that the median doctor from the doctors' study smoked 18 cigarettes per day, whereas current averages for men and women are lower: 11.7 and 10.9, respectively (OLS 2012). Current smokers can therefore be expected to experience less harm. The adjusted life years across all age groups are shown in Table A2.

Table A2: change in life years (adjusted) by quit age band

Quit age band	Change in life years lived (discounted) male	Change in life years lived (discounted) female
Under 35	0.00	0.00
35 to 44	-0.51	-0.39
45 to 54	-1.69	-1.38
55 to 64	-2.16	-1.79
65 or Over	-2.86	-2.47

- (d) A simple average of the resulting downscaled estimates is taken as the life years gained for young men and women combined and this average is then monetised with a value of £60,000 per life year.

213. **Therefore: Benefit for each child who does not take up smoking:**

- (a) Males: 1.41 life years, i.e. £84,411
- (b) Females: 1.19 life years, i.e. £71,509
- (c) Average: 1.30 life years, i.e. £77,960 (1.30 * £60,000)

214. **The benefit (in discounted life-years) for a randomly chosen adult who quits smoking is estimated as follows:**

- (a) The aforementioned five age bands for adult smokers are also used here: those aged (i) under 35, (ii) 35-44, (iii) 45-54, (iv) 55-64, and (v) over 65. The percentage of smokers that quit in each quit age band is then considered, *given that the smoker has already reached one of age categories (i) to (v) above*. For example, 10.7% of smokers quit in the 55-64 age band, whereas 32.9% go on to become lifetime smokers. For an individual who is already aged 55 to 64, it must be that $(10.7\% / (10.7\% + 32.9\%)) = 25\%$ will quit in the 55 to 64 age band, whereas the remaining 75% continue to smoke over the age of 65.

- (b) For each category of smoker age, the percentage of smokers who quit in each age band of quitting (as calculated above) is multiplied by the life year gain associated with quitting in each age band. For each band of smoker's current age, the life years gained are shown by the (negative of) the figures in the table above, adjusted for the difference in smoking intensity between current smokers and those in the doctors' study. As we move towards the older age bands, fewer and fewer age bands of quitting enter into the calculation (as it is not possible, say, for smokers to quit smoking at 35-44 if they are already aged 45-54). This calculation gives the expected number of life years gained given that the smoker may quit at some point in the future. The calculated values for the older age groups are larger, as they are more likely to become lifelong smokers.
- (c) For each age band, Table A2 indicates the number of life years that would be lost anyway if the smoker were to quit at their current age (compared with lifelong abstinence). This number is higher for the older age groups, as more harm has already been done. For each age band, these values are subtracted from the numbers calculated in the previous bullet. This gives the number of life-years that could be reclaimed if the smoker were to stop smoking at their current age. The results for males are presented in Table A3.

Table A3: life years which could be reclaimed by smokers quitting (males)

Quit age band	Smoker age				
	Under 35	35 to 44	45 to 54	55 to 64	Over 65
Under 35	0.00				
35 to 44	-0.05	-0.08			
45 to 54	-0.18	-0.28	-0.33		
55 to 64	-0.23	-0.36	-0.43	-0.53	
65 or over	-0.94	-1.45	-1.73	-2.16	-2.86
Expected change in no. of life years lived given future quit probabilities	-1.41	-2.17	-2.49	-2.69	-2.86
Expected change if smoker were to quit at this age	0.00	-0.51	-1.69	-2.16	-2.86
Life years saved if smoker quits at this age	1.41	1.66	0.80	0.52	0.00
% of smokers in each age category	38.70%	20.13%	18.04%	12.06%	11.07%

- (d) OLS (2012) data on the age distribution of smokers is used to weight the number of life years that could be saved in each age band. This yields a final estimate of the number of life years that could be saved if a random smoker were to quit today.

215. Therefore: Benefit for each adult who decides to quit smoking:

- (a) Males: 1.09 life years, i.e. £65,131
 (b) Females: 0.95 life years, i.e. £56,866
 (c) Average: 1.02 life years, i.e. £60,998 (1.09 * £60,000)

216. The following factors may bias the central estimate of benefit presented above downwards (factors a-e) or upwards (factor f):

- (a) They do not take account of the improved quality of life that results from quitting smoking. For example, quitters may escape diseases that reduce their quality of life as well as reduce their life expectancy (such as chronic obstructive pulmonary disease).
- (b) It is assumed that no harm is incurred by smoking over the age of 84. There is likely to be some harm here (which would increase the measured benefits if counted), but there is a lack of precise data. In any case, as the cohort is fairly small by this age, the results are not particularly sensitive to this assumption. Even assuming that the relative risk for those aged 84 also holds for those who are aged 84 and over, the discounted 'child who does not start smoking' benefits increase by less than 5%.
- (c) It is assumed that no harm is incurred by smoking under the age of 35. Again, there is likely to be a benefit from not smoking at this age, but there is a lack of precise data.

- (d) It is assumed that quitting after the age of 65 yields no health benefit. There is also likely to be a small benefit here, but again, there is a lack of precise data.
- (e) The estimates do not take account of the fact that the resulting reduced smoking prevalence would reduce demand for stop-smoking goods and services. The economic resources saved could be used for other purposes
- (f) The Doll, Peto, Boreham and Sutherland (2004) study does not explicitly adjust for confounding factors (although it does control for social class, given that its sample consists only of doctors). For example, if smokers are also more likely to drink heavily, this may exaggerate the mortality impact of smoking. However, a similar cohort study (based in The Netherlands) does adjust for a long list of confounding factors, including socioeconomic status, alcohol use and body mass index. The authors conclude that adjusting for confounding factors reduces the estimated number of (undiscounted) life years lost due to smoking by half a year. This is a fairly small effect given that the estimated life expectancy loss to smokers (including the adjustment for potential confounders) is still equal to seven years. Given that the estimates presented in this annex are discounted and take account of future quit propensities, any reduction to take account of confounding factors would be considerably less than half a life year.

217. Other limitations of the estimate include:

- (a) It is assumed that the same smoking mortality impacts hold for both men and women. The Doll, Peto, Boreham and Sutherland (2004) study only covers male doctors.
- (b) It is assumed that the average daily number of cigarettes smoked throughout life is linearly related to the number of life years lost. The relationship is unlikely to be perfectly linear in practice.

Lost tax revenues

218. Using price data supplied by a cigarette manufacturer we estimate the amount of specific tax and ad valorem duty is charged per 20-pack of cigarettes in each market segment based on 2014 tax rates. The segments defined are premium, mid-price, economy and ultra-low price (ULP). This is shown in Table A4.

Table A4. Price and tax assumptions

	Projected Information to 2014			
	Premium	Mid-price	Economy	ULP
Price	8.46	7.75	7.51	6.97
Ad valorem duty	1.40	1.28	1.24	1.15
Specific duty	3.68	3.68	3.68	3.68
Total duty	5.08	4.96	4.92	4.83

- 219. At each smoker's age the expected discounted tax revenue to be paid for one year is estimated using the smokers' life table, current average number of cigarettes smoked per day estimate, the tax data shown in Table A4, and a discount rate of 3.5%. Summing these estimates across the age bands defined earlier in this annex and weighting by the probability of smokers quitting in each age band, the expected amount of tax to be paid by smokers in each age band is estimated.
- 220. To estimate the tax loss, first the expected revenue calculated in the paragraph above is summed for each age band. Second, the amount of tax smokers would already have paid given their quit age is subtracted to leave the amount of expected tax loss. These expected tax losses per age band are finally weighted by the proportion of smokers that currently fit in each band (taken from OLS 2012 data).
- 221. This estimate is calculated for each market segment. The results can be seen in Table A5. An average duty lost is calculated by weighting each market segment's lifetime lost duty by their market share (provided by a cigarette manufacturer).

Table A5. Discounted lifetime lost duty per adult quitter and per child who does not take up smoking for each market

	Premium	Mid-price	Economy	ULP+Others
Discounted lifetime lost duty per adult quitter £	4,227	4,130	4,097	4,022

	Premium	Mid-price	Economy	ULP+Others
Discounted lifetime lost duty per child who does not take up £	11,680	11,411	11,320	11,114

222. VAT is added on at the end by estimating the difference between expected VAT lost from reduced tobacco consumption and VAT gained from the expenditure on other goods and services. We assume the average VAT rate in the economy to be 13.2% compared to 20% for tobacco. In total we assume that £12,200 in duty and VAT is lost per young person who does not take up smoking and £4,400 per adult quitter. These are discounted values over the course of each person's lifetime.
223. Inherent in these assumptions is that the tax losses per adult quitter or each child who does not take up smoking can be illustrated from cigarette tax rates and that hand rolled tobacco smokers (which make up a sizable minority of the market) have similar tax losses. This assumption may be explored further in later versions of this IA

Annex B: Elicitation of Subjective Judgments of the Impact on Smoking of Plain Packaging Policies for Tobacco Products

Overall aim

224. Pechey et al. (2013)⁸⁵ elicited experts' judgments regarding the likely impact of the introduction of a standardised packaging policy for tobacco products on (i) the number of smokers and/or (ii) the number of children trying smoking.

Key research questions

225. What do experts judge to be the likely impact of the introduction of a standardised packaging policy on: (i) the number of smokers and (ii) the number of children trying smoking?
226. What reasons do experts give for their judgements?

Background

227. The Australian Government has introduced legislation requiring all tobacco products to be sold in standardised packaging, and the UK Government has consulted on the possible introduction of such a policy. A key difficulty in evaluating this policy, however, is the lack of quantifiable evidence on the likely impact of standardised packaging, given that Australia is the first country to introduce this measure (and that only in December 2012). One approach to address this limitation is to elicit subjective judgments on the likely impact of standardised packaging from a range of experts in this area.
228. Elicitation of experts' judgments allows us to construct a probability distribution that represents each expert's knowledge and uncertainty regarding the issue in question. Following this elicitation process, these individual distributions can be aggregated to a distribution that encapsulates the beliefs of a group of experts. While this process must be undertaken carefully given that human judgements can fall prey to certain biases (e.g., availability, representativeness and/or anchoring heuristics), steps can be taken to overcome these during elicitation. Indeed, elicited experts' judgments have previously been used in a range of areas, including quantifying the risk of volcanic eruptions, the value of ambulatory treatments for major depression and the chances of survival following gastric surgery.

Method

229. In keeping with established methods for this procedure, experts were recruited and briefed so that they knew why judgements were needed and understood the procedure for their elicitation. The elicitation process involves obtaining summaries for experts' distributions and fitting probability distribution for these values. These steps are described below.

Sample and recruitment

230. The sample consisted of three groups of internationally-renowned experts on tobacco control policies, one group recruited from each of Australasia, the UK and North America. 15 experts from each region were invited to participate. 33 of these accepted (14 in the UK, 12 in Australasia and seven in North America), numbers found to be sufficient in previous studies. Experts met Hora and Von Winterfeldt's (1997)⁹⁹ first four requirements for participation, that is: (a) tangible evidence of expertise (as evidenced by publications), (b) reputation (as indicated by peer-nomination), (c) availability and willingness to participate, and (d) understanding of the general problem area (in addition to being a requirement for recruitment, participants were provided with papers on the topic area to ensure sufficient knowledge). The final two requirements suggested by Hora and Von Winterfeldt (impartiality and lack of an economic or personal stake in potential findings) are considered impractical in this area, and so instead a description of the participants' employment and expertise was included for transparency.

⁹⁹ Hora S C, Von Winterfeldt D (1997). Nuclear waste and future societies: a look into the deep future. *Technological Forecasting and Social Change* 56(2):155-170.

231. Experts were identified from countries of interest using editorial lists for relevant publications (Addiction; Tobacco Control, and Nicotine Tobacco Research), the membership list of the Society for Research on Nicotine and Tobacco and consultation with key experts in this area. A third party, employed by a private company, wrote to potential participants, informing them of the study aim and requirements. Informed consent for participation in a one-off telephone interview was obtained at this stage.

Procedure

Email prior to interview

232. Following recruitment, times were arranged by the third party for each participant to be interviewed. Approximately one week prior to the interview, participants were provided via email with the Moodie et al. (2012) review on the possible impact of plain packaging. The importance of reading this information, and of giving some thought to likely impact, was emphasised.

Interview

233. Semi-structured interviews were used to elicit subjective judgments for the impact of standardised packaging on the prevalence of smoking and the percentage of children trying smoking. Interviews took place by telephone and were recorded. The researcher asked the interviewee to identify him/herself in terms of the region where he/she worked (UK, Australasia, North America), so that this categorisation would be on the recording/transcript. Participants were asked not to provide any details that could allow them to be identified, and the time and date of the data collection were not recorded. Participants were asked to estimate the expected value, and the lowest and highest likely values, measures that have been used previously in similar studies.

Judgement elicitation

234. An outline of the areas covered in the interview script is as follows:

1. Checking whether participants had engaged with materials sent and if necessary briefly reviewing the current evidence available.
2. Reiterating the definition of the exact quantities to elicit: best guess estimate and highest and lowest of possible values for the percentage of (a) smokers and (b) children trying smoking two years after the introduction of plain packaging in their country of residence (or Canada for US experts/Australia for NZ experts).
 - a. Emphasising the comparison of the policy against a 'do nothing' approach, all other things being equal:
 - i. other controls regarding the sale of tobacco would still be in force;
 - ii. the price would be stable.
3. The elicitation order itself (the order of questions on all smokers and children, and elicitation of highest or lowest possible outcomes) would be counterbalanced:
 - a. a neutral script to start with outlining the possibility of positive, no or negative impact.
 - b. For all smokers and for children trying smoking:
 - i. ask for estimate of best guess;
 - ii. ask for the highest and lowest estimates of prevalence, such that the expert would be extremely surprised if the actual value fell outside this range: 'extremely' is defined as a 1% chance.
 - iii. Use of subsidiary questions to explore range.
 - iv. Confirm that the expert is happy with the final result.
 - v. Ask for reasons for estimates.

Analysis

235. Elicited judgments were linearly pooled to estimate the most likely value(s) and range for the impact of plain packaging on each outcome. Impact, measured as percentage change, was plotted against the number of experts judging such a change as possible. Comparisons between the judgments made by different groups of experts were made using forest plots to distinguish within-person uncertainty from between-subject variability, and highlight any differences by experts' region. Degree of consensus was

judged using standard methods for assessing heterogeneity used in meta-analysis, such as the I^2 statistic.

236. Content analysis was conducted on the reasons provided for the estimates. Responses were compared between different groups of experts to assess for any systematic differences.

Results

237. The overall median estimate for the absolute change in the prevalence of adults smoking two years after the introduction of standardised packaging was -1% (between-expert range -3% to 0%). Median estimates for the lowest and highest values were -2.25% and 0%. The overall median estimate for the absolute change in the percentage of children trying smoking two years after the introduction of plain packaging was -3% (between-expert range -7.1% to -0.4%). Median estimates for lowest and highest values were -6.1% and 0%. No respondent expressed a positive best estimate of the effect of standardised packaging (an increase in smoking). For 26 of 31 experts, the best estimate for the absolute effect on children was significantly larger than that for adults. Reasons stated for a larger impact on children were that younger people would be more affected by less appealing packs, less brand identification and changes in social norms around smoking. No experts thought that the most likely outcome would be an increase in smoking rates for either adults or children. There was therefore a strong consensus that standardised packaging would reduce consumption, other factors remaining constant.

Annex C: Consultation questions

238. The consultation stage impact assessment accompanied the consultation document *Consultation on standardised packaging of tobacco products*. To further develop the consultation stage impact assessment, additional evidence was sought on a number of questions specifically related to the evidence contained within the impact assessment.

Consultation questions

- i. Which option do you favour?
 - Do nothing about tobacco packaging (i.e., maintain the *status quo* for tobacco packaging)
 - Require standardised packaging of tobacco products
 - A different option for tobacco packaging to improve public health
- ii. If standardised tobacco packaging were to be introduced, would you agree with the approach set out on page [5-6] of the consultation?
- iii. Do you believe that standardised tobacco packaging would contribute to improving public health over and above existing tobacco control measures, by one or more of the following:
 - discouraging young people from taking up smoking?
 - encouraging people to give up smoking?
 - discouraging people who have quit or are trying to quit smoking from relapsing? and/or
 - reducing people's exposure to smoke from tobacco products?
- iv. Do you believe that standardised packaging of tobacco products has the potential to:
 - Reduce the appeal of tobacco products to consumers?
 - Increase the effectiveness of health warnings on the packaging of tobacco products?
 - Reduce the ability of tobacco packaging to mislead consumers about the harmful effects of smoking?
 - Affect the tobacco-related attitudes, beliefs, intentions and behaviours of children and young people?
- v. Do you believe that requiring standardised tobacco packaging would have trade or competition implications?
- vi. Do you believe that requiring standardised tobacco packaging would have legal implications?
- vii. Do you believe that requiring standardised tobacco packaging would have costs or benefits for manufacturers, including tobacco and packaging manufacturers?
- viii. Do you believe that requiring standardised tobacco packaging would have costs or benefits for retailers?

- ix. Do you believe that requiring standardised tobacco packaging would increase the supply of, or demand for, illicit tobacco/non-duty paid tobacco in the United Kingdom?
- x. Those travelling from abroad may bring tobacco bought in another country back into the United Kingdom for their own consumption, subject to UK customs regulations. This is known as “cross-border shopping”. Do you believe that requiring standardised tobacco packaging would have an impact on cross-border shopping?
- xi. Do you believe that requiring standardised tobacco packaging would have any other unintended consequences?
- xii. Do you believe that requiring standardised tobacco packaging should apply to cigarettes only, or to cigarettes and hand rolling tobacco?
- xiii. Do you believe that requiring standardised packaging would contribute to reducing health inequalities and/or help the Department of Health and Devolved Administrations fulfil their duties under the Equality Act 2010?
- xiv. Please provide any comments you have on the consultation stage impact assessment. Also, please see the specific impact assessment questions at Appendix B of this consultation document and provide further information and evidence to answer these questions if you can.
- xv. Please include any further comments on tobacco packaging that you wish to bring to our attention. We also welcome any further evidence about tobacco packaging that you believe to be helpful.

Specific impact assessment questions (as at Annex B of the consultation document)

To better understand the likely costs and benefits if standardised packaging were introduced, and to develop the consultation stage impact assessment, further evidence was sought on the following questions:

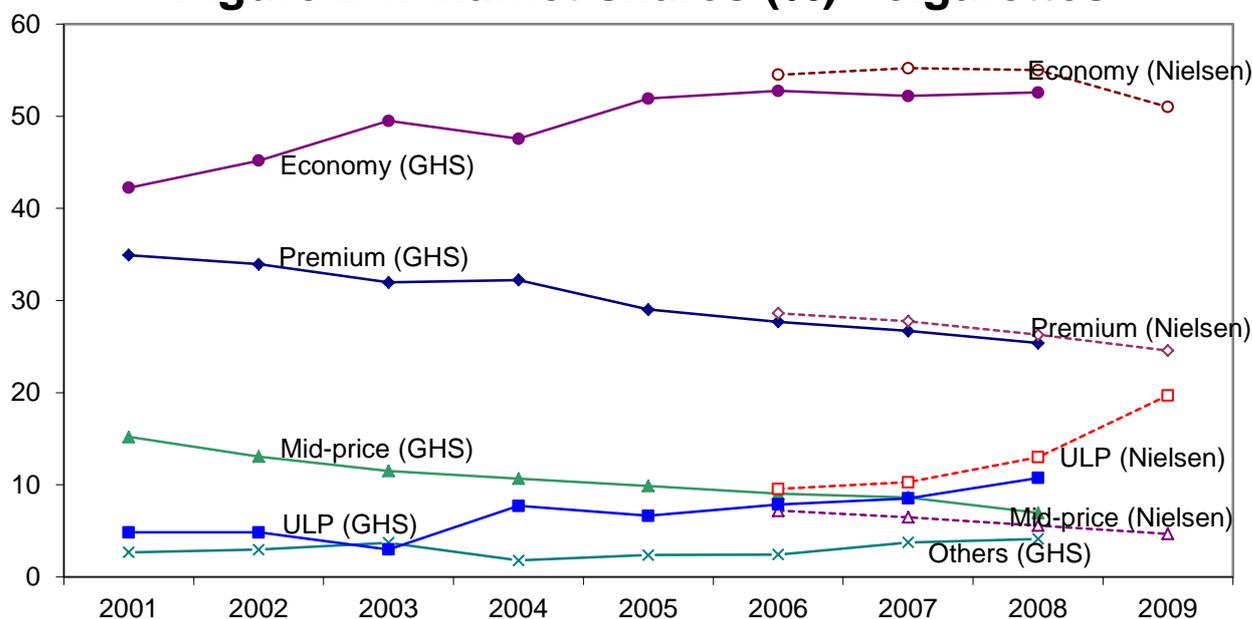
- i. What would be the costs to tobacco and packaging manufacturers of re-designing packs and re-tooling printing processes if standardised packaging were introduced?
- ii. Would the cost of manufacturing cigarette packs be less if standardised packaging were introduced, compared with the current cost of manufacturing packs?
- iii. How often do cigarette manufacturers amend the design of tobacco packaging for brands on the United Kingdom market, and what are the costs of doing so?
- iv. How many different types of shape of cigarette pack are currently on the United Kingdom market?
- v. Would retailing service times be affected, and if so why and by how much, if standardised packaging were introduced?
- vi. How could standardised packs be designed to minimise costs for retailers?
- vii. Would retailers bear any other costs if standardised tobacco packaging were introduced?
- viii. What is the average price of a packet of cigarettes in the following segments?
 - Premium cigarette brands
 - Mid price cigarette brands
 - Economy cigarette brands
 - Ultra low price cigarette brands
- ix. What percentage of total cigarette sales in the United Kingdom are in each of the following segments?

- Premium cigarette brands
 - Mid price cigarette brands
 - Economy cigarette brands
 - Ultra low price cigarette brands
- x. How does the total price of a packet of cigarettes break down into manufacturing costs, distribution costs, tax, other costs, profits for retailers and profits for the tobacco manufacturer in the following segments?
- Premium cigarette brands
 - Mid price cigarette brands
 - Economy cigarette brands
 - Ultra low price cigarette brands
- xi. Would there be an impact on down trading from higher priced to lower priced tobacco if standardised tobacco packaging were introduced?
- xii. Of the total cigarette market in the UK, what proportion of cigarettes are sold in cartons rather than in individual packs?

Annex D: Trends in the Tobacco Market

239. From IAs prepared in relation to other tobacco control policies, we have estimates of the health gain and impact on tobacco duty per quitter/young person who no longer takes up smoking. In the particular case of standardised packaging, we anticipate some more subtle effects related not to the overall level of tobacco consumption but to potential shifts within the overall market. We expect the impacts of standardised tobacco packaging to manifest themselves over an extended time period. To understand the possible impact of standardised packaging, it is useful to review the trends we have observed in the market in the recent past. These form the basis for considering the costs and benefits associated with downtrading effects resulting from standardised packaging.
240. The cigarette market is typically divided into a number of segments by price. As different manufacturers will offer different ranges of products, prices will also vary by manufacturer. In this IA, we use information provided by a tobacco manufacturer post-consultation for appropriate market segmentation and prices of those segments (prices are adjusted using Producer Price Inflation and 2014/15 duty rates).
241. Research by Tavakoly et al. (2012)¹⁰⁰ shows that a noteworthy development in the cigarette market over the last decade has been a fall in the market share of expensive premium cigarette brands and an increase in the market share of cheaper economy and ultra low price (ULP) brands. Figure D1 shows estimates of market share based on analysis of General Household Survey (GHS) data and Nielsen data since 2006 (shown as the dotted lines) for four market segments (premium, mid-price, economy and ultra low price).
242. As the shares of premium and mid-priced cigarette brands have declined, so the shares of economy brands and ultra low price or 'value' cigarette brands have increased. The ultra low price/value category emerged around 2006 when the major tobacco companies began acquiring cheaper existing brands and launching new ones and has become an established part of the market.

Figure D1: Market shares (%) - cigarettes



Source: Tavakoly et al. (2012)

243. We consider past trends in the erosion of the market share of premium brands and mid-price brands combined and the corresponding increase in the market share of economy and ULP brands combined.

¹⁰⁰ Tavakoly B, Taylor G, Reed H, Gilmore A (2012). Section 2. A report on tobacco industry pricing, product substitution and downtrading in the British tobacco market: implications for tobacco control and tobacco tax policies. In PPACTE consortium. PPACTE work package 5: Deliverable 5.1. Industry and market response: synthesis report. Bath: University of Bath.

The share of the former fell from 50.1% to 29.3% between 2001 and 2009. The rate of decline of this market share is taken as the trend rate of downtrading (table D1) and is applied to the market segmentation provided by the tobacco manufacturer. Although the manufacturer's market segments are not the same as those in Tavakoly, they are broadly consistent. The 6.5% downtrading value varies year by year between around 1% and 10% and therefore is a broad, evidence based assumption that can be appropriately applied to a different (but similar) market segmentation. The uncertainty in this value is addressed by considering the 100% switching scenario in the IA.

Table D1: Erosion of premium brands (UK)

Year	Premium/mid-price share	Rate of downtrading p.a.
2001	50.1%	
2009	29.3%	6.5%

Sources: Information Centre; Tavakoly et al. (2012); DH calculations.

244. The impact of standardised packaging is assessed relative to a baseline in which the historical trend of switching between premium/mid-price and economy/ULP packs continues and the overall number of packs smoked falls from 2012 due to the impact of the display ban and from 2016 due to the EU Tobacco Products Directive. Our central estimate for downtrading under standardised packaging is a doubling of the existing downtrading trend. Thus, in the base case, we assume that the historical downtrading trend will continue and that standardised packaging will add as much again to that trend. This is equivalent to a reduction of around 39m premium and mid-price packs relative to trend in the first year of standardised packaging. We have explored the impact of an immediate 100% switch from premium to value brands in sensitivity analysis.

Supply and demand

245. The observed trends in the market for cigarettes have come about as a result of the interaction of the forces of demand and supply in the tobacco market. To the extent that standardised packaging can be expected to influence this interaction, it could be argued that the result will be a fall in prices and an increase in consumption.¹⁰¹ We express caution in proposing a simple linkage between a fall in price and an increase in consumption brought about by standardised packaging,¹⁰² while a separate wide ranging review of standardised packaging presents a rather more complex picture of the market dynamics. Europe Economics have suggested that, in the short- to medium-term, prices might fall as price differentials can no longer be maintained for premium products but, in the long term, prices might be higher partly as a result of reduced competition. The view that prices will fall makes no allowance for the way in which tobacco taxes may change in the future.
246. We may note that the observed trend of downtrading to cheaper cigarettes and HRT will have brought about lower average prices than would have been observed without downtrading. At the same time, downtrading has been accompanied by a continued decline in smoking prevalence. On this view of the market, changes in demand conditions have resulted in changes in price, rather than vice versa. Nevertheless, there are supply side factors associated with standardised packaging (e.g. lower cost production processes, a possible increase in the supply of illicit product) which could reduce prices for individual brands and lead to increased consumption. Where there are factors which might threaten the effectiveness of standardised packaging as a tobacco control measure, we treat these as risks. Varying tobacco taxes could be explored as a means of offsetting any observed reduction in prices and maintaining (at least) the current affordability of tobacco.

Competition and innovation

247. It has been suggested that standardised tobacco packaging would represent a further restriction on tobacco companies' ability to compete by way of product differentiation as consumers' loyalty to

¹⁰¹ Padilla J (2010). The impact of plain packaging of cigarettes in Australia: a simulation exercise. Brussels: LECG Consulting Belgium.

¹⁰² Reed H (2011). Analysis and review of J. Padilla "The impact of plain packaging of cigarettes in the UK: a simulation exercise". Colchester: Landman Economics.

previously branded products is undermined. The JTI response to consultation argues, based on commissioned analysis, that standardised packaging would increase barriers to entry for new brands. Firstly, it should be noted that the cigarette market in the UK is highly concentrated¹⁰³ and is likely to remain so irrespective of the regulatory environment. Cigarette manufacture is not characterised by entry of small manufacturers. Secondly, brands themselves can represent an important barrier to entry in the cigarette (and other) markets. Thirdly, standardised packs would not prevent the communication of product characteristics to consumers. It would not restrict communication by means of the brand name appearing on the price list (which might include some indicator of taste or origin). Standardised packaging could result in an acceleration of non-pack product innovation (inventing other ways of differentiating a product from competitors) and process innovation (improving the efficiency of the production process) if greater price competition threatens profits. Fourthly, any negative impact on consumers of reduced brand competition could be offset by an increase in price competition which the JTI analysis predicts would intensify as a result of standardised packaging (but the complexities in pricing discussed above should be noted here).

248. The ways in which tobacco manufacturers would respond to the introduction of standardised packaging may serve to offset some of the negative impacts identified here (and possibly reduce the health benefits as well if the industry attracts or retains smokers). For example, product and process innovation may enable companies to recover some of the brand equity lost with standardised packs. The extent to which companies could differentiate their products will depend on the provisions set out in legislation, should the decision be made to introduce standardised packaging. It is not for DH to imagine what tobacco companies might do in response to standardised packaging but it is an industry that has a reputation for finding alternative ways to market and promote its products as promotional channels are closed down through legislation.

¹⁰³ Gilmore A B, Branston J R, Swenor D (2010). The case for OFSMOKE: how tobacco price regulation is needed to protect the health of markets, government revenue and the public. *Tobacco Control* 19:423-430.

Annex E: Tobacco Products Directive

249. The revised Tobacco Products Directive governing the manufacture, presentation and sale of tobacco and related products was officially adopted by the Council on 14 March 2014 following its formal approval by the European Parliament on 26 February 2014.

Requirements

250. Requirements of the TPD include mandatory picture and text health warnings covering 65% of the front and the back of cigarette packs - to be placed on the top edge. 50% of the sides of packs will also be covered with health warnings (e.g. "smoking kills – quit now"; "tobacco smoke contains over 70 substances known to cause cancer"), replacing the current printing of tar, nicotine and carbon monoxide (TNCO) levels.
251. There will be minimum dimensions for the health warnings and slim, 'lipstick'-style cigarette packs, which are often targeted to young women, will no longer be allowed.
252. In order to ensure the visibility of health warnings, cigarette packs will be required to have a cuboid shape and each pack will contain a minimum of 20 cigarettes.
253. No promotional or misleading features or elements will be allowed on packs. This includes, for example, references to lifestyle benefits, to taste or flavourings or their absence (e.g. "free of additives"), special offers or suggestions that a particular product is less harmful than another.
254. Similar rules will apply to roll-your-own tobacco (RYO) packs, which will also have to carry 65% combined health warnings on the front and back as well as the additional text warnings. RYO products can have a cuboid or cylindrical shape, or be in the form of a pouch, and each pack will contain a minimum of 30g of tobacco.
255. Flavourings in cigarettes and RYO tobacco must not be used in quantities that give the product a distinguishable ('characterising') flavour other than tobacco. The Directive prohibits cigarettes and RYO tobacco with any such characterising flavour. Member States and the Commission may consult an independent European advisory panel before taking decisions in this regard. Menthol is considered a characterising flavour and will be banned after a phase-out period of four years – a period which applies to all products with more than a 3% market share in the EU.

Illicit trade

256. The new Directive includes measures against illicit trade of tobacco products to ensure that only products complying with the Directive are sold in the EU. It introduces an EU-wide tracking and tracing system for the legal supply chain and visible and invisible security features (e.g. holograms) aimed to facilitate law enforcement and help authorities and consumers detect illicit products. The measures foreseen in the new Directive will help to redirect tobacco trade to legal channels, and may also help Member States restore lost revenue. Tracking and tracing of tobacco products will be phased in, with cigarettes and RYO the first required to comply, followed by all other tobacco products.

TPD impact on consumption

257. The TPD impact assessment estimates a reduction in consumption of around 2% within a five year period after transposition. The TPD IA breaks up this reduction as follows:

Policy area		Foreseen contribution to the decrease in %
Scope	(STP)	0.2-0.3
	NCP	
	(Herbal)	
Packaging & Labelling		1-1.5
Ingredients		0.5-0.8
TOTAL		1.7-2.6%
Cross-border distance sales + Illicit trade		Additional decrease of consumption, however not in the legal supply chain. (Decreases in illicit consumption could mitigate the decrease in the legal chain).

Standardised packaging

258. We use the mid-point of the estimated reduction above to assume a 2.15% reduction in tobacco consumption due to the TPD.

259. We anticipate some overlap between the measures proposed under standardised packaging and by the TPD due to the “Packaging & Labelling” aspect of the TPD. This is because some aspects of TPD, such as cigarettes packs having to have a cuboid shape, or “lipstick”-style packs no longer being allowed, would also be covered by standardised packaging legislation (as set out in the consultation). We take the mid-point of the estimated reduction in consumption caused by packaging and labelling above, that is 1.25%, and assume that all of this reduction is due to aspects that would have been covered by standardised packaging legislation (as set out in the consultation). We note that attributing the full 1.25% as overlap is likely to be conservative (i.e. decrease the NPV estimates in this IA) since at least some of the packaging and labelling aspects of TPD, such as the requirement for more and larger health warnings, were not covered by the standardised packaging legislation (as set out in the consultation).¹⁰⁴

¹⁰⁴ During consultation we will seek further information on the methodology employed in the TPD IA. This will help gauge whether their estimate is conservative or not.

ANNEX F: Consumer surplus: rationale for approach

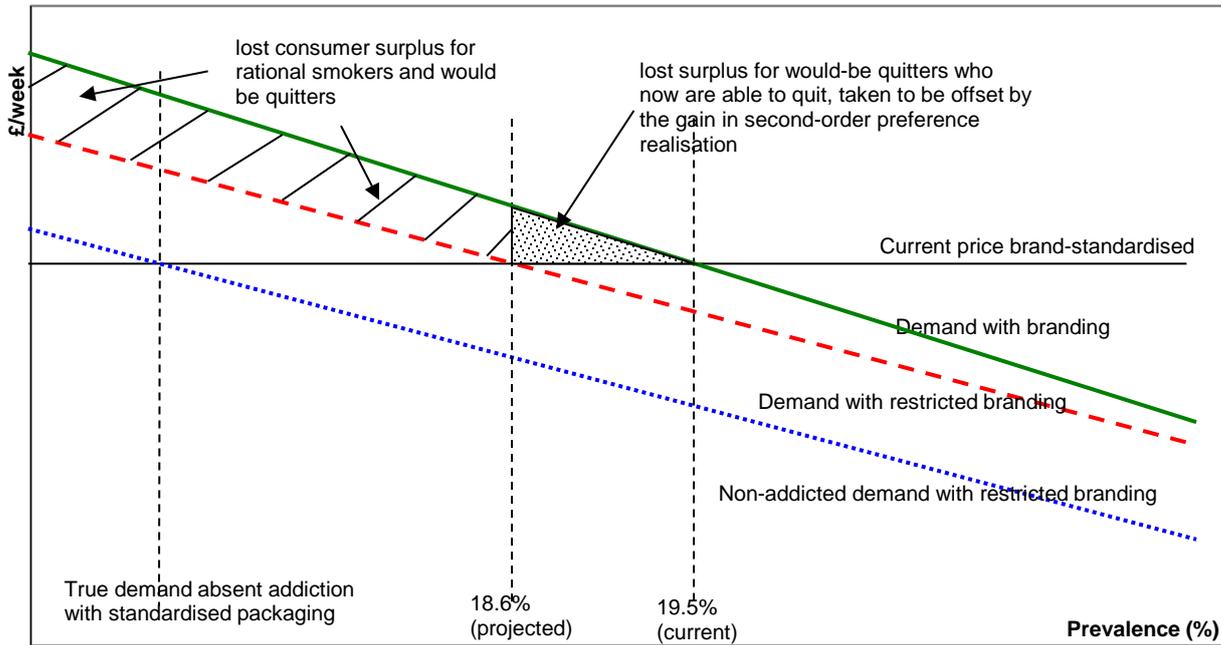
260. Standardised packaging is designed to undermine brand appeal which creates an attractive self-image for the smoker. Brand appeal is thought to be something that people are willing to pay for when they purchase cigarettes – and probably a larger proportion of what they are willing to pay for premium brands. Restricting packaging does not eliminate the market for premium brands. However, there is an aspect of brand superiority that is destroyed, and what is lost for consumers needs to be considered when deciding whether to take this regulatory step. Estimating the extent of this loss is very hazardous. Demand elasticity estimates are not relevant because it is precisely the inframarginal consumers – those who would have continued to buy the brand even were it much more expensive – whose loss will be the greatest.
261. We acknowledge a consumer surplus loss to those who do not give up as a consequence of the packaging change. These smokers suffer from frustrated preferences – they wished to express something through their brand loyalty that is now being denied them. This loss in welfare is captured by the “consumer surplus” concept. We must assess whether this loss is justified by offsetting gains, including those health and welfare gains for those who themselves express a wish to give up.
262. However, for those who do not give up, even those who would still like to quit, the loss of branding is a loss in freedom. Of the projected 9m smokers in the UK, post plain packaging, around 2m (those who mainly smoke filter cigarettes in the premium or mid-price segments) might be considered to fall into this category.
263. Against this, there are other arguments for discounting the value attached to a branded as opposed to a standardised pack. For example, as a result of branding, premium cigarettes may become a “positional good”, particularly for young people. Because consumption of positional goods by one consumer creates a negative consumption externality (Frank, 2008)¹⁰⁵ for others, standardised packaging could increase consumer surplus among the majority of smokers. Interviews with youth smokers in Norway suggest that smokers can feel embarrassed about their own brand of cigarettes compared with those smoked by others and that some brands may even engender feelings of hostility in others (Scheffels, 2008).¹⁰⁶ Branding might therefore be seen as a zero sum game. Standardised packaging could reduce the social signalling element of cigarette smoking, while young smokers have ready substitutes to replace the lost signalling such as mobile phones, clothing etc. without the costs of addiction.
264. For adult smokers, it has been argued that cravings are triggered by environmental cues, with packaging ranking highly amongst these cues. To the extent that standardised packaging eliminates a strong cue, consumer welfare can be increased. Demand by a cued individual can be regarded as a pure transfer from consumers to producers and therefore as generating an overall welfare loss equal to the marginal cost of production. The optimal regulatory response will be to rely on policies which lessen the role of environmental cues (of which evidence suggests branding is an important one) for addictive goods. As well as helping to address the ‘internality’ individuals impose upon themselves, if standardized packaging was successful as a tobacco control measure, it would give intergenerational benefits as future young people would be less likely to smoke.
265. Notwithstanding the shortcomings of conventional consumer theory in dealing with addictive substances, attempts have been made to address the issue of consumer surplus within this framework. For example, Weimer et al. (2009) propose demand schedules in the presence and absence of addiction. Figure 4 provides an illustration, together with a demand schedule in the presence of addiction but with the removal of branding. The area between the addicted demand curves with and without branding indicates where potential consumer surplus losses would have been if these consumers had not “changed their minds” about their demand. The steeper downward slope of the demand curve with branding (the top line) reflects higher consumer surplus being attributed to those willing to pay more for cigarettes – perhaps those who are willing to pay for branding.
266. While this is a useful conceptual approach, it is insufficiently developed to provide a quantified estimate of the loss of consumer surplus as a result of standardised packaging, both because of the role of

¹⁰⁵ Frank R (2008). Consumption externalities. *The New Palgrave Dictionary of Economics*.

¹⁰⁶ Scheffels J (2008). A difference that makes a difference: young adult smokers’ accounts of cigarette brands and package design. *Tobacco Control* 17:118-122.

branding in addiction and a lack of evidence on the value of brands to non-addicted smokers. In common with the approach adopted for interventions targeted at reducing the consumption of alcohol, in which the issue of addiction is also relevant, we do not attempt to provide a monetary estimate of consumer surplus loss.

Figure F1: Consumer surplus from branding



ANNEX G: Critical Value Approach

267. Rather than providing a central estimate of the impact of standardised packaging on the UK duty unpaid segment of the market (ie the illicit and CBS market), we have undertaken a critical value analysis which explores the increase in the share of this market required to yield a zero NPV of the policy. We model two possible sources of increase in the UK duty unpaid market:

- Those who continue to smoke under standardised packaging divert to the UK duty unpaid market
- Those who would otherwise quit smoking divert to the UK duty unpaid market

268. On the basis of an equal percentage offset in those who would otherwise have quit and in those who switch from smoking UK duty paid to UK duty unpaid cigarettes, we estimate the percentage which gives a zero net benefit and the resulting increase in the share of the UK duty unpaid segment of the market.

269. The starting point for the calculation is the size of the UK duty paid market after our anticipated reduction in prevalence due to standardised packaging. We then estimate the size of the UK duty unpaid segment assuming a baseline 12% share (drawing on the most recent tax gaps added to the estimated cross border shopping figures reported by HMRC).

270. We transfer a given percentage of the remaining UK duty paid market (after changes in prevalence have been factored in) to the UK duty unpaid market, and transfer the same percentage of quitters to the UK duty unpaid market (the 'benefits offset' scenario). This gives a new figure for the share of the UK duty unpaid market.

271. After the initial period over which standardised packaging is expected to bring about a reduction in prevalence, the UK duty unpaid market is maintained at this share, with the duty UK paid segment being lower by our given percentage reduction than it is otherwise expected to be.

272. The split between high and low price brands in the UK duty paid segment, for a given assumption about the downtrading trend, is determined by the split found when applying the same downtrading assumption without a shift to the UK duty unpaid market.

273. We compare this scenario with the no standardised packaging case, in which downtrading continues according to trend, in two stages.

274. Firstly, we compare the trend downtrading and no "offset" scenario with the trend downtrading and 'benefits offset' scenario to get an estimate of offsetting .

275. Secondly, we compare the trend downtrading and 'benefits offset' scenario with a double the trend downtrading and 'benefits offset' to get an estimate of the increased downtrading due to standardised packaging once offsetting is taken into account.

276. We use a two stage approach because a shift from the UK duty paid to the UK duty unpaid market results in a loss of the entire duty formerly paid whereas shifting between market segments within the UK duty paid segment results in the loss of the additional duty on a high price as opposed to a low price packet. The overall impact of the offset scenario is the combined effect of the two comparisons.

277. To produce a net benefit of zero, 20% of the UK duty paid market would need to transfer to the UK duty unpaid market, giving a UK duty unpaid market share of 30%. The risk of smokers switching from HRT UK duty paid to HRT UK duty unpaid is not quantified here but may be in future versions of this IA.