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9 August 2012

Tobacco Packs Consultation
Department of Health
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Philip Morris Limited welcomes this opportunity to respond to the Department of Health's Consultation on standardised packaging of tobacco products. While our submission does not respond to each of the Consultation questions individually, information responsive to those questions can be found in the following sections:

The Department of Health ("DH") cannot establish the evidence to support plain packaging. The DH has stated that it requires "*strong and convincing evidence showing the health benefits of*" plain packaging, principally that plain packaging would "*improve public health by reducing the use of tobacco*" and in particular "*deter young people from starting to smoke.*" The DH itself has repeatedly stated that no such evidence exists, and the DH-commissioned Stirling Review in fact proves this point. With no support in the studies, the DH creates a biased and unprincipled "subjective judgment elicitation" process whereby plain packaging advocates (who the DH admits have personal and financial interest in the outcome) will provide opinions (not data) on the impact of plain packaging on smoking prevalence. This process flies in the face of Better Regulation Principles and this Government's commitment to meet "tougher tests of evidence and evaluation." This discussion can be found in Section II of our submission, and responds to questions 2, 3, 4, 11, and 14.

Plain packaging will not reduce and is likely to increase the number of young people who start smoking. Experts agree and experience shows that social factors such as peer and familial influences cause young people to start smoking, not branding and packaging. Further denormalisation of smoking through plain packaging may in fact cause more young people to start smoking as an act of rebellion, as the DH warned in 2008. At the same time, price sensitive young people may take advantage of reduced prices as plain packaging commoditises the tobacco market and forces the industry to compete on price alone. This discussion can be found in Section III of our submission, and responds to question 3, 4, 5, 7, and 11.

Plain packaging will not make it easier to quit smoking. Experts and even tobacco control advocates now agree that plain packaging will not help existing smokers quit. Quite simply, there is no link between branding and quitting. This discussion can be found in Section IV of our submission, and responds to questions 3 and 4.

Plain packaging will increase the levels of illicit tobacco in the UK, open the floodgates to "illicit whites," and make cheap unregulated tobacco easily accessible to children. Law enforcement experts warn that plain packaging will cause an increase in the illicit tobacco trade, making cheap illicit products sold without age verification even more accessible. Organised crime and terrorist groups will exploit their monopoly on branded products whilst simultaneously taking advantage of the new, easy to counterfeit plain packs to expand their illicit product portfolios. Already overburdened and under-resourced UK law enforcement will not be able to keep pace with the exploding illicit tobacco trade, which will deprive the UK of ever more tax



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revenue and harm legitimate businesses in this time of financial crisis. This discussion can be found in Section V of our submission, and responds to questions 2, 3, 4, 5, 7, 8, 9, 10, 11, and 13.

Plain packaging will cost UK taxpayers billions of pounds. Plain packaging violates national and international law. In particular, as confirmed by Lord Hoffmann in his legal opinion, it amounts to the expropriation of the tobacco industry's valuable intellectual property rights and will require the UK government to pay tobacco companies billions of pounds of compensation. UK taxpayers will have to foot this bill. This discussion can be found in Section VI of our submission, and responds to questions 5, 6, 7, and 11.


Education and tobacco access controls, not plain packaging, will reduce youth smoking. Experience shows, and the Institute of Education's researchers agree, that measures which limit access to tobacco, especially in social situations as well as at retail, are effective ways to reduce youth smoking. Countries that have been successful in this area also rely on educational programs designed to empower young people to make informed decisions, not draconian packaging regulations. This discussion can be found in Section VII of our submission, and responds to questions 3, 4, and 15.

For the above reasons, in response to Consultation question 1, the DH should reject plain packaging, should *"maintain the status quo for tobacco packaging,"* and should focus its resources on proven effective alternatives.

I have enclosed 4 copies of our submission for your reference. I have also emailed this to:

 gsi.gov.uk

Yours sincerely,





Director of Corporate Affairs UK & Ireland
Philip Morris Limited

9 AUGUST 2012

Standardised tobacco packaging will harm public health and cost UK taxpayers billions:

A response to the Department of Health consultation on standardised packaging of tobacco products



PHILIP MORRIS LIMITED

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I. INTRODUCTION

The standardised or plain packaging measure explored in this Consultation is not evidence-based and will not be effective. In fact, the evidence shows that plain packaging will harm public health and have other serious debilitating consequences.

As a premium brand tobacco company, we oppose plain packaging because it will impair free competition, transform the industry into a low price commodity business, and encourage the illicit trade to the detriment of the legal supply chain. As described in this submission:

The Department of Health (the "DH") cannot establish the evidence to support plain packaging. The DH has stated that it requires "*strong and convincing evidence showing the health benefits*" of plain packaging, principally that plain packaging would "*improve public health by reducing the use of tobacco*" and in particular "*deter young people from starting to smoke*."³ The DH itself has repeatedly stated that no such evidence exists, and the DH-commissioned Stirling Review of the evidence for plain packaging in fact proves this point. With no support in the studies, the DH creates a biased and unprincipled "subjective judgment elicitation" process whereby plain packaging advocates (who the DH admits have personal and financial interests in the outcome) will provide opinions (not data) on the impact of plain packaging on smoking prevalence. This process flies in the face of Better Regulation Principles and this government's commitment to meet "*tougher tests of evidence and evaluation*."⁴

Plain packaging will not reduce and is likely to increase the number of young people who start smoking. Experts agree and experience shows that social factors such as peer and familial influences cause young people to start smoking, not branding and packaging. As the DH warned in 2008, further denormalisation of smoking through plain packaging may in fact cause more young people to start smoking as an act of rebellion. At the same time, price sensitive young people may take advantage of cheaper tobacco as plain packaging commoditises the tobacco market and forces the industry to compete on price alone.

Plain packaging will not make it easier to quit smoking. Experts and even tobacco control advocates now agree that plain packaging will not help existing smokers quit. Quite simply, there is no link between branding and quitting.

Plain packaging will increase the levels of illicit tobacco in the UK, open the floodgates to "illicit whites," and make cheap unregulated tobacco easily accessible to children. Law enforcement experts warn that plain packaging will cause an increase in the illicit tobacco trade, making cheap illicit products sold without age verification even more accessible. Organised crime and terrorist groups will exploit their monopoly on branded products whilst simultaneously taking advantage of the new, easy to counterfeit plain packs to expand their illicit product portfolios. Already overburdened and under-resourced UK law enforcement officers will not be able to keep pace with the exploding illicit tobacco trade, which will deprive the UK of ever more tax revenue and harm legitimate businesses in this time of financial crisis.

Plain packaging will cost UK taxpayers billions of pounds. Plain packaging violates national and international law. In particular, and as confirmed by Lord Hoffmann in his attached legal opinion, it amounts to the expropriation of the tobacco industry's valuable intellectual property rights and will require the UK government to pay tobacco companies billions of pounds of compensation. UK taxpayers will have to foot this bill.

Education and tobacco access controls, not plain packaging, will reduce youth smoking. Experience shows, and the Institute of Education's researchers agree, that measures which limit access to tobacco, especially in social situations as well as at retail, are effective ways to reduce youth smoking. Countries that have been successful in this area also rely on educational programmes designed to empower young people to make informed decisions, not draconian packaging regulations.

For the above reasons, the DH should "*maintain the status quo for tobacco packaging*" and should focus its resources on the proven effective alternatives.

II. THE EVIDENCE FOR PLAIN PACKAGING DOES NOT MEET THE STANDARDS SET BY THE DEPARTMENT OF HEALTH

The objective of plain packaging, according to the very first paragraph of the Consultation Document, is "to improve public health by reducing the use of tobacco."⁶ The Impact Assessment spells this out even more specifically:

*"The objective of standardised tobacco packaging would be to deter young people from starting to smoke and to support adult smokers who want to quit (and prevent relapse among those who have quit), ultimately reducing the overall consumption of tobacco products."*⁶

The DH is also quite clear that plain packaging is an extraordinary measure that will "limit competition" and impact the intellectual property rights of UK businesses and therefore requires that it "be justified and be based on expected benefits **over and above** existing tobacco control measures."⁷ However, not just any health benefit will do, "the impact on smoking behaviour and the consequent improvement in health need to be sufficiently large to justify the related costs."⁸

Accordingly, current and previous governments have assured the public that before imposing plain packaging, they would require "strong and convincing evidence" that it will reduce smoking.

As the then Secretary of State for Health, Andy Burnham, wrote in 2009:

*"Given the impact that plain packaging would have on intellectual property rights, we would need **strong and convincing evidence** showing the health benefits of this policy before it would be acceptable at an international level."*⁹

The DH's pledge to determine whether the evidence in fact supports plain packaging is consistent with the DH's sharp criticism of health policies based on "patchy" evidence as expressed in its 2010 White Paper, 'Healthy Lives, Healthy People: Our strategy for public health in England'. There, the DH condemned the "patchy use of evidence about 'what works'" and correctly noted that, when health policies are based on poor and unsound evidence, the UK's resources are not "used most effec-

tively."¹⁰ The DH also argued that evidence must prove that policies are "linked to clear health outcomes" and urged "a culture of using the evidence to prioritise what we do ... ensuring that new approaches are rigorously evaluated."¹¹

We will show that:

- the DH itself has repeatedly found that the evidence base is insufficient (see section II.A., below);
- the DH-commissioned Stirling Review further exposes the fundamental weakness of the evidence base (see section II.B., below);
- the "subjective judgment elicitation" process initiated by the DH, which defies all common sense, is a further confirmation that the existing evidence is insufficient (see section II.C., below); and
- an assessment of the causes of youth smoking, the real-world data on the effects of packaging and branding on youth smoking, as well as actual experiences with various forms of unbranded tobacco packaging – all of which have been ignored in the Stirling Review and the Impact Assessment – further confirm that plain packaging will not work and may even backfire (see sections III and IV, below).

A. The DH has repeatedly acknowledged that there is no evidence plain packaging will reduce youth smoking or overall consumption

The DH reviewed (and rejected) the evidence supporting plain packaging in 2008, again in 2009 (twice), again in mid-2011, and again earlier this year.

For instance, in December 2008, Alan Johnson, then Secretary of State for Health concluded:

*"there is **no evidence base** that [plain packaging] actually reduces the number of young children smoking."*¹²

In November 2009, Andy Burnham, then Secretary of State for Health wrote:

*"as yet, **no studies** have shown that introducing plain packaging of tobacco would cut the number of young people smoking or enable people who want to quit, to do so."*¹³

Again, in its own Impact Assessment, in April this year, the DH acknowledged that it still does not know what impact plain packaging will have on actual smoking behaviour:

*"The **main uncertainties** associated with the policy explored herein (**beyond the impact on smoking behaviour itself**) relate to impacts upon price and the illicit tobacco trade."¹⁴*

Indeed, this should be sufficient for the DH to conclude that its own standards of *"strong and convincing evidence"* cannot be met.

B. The Stirling Review proves that there is no evidence that plain packaging will reduce youth smoking or overall consumption

In advance of the Consultation, the DH commissioned a review of all existing literature on plain packaging which was led by researchers from the University of Stirling and the UK Centre for Tobacco Control Studies (the "Stirling Review").¹⁵ To identify relevant literature, the Stirling Review authors searched databases for papers relating to plain packaging, yielding 4,518 potentially relevant papers. The Stirling Review authors determined that only 37 of the 4,518 papers were adequate for their purposes, one-third of which were written by the Stirling Review authors or contributors to the Stirling Review protocol themselves.

The Stirling Review concludes that plain packaging will *"reduce pack and product appeal ... increase the salience of health warnings ... and ... reduce the confusion about product harm that can result from branded pack."*¹⁶ The authors suggest that these three "proposed benefits" ultimately will lead to less smoking.

However, as explained by Compass Lexecon, none of the 37 papers reviewed measured actual smoking behaviour and *"none of these answered, directly or indirectly, the question of whether plain packaging will reduce tobacco use."*¹⁷ Instead, the underlying studies are based on unreliable self-reports and speculation. Moreover, the actual data in the underlying studies is far from conclusive on the three benefits addressed by the Stirling Review. In fact, the authors of the Stirling Review themselves acknowledged the fundamental and severe limitations of the studies relied upon.

1. The Stirling Review is based on unreliable self-reports and speculation

Virtually all of the papers considered in the Stirling Review are based on participants' self-reports and on *"speculative data such as survey questionnaires or focus group responses."*¹⁸ Self-reported perceptions and speculation are not measures of actual impact or behaviour and do not provide evidence that plain packaging will reduce smoking prevalence among youth or adults. Simply put, people are bad judges of their own behaviour:

*"It may be quite misleading for social scientists to ask their subjects about the influences on their evaluations, choices or behaviour. ... such reports, as well as predictions, may have little value. ... More importantly, the evidence suggests that people's **erroneous reports** about their cognitive processes are not capricious or haphazard, but instead **are regular and systematic.**"¹⁹*

This is no different for tobacco control research. For instance, in a systematic review of the effectiveness of larger health warnings on tobacco packaging, the authors cautioned that *"[o]pinions, beliefs and affective responses" often "can be misleading by over or underestimating the true outcome. ... As such, they are an unreliable measure of actual quitting behaviour."*²⁰

In 2008, the DH characterised this same type of evidence as *"speculative, relying on asking people what they might do in a certain situation."*²¹

Even the Stirling Review authors agree:

*"findings regarding smoking-related attitudes, beliefs and behaviour from both the surveys and qualitative studies in the review are reliant upon self-report. Without any form of validation (such as validating reported changes in cigarette consumption) these have **quite weak predictive validity**. ... as such, the suggested impacts on consumption, cessation and uptake are so far **speculative.**"²²*

2. By its own admission, the Stirling Review is not strong and convincing evidence

The Stirling Review's results, by its own description, are *"mixed"* at best.²³ Indeed, the most the authors conclude with regard to the key issues is that *"there is **some evidence** from the studies in this review that*

plain packaging **may affect** smoking-related attitudes and beliefs, and smoking behaviour, particularly for young people and/or non-smokers and light smokers."²⁴

"Some evidence" that plain packaging "may affect ... smoking behaviour" is of course not "strong and convincing evidence" that plain packaging will achieve

AUSTRALIA: "NO PROOF" THAT PLAIN PACKAGING WILL REDUCE CONSUMPTION

Officials from Australia, the only country that has passed plain packaging legislation (implementation is scheduled for December 2012), admit to having no evidence of its effectiveness.

Nicola Roxon, the Health Minister at the time the policy was introduced, admitted on various occasions that there is "**no proof that plain cigarette packaging would cut smoking rates,**" that the "**sort of proof [people] are looking for doesn't exist**"²⁵ and even referred to plain packaging as an "**experiment**."²⁶

IP Australia, the government agency responsible for administering Australia's intellectual property rights system, reached a similar conclusion:

*"A Senate report in 1995 concluded that there was insufficient evidence to demonstrate the efficacy of generic packaging in achieving health policy objectives and recommended further investigation. IP Australia is **unaware of any subsequent evidence that the public interest would be better served by plain packaging.**"²⁷*

Finally, the Australian Treasury also seems to assume that plain packaging will not work: recently released budget papers indicate that, for the coming four years, the government predicts **no decline** in tobacco consumption.²⁸

the DH's objective of "**reducing the overall consumption of tobacco products,**" and thus, on its face, does not meet the DH's evidentiary standards.

The Stirling Review authors also acknowledge the profound and fundamental limitations of the underlying studies. For instance, they concede that they have relied on:

- evidence largely based on "**hypothetical scenarios, and are therefore not truly able to test how individuals would react or behave if plain packaging was to be introduced,**"

2008



*"[T]here is **no evidence base that [plain packaging] actually reduces the number of young children smoking.**"*

Alan Johnson,
Secretary of State for Health
House of Commons debate
16 December 2008

2009



*"**No studies have been undertaken to show that plain packaging of tobacco would cut smoking uptake among young people or enable those who want to quit to do so.**"*

Gillian Merron
Minister of State for Public Health
Parliamentary Bills Committee session
25 June 2009



*"[...] as yet, **no studies have shown that introducing plain packaging of tobacco would cut the number of young people smoking or enable people who want to quit to do so.**"*

Andy Burnham
Secretary of State for Health,
letter to Tessa Jowell
9 November 2009

2011



*"[T]here isn't any **hard evidence to show that it works.** Therefore I am wondering whether the Australian government drafted any type of impact assessment or cost analysis in which likely benefits and costs are measured and if so, whether you would be willing to share this information with us."*

Email of UK Department Tobacco Policy officer to Australian DOH representative dated 10 May 2011

2012



*"The **main uncertainties associated with the policy explored herein (beyond the impact on smoking behaviour itself) relate to impacts upon price and the illicit tobacco trade.**"*

Department of Health,
Impact Assessment, paragraph 45
April 2012

- results derived, for the most part, from unrepresentative samples;
- unpublished material, which *"made it more difficult to determine methodological rigour;"*
- statements of intention *"[w]ithout any form of validation (such as validating reported changes in cigarette consumption);"* and
- that the *"weak predictive validity"* of such studies leaves their results *"speculative."*³⁰

3. The actual data from many underlying studies does not support plain packaging

Even if one were to assume that self-reports of future behaviour were reliable evidence, the actual data reported in the studies considered in the Stirling Review raises numerous doubts about the claimed effects of plain packaging.

For instance, in a 2009 UK study entitled *'Cigarette pack design and perceptions of risk among UK adults and youth'*, researchers found that, with regard to *"interest in trying cigarettes,"* the majority of young people (aged 11 to 17 years old) reported **"no difference" between plain and branded packs.**³¹ The authors also reported that most smokers (adults and youth) found no differ-

ence between plain packs and branded packs on the following measures: *"delivers less tar," "lower health risk," "smoother taste,"* or *"easier to quit."*

In a study from Canada,

*"Ontario students were asked what impact they thought plain cigarette packaging would have on youth smoking. One quarter (25%) said young smokers would smoke less and 71% said it would make no difference. One third (35%) said young nonsmokers would be less likely to start and 62% said it would make no difference."*³²

In a 2008 study from Australia, the researchers maintained that the study showed that smokers found plain packs less appealing than branded packs.³³ However, a review of the actual data shows: (1) one of the three plain packs that were tested was rated by all smokers more favourably on every perception and characteristic than the branded pack; and (2) all smokers' *"intention to smoke"* or *"intention to try a brand"* was not significantly different for any of the plain packs and the branded pack.

In a 2010 New Zealand study of young adult smokers, researchers reported more interest in cessation with plain packs but added:

PREDICTIONS OF SMOKING BEHAVIOUR ARE NOTORIOUSLY UNRELIABLE

In 2007, the DH consulted on the introduction of picture health warnings on tobacco packaging - a largely uncontroversial measure that Philip Morris Limited did not oppose. On the basis of its impact assessment the government said that introducing picture warnings ***"will have the largest impact on smoking levels, will save the most lives and will save the NHS the most money."***³⁵

The DH based these predictions on survey based research of the same type as we see in the Stirling Review. In 2008, the government decided to introduce picture warnings.

In 2010, the Public Health Consortium (also responsible for the Stirling Review) conducted research to evaluate the actual impact of the picture health warnings. They found:

*"Forgoing a cigarette when about to smoke one; stubbing out a cigarette or using a variety of techniques to avoid viewing the health warnings messages are important behavioural responses to the health warnings. Among both adults and young people, the prevalence of forgoing a cigarette or stubbing a cigarette out did not change post implementation of the pictures. However, using techniques to avoid viewing the health warnings messages (such as covering up the messages or using a case or container) increased significantly post 1st October 2008."*³⁶

Conclusion: What the DH promised did not come to pass. Unfortunately, the current Impact Assessment and the Stirling Review both failed to consider the empirical data showing that self-reported predictions do not translate into actual outcomes.

*"where graphic warnings covered at least 50% of the package, or where minimal branding elements were present, respondents preferred plain packages."*³⁴

Similarly, a 2010 study to determine how plain packaging would impact adolescents' recall of health warning labels found **no difference between plain and branded packs**:

*"our study did not demonstrate that graphic health warnings of smaller or larger size were recalled more often when placed on a pack devoid of branding as compared with a branded pack."*³⁷

Remarkably, each of the above studies is counted by the Stirling Review as supportive of plain packaging - and none of the details provided here are noted.

For all of these reasons, the Stirling Review is relevant to the Consultation, but only because it proves that there is no evidence - let alone *"strong and convincing evidence"* - that plain packaging will *"reduc[e] the overall consumption of tobacco products."*³⁸

C. The DH's "subjective judgment elicitation" process is contrary to principles of Better Regulation and common sense

The "subjective judgment elicitation" process (described in paragraph 53 and Annex 2 of the Impact Assessment) is a last-ditch attempt to construct the "evidence" to support plain packaging. In short, the DH will ask long-time tobacco control advocates to give their "best guesses" on the impact of plain packaging on smoking behaviour. With this, they seek to address the admitted *"lack of quantifiable evidence on the likely impact of standardised packaging"* - the key issue in this Consultation.³⁹

Specifically, the process involves the following steps:

Step 1: A DH-funded entity recruits three panels of ten tobacco control advocates from the UK, North America, and Australasia. The panellists will come from the editorial lists of tobacco control publications, the membership of tobacco control groups, or recommendations of tobacco control advocates.

Step 2: In advance of a telephone interview, each advocate receives a *"recently commissioned review on the possible impacts of plain packaging;"* he/she is asked to read it and give *"some thought to likely impact."*⁴⁰

Step 3: A third party conducts a *"semi-structured"* telephone interview with each advocate.⁴¹ Each advocate anonymously gives his/her *"best guess estimate"* of the hypothetical impact plain packaging would have on smoking uptake, cessation and overall prevalence in his/her own country of residence or a neighbouring country.⁴² The identity of the advocates will not be disclosed to the public.

Step 4: The DH-funded entity calculates the average of the advocates' guesses and the results become the evidence base for the DH's policy decision.

The DH expressly acknowledges that the advocates who will participate cannot be impartial - either financially or personally - on the issue of tobacco or plain packaging, but dismisses this concern because:

*"impartiality and lack of economic or personal stake in potential findings are considered impractical in this area."*⁴³

It is hard to believe that any government would seriously consider basing a far-reaching policy intervention such as plain packaging on *"best guess estimate[s]"* of advocates collected in *"semi-structured"* telephone interviews. In an attempt to justify this process, the DH points to expert opinions relied on for predictions of volcanic eruptions and other risks:

*"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."*⁴⁴

In each of these examples, however, experts are asked to base their judgments on quantitative, empirical data - not on speculation and conjecture. At the same time, such protocols also assess and control for bias.

Professor Alfred Kuss, a specialist in marketing and social sciences at the University of Berlin, characterised the DH's "subjective judgment elicitation"

method as "extremely unusual in social and marketing research."⁴⁵ Indeed, as explained by Professor Kuss:

*"the proposed method - subjective judgments - is not suitable to generate valid and objective estimates, does not reach minimal standards of scientific research, and allows researchers and 'experts' to manipulate the results."*⁴⁶

It is unclear why the process excludes experts from relevant fields such as econometrics, marketing, branding, packaging and consumer behaviour, some of which have produced evidence questioning the effectiveness of plain packaging. If it is because the work of some of these experts was commissioned by tobacco companies, are there concerns about impartiality? If so, why is impartiality "impractical" only for those who support plain packaging?

To put all of this in perspective: a plain packaging advocate from the US, for instance, will be asked to speculate - anonymously, in a telephone conversation - about the hypothetical impact of a hypothetical regulatory intervention on the behaviour of people in Canada. Concerns over his or her bias are dismissed as "impractical." And these quite predictable guesses of how plain packaging would impact smoking behaviour in Canada, along with the guesswork of 29 other tobacco control advocates, are then supposed to become the evidence for plain packaging in the UK.

As one blogger put it:

*"It's like handing control of the Leveson Inquiry to an associate of Rebekah Brooks, or even Rebekah Brooks herself with James Murdoch as a fellow panel member. Or Alex Ferguson appointing four members of the Manchester United Supporters Club to be officials for an important Champions League fixture."*⁴⁷

Finally, on top of the panellists' biases, the DH is creating a fact scenario that will not simulate a real world plain packaging environment. For instance, the DH notes that the participants will be told that among the facts they must take into account is that in the plain packaging world "[t]he price would be stable."⁴⁸ This is of course contrary to the DH's own observation that falling tobacco prices are a plausible outcome of plain packaging. Also, 20 of the 30 panellists, namely those from outside the UK, will provide estimates not for what will happen in the UK, but will speculate on the

impact of plain packaging on Australian and Canadian young people and smokers.

In summary, the DH has repeatedly admitted that there is insufficient evidence that plain packaging will achieve its objective, the Stirling Review further proves this point, and the "best guess estimate[s]" of experts from "semi-structured" interviews will not fill this gap.

Furthermore, neither the DH, the Stirling Review, nor the subjective judgment elicitation process even try to assess:

- the wealth of evidence that exists on the causes of youth smoking;
- the real-world data on whether packaging and branding are linked with youth smoking; and
- actual market experiences with various forms of tobacco in unbranded packaging that show how smokers react to seemingly less appealing packaging.

As we will show in the following sections, a balanced assessment of these issues further confirms that plain packaging simply will not work and is likely to backfire, leading to adverse consequences.

III. PLAIN PACKAGING WILL NOT PREVENT YOUTH SMOKING AND MAY EVEN ENCOURAGE IT

Brands do not cause youth smoking. Other factors such as peer influence, parental smoking or rebelliousness are recognised causes, as experts have long stated and real world experience shows. Plain packaging will not reduce the number of young people who smoke. In fact, it may encourage teens to take up smoking.

A. Branding and packaging do not cause youth smoking

"They [young people] take up smoking – as most of us did in our youth – because they see role models and people whom they admire smoking."

–Alan Johnson, Secretary of State for Health⁴⁹

There is overwhelming evidence which demonstrates that brands and packaging have nothing to do with why young people begin smoking. James J. Heckman, a Nobel Prize-winning economist specialising in determining why people behave as they do, reviewed a vast amount of literature on the causes of youth smoking and concluded that:

*"The economics and public health literatures have extensively investigated the causes of smoking behavior. These literatures have identified multiple causal factors affecting youth smoking behavior, such as **prices, parental and peer smoking, early family environments and investments in children.**"⁵⁰*

"Everyone knows teenagers try smoking because of peer pressure – it's friends and the groups they mix in that leads them to start smoking, not cigarette logos. But if you take away logos and make fag packets more extreme, there is a real danger of making smoking even more attractive to impressionable young people wanting to stand up to authority and rebel."

**Peter Sheridan,
Former Assistant Chief Constable
of Northern Ireland⁵¹**

Decades of peer-reviewed publications by other experts support Dr Heckman's conclusion: young people start smoking because of social circle interactions and peer pressure, not because of brands or packaging.⁵²

Consistent with these views, a 2012 Eurobarometer report found that 77% of people in the UK said they started smoking because their friends smoked, while only 1% said packaging played any role.⁵³ Similarly, in a very recent survey of current and former smokers in the UK, 97% of those who began smoking before the age of 18 said that plain packaging would not have stopped them from taking up smoking.⁵⁴

Studies conducted for the expert panel that considered plain packaging for the Canadian government in the 1990s noted that packaging was not a factor in smoking initiation:

"It is clear that in most first trials there are little package, brand or brand promotion elements. Most kids receive their first cigarette from friends. There is no brand choice – the choice is simply to smoke or not to smoke. Therefore, in the uptake process brand and package are very minor components. This means that changing the package will not have any major effect on the decision(s) to smoke or not to smoke."⁵⁵

YOUNG PEOPLE ARE PERFECTLY WILLING TO BUY CIGARETTES SOLD IN UNBRANDED PACKAGING

Real world data shows that young people smoke regardless of branding or packaging. For example, Canadian youth favour contraband cigarettes sold in clear plastic baggies – the preferred "brand" of more than 43% of high school aged daily smokers in the province of Ontario.⁵⁶ These unbranded contraband cigarettes are so popular – accounting for the majority of Canada's illicit trade, which is more than 30% of the total tobacco market⁵⁷ – that they have caused an increase in Canada's previously declining youth smoking rates.⁵⁸



Plain packaged, cheap, illegal cigarettes

B. Plain packaging may encourage youth smoking

"Children may be encouraged to take up smoking if plain packages were introduced, as it could be seen as rebellious."

—DH, Consultation Document⁶⁰

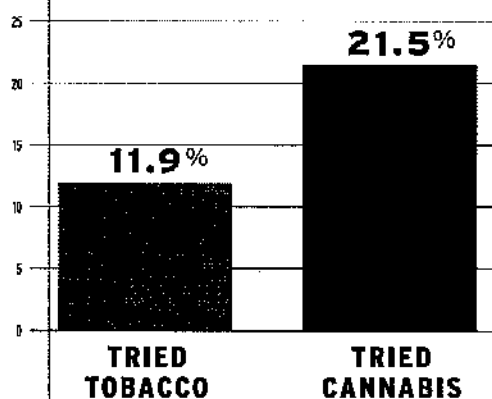
As set out above, in 2008 the DH itself cautioned that by further "denormalising" tobacco consumption, plain packaging could enhance the effect of young people feeling that they are being rebellious and engaging in a non-mainstream activity. While the DH, at that time, said it was not aware of any evidence that supported such a concern, the authors of a study commissioned by Health Canada, observed that, "[s]moking's negatively charged public image" attracts young people to it, "a fact that suggests that the widely advocated policy of denormalisation could have significant counterproductive consequences."⁶⁰

The University of London Institute of Education also cautioned that "[s]ensitive approaches are needed, as young people's attitudes towards regulation are complex, and increased regulation may serve to heighten the kudos of smoking."⁶¹

The "forbidden fruit perception," a direct effect of denormalisation, often attracts young people most.

Smoking vs. Cannabis Use

Australia 2010 – 14 to 19 year olds



Source: Australian Institute of Health and Welfare, 2010 National Drug Strategy Household Survey Report.⁶²

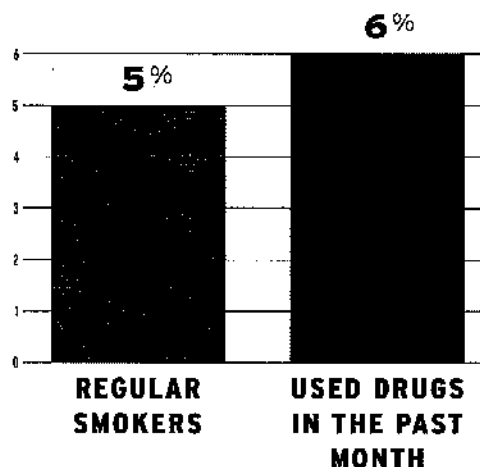
"Driving cigarettes underground would boost tobacco sales no end. Plain packaging and the black market have certainly worked wonders for cannabis."

**Rodney Hide,
The National Business Review⁶³**

This phenomenon is clearly evidenced by illegal – and unbranded – drug use by youngsters in many countries. In England, more 11 to 15 year olds used drugs in a 30 day period than were regular smokers.

Smoking vs. Drug Use

England 2011 – 11 to 15 year olds



Source: NHS, Smoking, drinking and drug use among young people in England in 2011.⁶⁴

C. Plain packaging will cause prices to drop

"Plain packaging may force tobacco companies to compete on price alone, resulting in cigarettes becoming cheaper."

"Price responsiveness is considered to be even greater among young people and more deprived groups."

—DH, 2008 Consultation Document⁶⁵

In 2008, the DH flagged price as a determining factor in tobacco consumption and noted that young people are particularly price sensitive. In its current Impact Assessment, the DH continues to recognise this significant risk presented by plain packaging:

*"The effect of standardised tobacco packaging could be further to erode the ability of tobacco companies to distinguish their brands from one another. We might expect therefore that it would **reinforce the trend towards downtrading to lower priced cigarette brands**, a process that has, for a variety of reasons, been a notable feature of the market over the past decade."*⁶⁶

The DH also recognises that the "enhancement of price competition" will "potentially risk the achievement of public health benefits," and that a possible result of standardised packaging is "lower prices and increased consumption."⁶⁷

Most public health advocates acknowledge that price is the single strongest determinant of smoking rates:

*"The single most consistent conclusion from the economic literature on the demand for cigarettes is that consumers react to price changes according to economic principles - an increase in price leads to a decrease in consumption."*⁶⁸

The effect is particularly strong among young people, who are "particularly sensitive to price and responsive to cigarette prices."⁶⁹

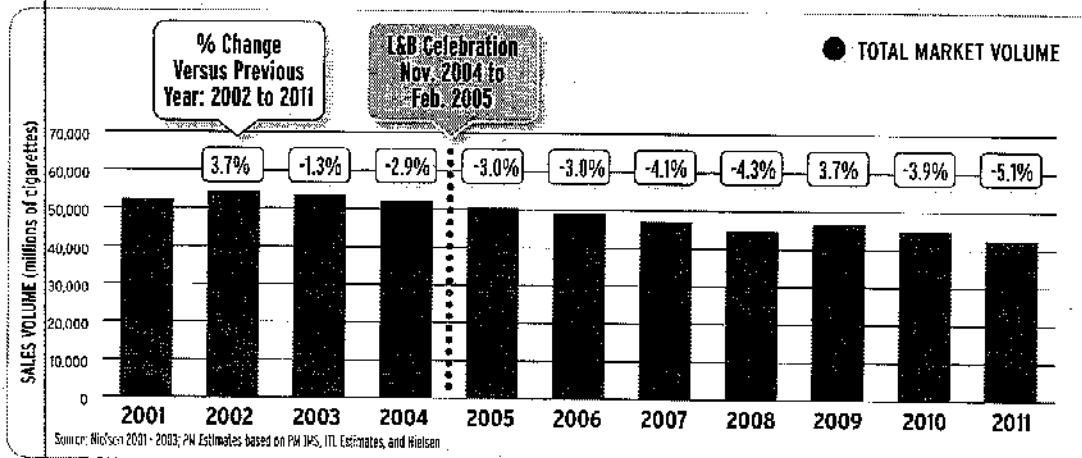
Although it cannot be demonstrated that packaging has any effect on a person's decision to smoke, high quality packaging significantly affects adult smokers' brand preferences and willingness to pay a higher price.⁷⁰ A recent study of consumer purchasing behaviours in six OECD countries observed that as UK regulations increasingly restricted tobacco brand information, consumers increasingly based their cigarette purchasing decisions on price rather than brand.⁷¹ Thus plain packaging will remove a major incentive for consumers to pay more for tobacco products and will encourage consumers to buy cheaper products.

Governments, business analysts, and other experts have consistently recognised that "greying out all packs would lead to rapid down-trading," encouraging consumers to shop based on price and reducing overall market prices for all tobacco products.⁷² Simply put, with generic packaging, competition will focus on price, and as "the price goes down, the number of smokers would go up. ... By reducing price, you stimulate consumption. It would be a boomerang effect."⁷³

Experience from other goods clearly demonstrates that generic packaging will reduce prices and increase consumption. The World Health Organization actively promotes generic pharmaceuticals, for instance, as a means to increase their affordability and availability: "[g]enerics serve the logic of the pocket" because they are "considerably less expensive than originator products, and competition among generic manufacturers reduces prices even further."⁷⁴ The European Union found the same, observing that "[g]eneric entry - especially when it is accompanied by significant price reductions - may also lead to an increase in overall consumption of the medicine."⁷⁵ Removing intellectual property protections for pharmaceuticals decreases prices and increases product availability; mandating generic packaging for cigarettes could only have the same effect. Because price is the single strongest determinant of youth and adult smoking rates, plain packaging is likely to backfire by increasing smoking prevalence.

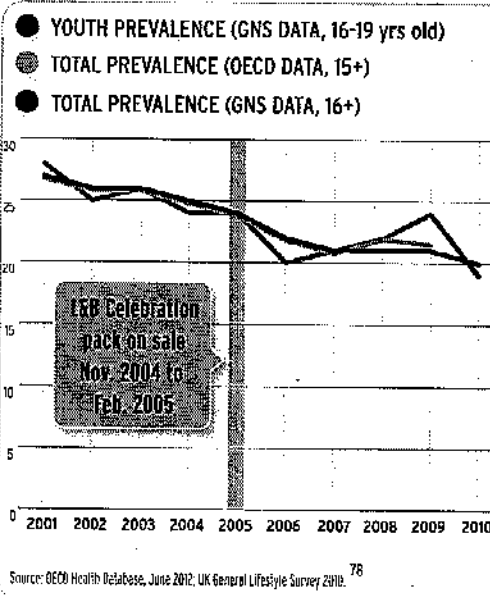
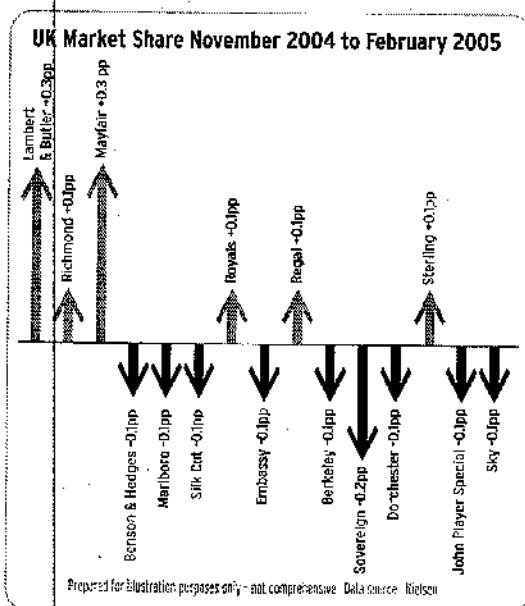
Lambert & Butler Celebration Pack

The Impact Assessment and ASH UK have pointed to the use of special edition packaging, specifically the introduction of the *Lambert & Butler Celebration* pack in November 2004, and implied that packaging can influence consumption, in particular amongst young people.⁷⁶ Although the special edition packaging may have contributed to a "£60 million increase in sales of Lambert & Butler," the data shows that total UK cigarette sales volumes continued to decline during the period that the Celebration pack was on the market and for three years after that."



The data also shows that the *Celebration* pack did not cause overall smoking prevalence or youth smoking prevalence to increase.

Indeed, smoking prevalence among 16 to 19 year olds continued its steady decline during the same period, from approximately 26% in 2003 to 20% in 2006. Following a similar pattern, both the prevalence of smokers aged 16 or older (as measured by GNS data) and the prevalence of smokers aged 15 or older (as measured by OECD data) fell from approximately 26% to 22%.



Thus, rather than reflecting an increase in youth smoking or overall consumption, the increase in *Lambert & Butler* sales reflects market competition: the brand's ability to take market share from competing brands. Plain packaging will eliminate this form of competition.

IV. PLAIN PACKAGING WILL NOT MAKE IT EASIER TO QUIT SMOKING

"We're not expecting plain packaging to have much impact on existing smokers."

—Professor Simon Chapman⁷⁹

There is a growing consensus among the proponents of plain packaging that the measure will not have much effect on current smokers. Indeed, one of the most vocal critics of the tobacco companies and a staunch supporter of plain packaging, Simon Chapman of Australia, claims that the tobacco control community does not expect plain packaging to have an "impact" on existing smokers.

Cancer Research UK shares this view, stating on its website that plain packaging *"isn't about telling people to quit, it's about stopping the next generation from starting in the first place."*⁸⁰

Similarly, the NHS and UK tobacco control groups have abandoned any mention of cessation and existing smokers when discussing the purported benefits of plain packaging:

"Plain packaging is designed to protect [children] and is not about current smokers."

—Stewart Brock, NHS Somerset Public Health Specialist⁸¹

"Plain packaging ... is not about current smokers."

—Fiona Andrews, Director Smokefree Southwest⁸²

"Plain packaging is not about stopping existing smokers."

—Andy Lloyd, Fresh (Smoker Free North East)⁸³

Also, Dr. Siriwan Pitayarangsarit, an outspoken plain packaging advocate from Thailand, recently said: *"plain packaging will not really affect those who are already addicted to smoking."*⁸⁴

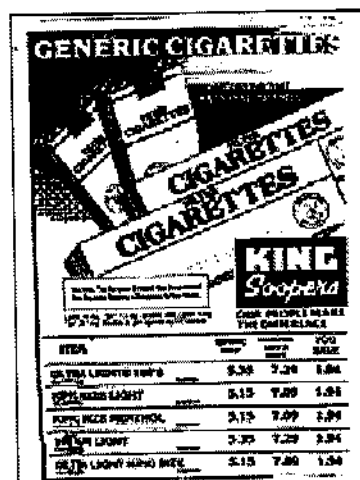
The "evidence" from the Stirling Review also fails to establish that standardising tobacco packaging will result in more smokers quitting. First, as explained above, the Stirling Review did not assess the impact of plain packaging on actual quitting behaviour. Second, of the four quantitative studies included in the Stirling

Review that looked at the *"[p]erceived impact [of plain packaging] on own smoking intentions & behaviour,"* two found no difference between plain and branded packs.⁸⁵ Third, the Stirling Review authors themselves conclude that, *"the suggested impacts [of plain packaging] on consumption, cessation and uptake are so far speculative."*⁸⁶

By contrast, the literature points to a variety of factors that may increase smokers' chances of successfully quitting, including cessation support programmes.⁸⁷ One will not find, however, in the vast literature on the topic of successful cessation, any mention of plain packaging.

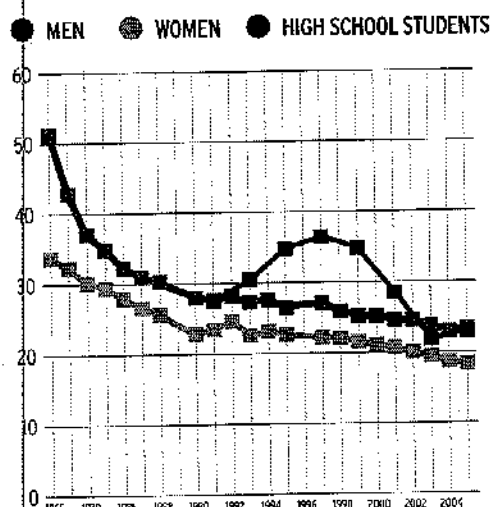
GENERIC PRODUCTS, LOWER PRICES, INCREASED SMOKING

The impact of generic tobacco products in reducing price across the tobacco sector has become part of a well-known business school case study of a time when the US saw generic, low cost cigarettes attacking premium brands and forcing the entire market to compete more aggressively on price.⁸⁸ This is exactly the moment when, after years of decline, youth smoking rose substantially.



Cheap generic cigarettes sold in the United States in the 1980s

As the average price of cigarettes fell, US adult smoking rates temporarily increased, and youth smoking rates spiked:



Following the growth of cheap generic packaged cigarettes, US youth smoking rates increased dramatically

Source: data taken from US Public Health Service, Chartbook on Trends in the Health of Americans, 2007, p. 101 available at www.cdc.gov/nchs/data/ahs/ahs07.pdf⁸⁹

In the 1980s, cigarette brands in the US were divided into high priced premium brands and lower priced discount brands. With the introduction of generic cigarettes, smokers in the US "began to switch to the heavily discounted generic brands, with market share for generics tripling after the 1983 tax increase."⁹⁰

By early 1993, the market share of Philip Morris' premium brand *Marlboro* had fallen significantly, and "the market share of discount brands had risen past 30% of all cigarette volume and was growing by almost one half of a share point per month."⁹¹

In response, on 2 April 1993 – the day that became known as "Marlboro Friday" – Philip Morris announced a 20% reduction in the retail price of *Marlboro*. Those manufacturers that had not already reduced prices followed.

Thus the growth in market share of generic cigarettes led directly to very significant price reductions across the whole market. The negative effect of this on smoking behaviour and, in particular, the increase in youth smoking is well documented.⁹²

V. PLAIN PACKAGING WILL INCREASE THE LEVEL OF ILLICIT TOBACCO IN THE UK

"Tobacco smuggling undermines efforts to reduce smoking prevalence and costs the UK taxpayer an estimated £2.2 billion per annum."

—HMRC and UK Border Agency⁹³

The Impact Assessment rightly highlights the risk of plain packaging increasing the supply of illicit tobacco products as one of the "main uncertainties." Despite UK law enforcement's considerable progress, the UK still has one of the highest levels of illicit tobacco consumption in Europe:

*"Approximately one fifth of the UK's smoking population admit to purchasing illicit tobacco. Around two-thirds of illicit tobacco buyers claim that cheaper illicit tobacco makes it possible for them to smoke when they otherwise could not afford to."*⁹⁴

In fact, nearly 11 billion units of illicit tobacco products are consumed in the UK each year, equal to more than

10% of the total UK cigarette market⁹⁵ and 46% of the hand-rolling tobacco market.⁹⁶ In total, approximately 18% of the UK tobacco market is illicit.⁹⁷ According to HMRC, illegal tobacco sales cost the UK treasury up to 3.1 billion pounds per year.⁹⁸

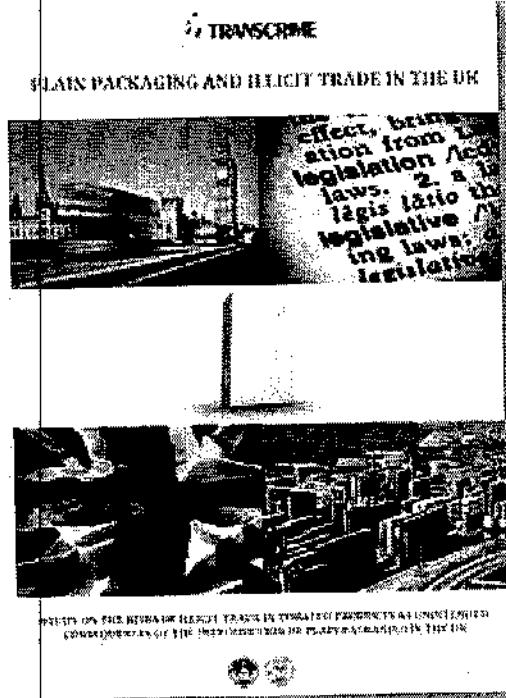
Commoditising tobacco packaging will encourage even more smokers to switch to cheaper, branded and unbranded illicit tobacco products. A well-organised illegal industry stands ready to meet that demand - and standardising all cigarette packaging will make their job even easier.

A. Plain packaging will open the floodgates to illicit whites and "make life easier for criminals"⁹⁹

"If the only branded cigarettes in the UK become illegal imports, then instead of the government's plans protecting children they will be driving them into the hands of organised crime to buy the branded product they desire."

—Roy Ramm, Former Commander of Specialist Operations at New Scotland Yard¹⁰⁰

JOINT RESEARCH CENTRE ON TRANSNATIONAL CRIME: PLAIN PACKAGING AND ILLICIT TRADE IN THE UK



The Joint Research Centre on Transnational Crime of the Università Cattolica del Sacro Cuore of Milan and the University of Trento ("Transcrime"), which regularly conducts research for the European Commission and various EU governments, has conducted the only comprehensive study assessing the effects of plain packaging on the illicit trade in the UK.

Its study concluded that:

*"plain packaging may have major impacts on the illicit trade], and particularly on the counterfeiting of tobacco products."*¹⁰¹

Transcrime identified three main ways that plain packaging may increase illicit trade:

- 1) plain packs will be easier and cheaper to counterfeit;
- 2) consumers may prefer illicit branded packs over unbranded legal products; and
- 3) tax increases in response to price competition may drive consumers to the illicit trade.

Plain Packaging and Illicit Trade in the UK: Study on the Risks of Illicit Trade in Tobacco Products as Unintended Consequences of the Introduction of Plain Packaging in the UK, May 2012

Experts from law enforcement officers to academics have concluded that plain packaging will increase demand for illicit tobacco products. For example, plain packaging will likely cause an increase in the black market for smuggled branded tobacco according to nearly 70% of current UK police officers who responded to a recent survey.¹⁰² Similar concerns were recently expressed by 24 former senior UK police officers: "plain packaging risks fuelling tobacco smuggling."¹⁰³ The Joint Research Centre on Transnational Crime has also identified an increase in the illicit trade as a risk of plain packaging in the UK.¹⁰⁴

Among the reasons cited for this increase are the greater appeal of cheaper branded illicit products, which will encourage consumers, including youth, to turn to the black market.¹⁰⁵ Organised crime groups will gladly exploit their newfound monopoly on branded products and will expand and vary their illicit product offering to match the plain packaging driven increase in demand.¹⁰⁶

One need only look at the market in illicit white cigarettes, which HMRC described in 2011 as "a growing problem," to see the likely illicit market in a plain packaging environment.¹⁰⁷ The Organised Crime Task Force for Northern Ireland explained that illicit whites are branded cigarettes made specifically for sale in the UK black market:

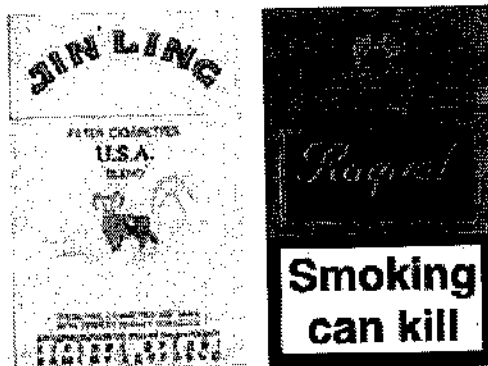
*"Illicit Whites are cigarettes produced entirely independently of the International Tobacco Manufacturers (ITMs) and effectively are brands manufactured specifically for smuggling."*¹⁰⁸

These colourful branded packs – often with no health warnings – will compete against the legitimate plain packs. No taxes are paid on illicit whites and their prices will be much lower than legal plain packs.

ILLICIT WHITES: POISED TO SATISFY THE INCREASED DEMAND FOR CHEAPER BRANDED PACKS

"Illicit whites, from a range of non EU sources, continue to increase their market share in the UK. A number of illicit white brands have now established themselves in the UK, including Raquel and Jin Ling, with new brands beginning to emerge."

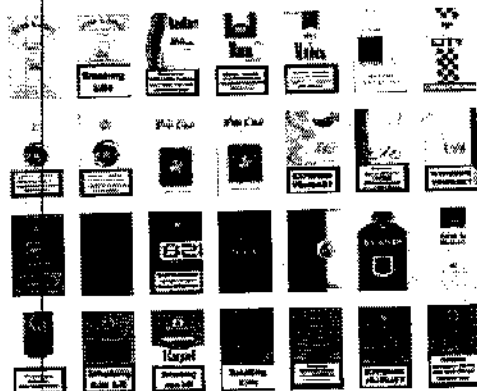
–HMRC and UK Border Agency¹⁰⁹



These illicit brands will receive a huge boost from plain packaging. More significantly, the criminal gangs that manufacture and/or distribute them will start to generate more cash and will see the UK as a principal destination market.

ILLICIT WHITES: NO SHORTAGE OF SUPPLY

An empty pack survey in Q4 2011 found **68 different illicit white brands** in the UK, 36% more than the previous year, and nearly four times the number of illicit white brands that were available in 2008.¹⁰ (Worldwide, over 450 illicit white brands have been identified to date.)¹¹



Examples of illicit white brands found in the UK at the end of 2011.

Not only will plain packaging open the floodgates to branded illicit whites, plain packs will be easier to counterfeit:

"With all tobacco products being essentially indistinguishable and counterfeiters only having to replicate one simple design, it is inevitable that counterfeiting will be easier, while being more difficult to detect."¹²

Giovanni Kessler, the Director General of OLAF, more than 85% of current UK police officers completing a recent survey, and many other experts agree that plain packaging will make counterfeiting easier and cheaper.¹³ Printers will have to prepare only one pack format that can be used to produce multiple brands at substantially lower costs by simply changing the brand name.¹⁴ Furthermore, simplified packaging will mean that more printers with less knowledge and skill can produce cheaper counterfeit packaging, lowering the barriers to entry to the illicit market.¹⁵

PACKAGING EXPERT: GRAPHIC HEALTH WARNINGS DO NOT STOP COUNTERFEITERS

PLAIN PACKS ARE EASIER TO COPY

The Impact Assessment attempts to reassure the public that there will be no increase in counterfeiting because "[s]tandardised packs would still need to carry coloured picture warnings."¹⁶

As an expert in the packaging field explains, this argument is quite simply wrong. In fact, plain packs will be easier to copy:

"Pictorial health warnings pose no real barrier to counterfeiters: they can be produced (and reproduced) using lowcost printing techniques from equipment readily available in the market and four basic print colours. As such, they are not comparable to branding in their complexity."

"A modern cigarette pack is a sophisticated product with multiple brand features that forces counterfeiters to overcome costly barriers in order to produce convincing copies. The printing techniques for the branding on the packs employ enhanced design features, such as embossing, debossing, hotfoil stamping and UV Varnish, amongst others, and typically use between eight and ten unique colours from state of the art printing equipment. Moreover, each colour comes from special ink sourced from a limited, traceable supply chain."

"It is, therefore, the branding on a cigarette pack that counterfeiters find difficult to replicate and that allows retailers and the public to differentiate between real and counterfeit products."

—Andreas Blaschke, President European Carton Makers Association¹⁷

LEGAL
£ 6.17
AVERAGE PRICE

ILLICIT
£ 3 - 4
AVERAGE PRICE

BEFORE

AFTER

Plain packaging will increase the illicit product offering

- Contraband and counterfeit packs will remain – and counterfeit plain packs will be introduced.
- Counterfeit and contraband RYO products will remain – and counterfeit RYO plain packs will be introduced.
- "Baggies" and unbranded loose tobacco are now common in many countries. The "denormalisation" of the legal market could make these an attractive alternative.

With plain packaging, counterfeiters will be able to rapidly expand their brand portfolios and produce multiple market variants inexpensively and on demand.

Plain packaging is a gift to organised crime. The resulting increase in illicit trade will reverse more than five years of declines achieved through the investment in and tireless efforts of UK law enforcement.¹¹⁸

B. The result will be more smoking, especially among young people

"[The illicit tobacco trade] undermin[es] the Government's targets for reducing smoking prevalence, especially among young people."

—DH, 2008 Consultation Document¹¹⁹

By increasing illicit tobacco, plain packaging is likely to lead to more smoking, especially among young people. For some time now, the DH has warned very clearly that the illicit trade undermines youth smoking prevention efforts:

"Illicit tobacco products are available at a number of locations in communities across the UK, including in

*the workplace, in pubs, in street markets, at car boot sales and on the street. Smuggled tobacco is also made available in some communities from people's own homes. This creates a completely unregulated distribution network, and makes tobacco far more accessible to children and young people."*¹²⁰

HMRC and the UK Border Agency echo these concerns:

*"The availability of illegal tobacco products undermines public health objectives and impacts on the health of both individuals and wider communities; circumventing ... age of sale restrictions."*¹²¹

The UK media is rife with examples of the ease and frequency with which young people access cheap illicit tobacco. HMRC even noted in its report last year that it found *"ice-cream vendors selling illicit tobacco to children."*¹²²



C. An increase in illicit trade will lead to significant losses in government revenues

By causing illicit trade to increase, plain packaging will cause significant losses in government revenues. In fact, the DH concedes that *"[a]ny adverse impact of standardised tobacco packaging (increase) in the non duty paid segment of the market could involve significant costs."*¹²⁴

The illicit tobacco trade already causes the UK government severe financial damage. According to HMRC the UK Treasury loses between 2.2 and 3.1 billion pounds per year to the illicit trade.¹²⁵

The DH attempts to quantify the potential impact on tax revenue of the likely illicit trade increase caused by plain packaging as follows:

*"A one percentage point increase in the market share of non UK duty paid cigarettes would cost around £90 m in lost duty."*¹²⁶

The DH, however, underestimates this cost by more than 130 million pounds. According to HMRC data, a one percentage point increase in the illicit cigarette market alone would cost up to 220 million pounds in lost duty.¹²⁷

D. The illicit trade funds organised crime

"Tobacco smuggling is organised crime on a global scale with huge profits ploughed straight back into

the criminal underworld, feeding activities like drug dealing, people smuggling and fraud."

**—John Whiting, Assistant Director
Criminal Investigation, HMRC¹²⁸**

HMRC and the Organised Crime Task Force (the "OCTF") as well as many international agencies have long recognised the role that the illicit tobacco trade is playing among organised criminal networks and even terrorists groups. This was confirmed by the World Customs Organization, which states that cigarette smuggling is *"a global criminal business"* that *"generates huge profits for those involved,"*¹²⁹ and according to Austin Rowan, the head of OLAF's cigarette smuggling unit, *"[t]his trade is financing organizations that are involved in other activities, including drugs smuggling."*¹³⁰ However, neither the Consultation Document nor the Impact Assessment mention or attempt to quantify the potential cost of the increase in organised crime caused by plain packaging.

The criminal gangs that smuggle and sell the vast majority of the nearly nine billion illicit cigarettes (and HRT equivalents) consumed in the UK each year operate in the hearts of local communities. Illicit cigarettes are not the only things these criminal groups bring to local neighbourhoods: they also bring smuggled alcohol, guns, drugs, and violence.¹³¹ The man on the corner selling cigarettes to kids from the boot of his car is not acting alone – his sales fund serious organised crime and terrorism.¹³² Indeed, HMRC recognises that *"[t]obacco fraud remains one of the main pillars of organised criminal activity in the UK."*¹³³ Current UK police officers confirmed this in a recent survey, with more than 90% agreeing that *"the profits from smuggling tobacco products also helps fund other criminal activity and organised crime."*¹³⁴

For example, the OCTF's 2011 Report on Northern Ireland stated:

*"Cigarette smuggling continues to be a major threat, with a number of organised crime groups causing serious damage to the exchequers on both sides of the border. ... Joint working between the HMRC and the Irish Revenue Commissioners has demonstrated that frequently the same criminal groups are active in both jurisdictions. ... In each of these scenarios the operation is controlled by organised crime groups who stand to make huge profits from the enterprise."*¹³⁵

Illicit Traders Target Youth in all Regions of the UK

NORTHERN IRELAND

Children getting hooked on illegal cigarettes
"Children are getting hooked on smoking through the sale of illegal cigarettes in 'tag houses' ... Richard Ferry, from Trading Standards North East, told the BBC: 'About 30% of under 18s admit to buying cheap illicit tobacco.'"
Belfast Telegraph, 28 October 2009

NORTH WEST

Illegal tobacco makes it too easy for children to smoke.
Warrington Guardian, 11 November 2011

WEST MIDLANDS

Campaign to tackle 'tag houses' on city estates
"A £71,000 campaign to target illegal counterfeit cigarettes is to be launched in the city. Nottingham Trading Standards have been awarded the funding from the Department of Health to tackle 'tag houses' which sell fake branded cigarettes to children aged 12 or younger on city estates."
Jayne Garfitt, thisisnottingham.co.uk, 16 March 2012

WALES

Pontypool ice cream men sold cigarettes to children
BBC News, 11 May 2010

SOUTH WEST

Campaign to target illegal tobacco sale
"The city council Trading Standards department is clamping down on an illegal trade which creates a cheap source for children and adults who would not otherwise be able to afford to smoke."
This is Plymouth, 03 November 2011

SOUTH EAST

Counting the real cost of illicit tobacco in Portsmouth
"Illegal tobacco has a devastating impact on the Portsmouth community. It provides easy access to smoking for children, who are able to use their pocket money to buy cheap cigarettes and can buy them underage without any questions asked. It can force families into crime and bring criminals into our community."
Dr. Paul Edmondson-Jones, NHS Portsmouth's Director of public Health and Primary Care. Thisisportsmouth.co.uk, 30 September 2010

SCOTLAND

Campaign aims to stub out illegal tobacco sales
"A campaign aimed at stubbing out the supply of illegal tobacco across Grampian has been launched."
Aberdeen City Council, 20 March 2012

NORTH EAST

Fears illegal cigs get children hooked on smoking
"Fears children are being harmed by smoking illegal tobacco will lead to trading standards officers targeting pubs and workplaces in a major crackdown on illicit cigarette suppliers."
St. Helen Star, 27 January 2012

YORKSHIRE & THE HUMBER

Stubbing out illegal tobacco sales to children
"Those involved are not concerned if they are selling to children and underage young people and the illicit trade has a devastating impact on legitimate retailers and the local community."
Hull Daily Mail, 17 August 2011

EAST MIDLAND

We need to curb these 'tag houses'
"The major concern about these 'tag houses' is that because they are totally unregulated, cigarettes are often sold to young children."
This is Leicestershire, 28 June 2010

EAST OF ENGLAND

Campaign to target illegal tobacco in region launched
"A campaign to stop illegal tobacco being sold to children at 'pocket money prices' across the region will be launched next month."
Cambridge First, 23 March 2012

E. Plain packaging will undermine law enforcement efforts to fight the illicit trade

The DH does not mention or attempt to assess the additional strain plain packaging will inflict on already overburdened UK law enforcement agencies.

In the financial year 2010/11 alone, 70% of England councils dealt with complaints or enquiries related to the illicit tobacco trade and there were approximately 2,800 complaints about, and approximately 12,900 premises visits, related to under-age sales.¹³⁶ As plain packaging drives illicit trade, the volume of complaints will increase. At the same time, Trading Standards are already suffering budget cuts of up to 40%, severely limiting their ability to cope with any increased demand.¹³⁷

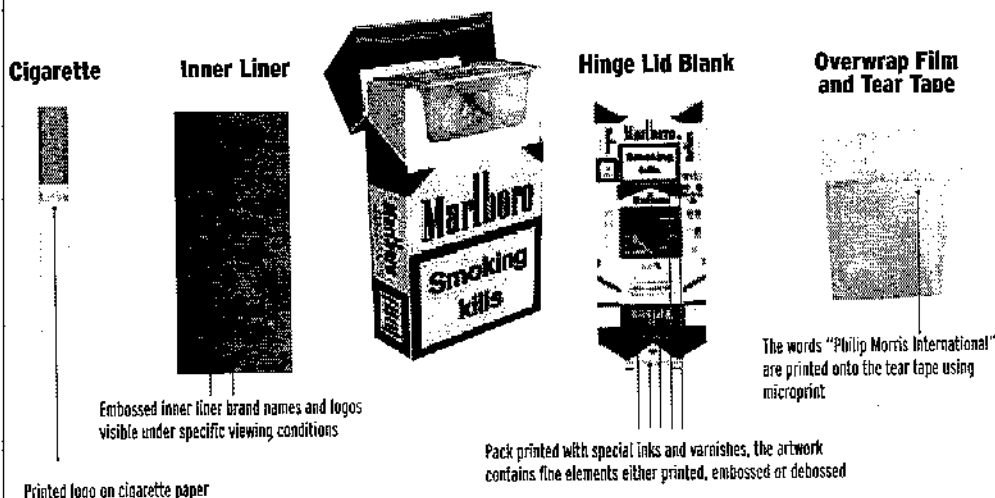
In a recent Populus survey of current UK police officers, nearly 80% said that the government already does not provide sufficient resources to tackle the illicit trade in tobacco, 91% said that recent public sector resource cuts make fighting the illicit trade more difficult, and

84% said that they would not have the resources necessary to deal with a plain packaging driven increase in illicit trade.¹³⁸ On the whole, law enforcement officers believed that to deal with an increase in illicit trade they would need more financial and human resources (81%), as well as training to be able to identify counterfeit and contraband products (85%).¹³⁹

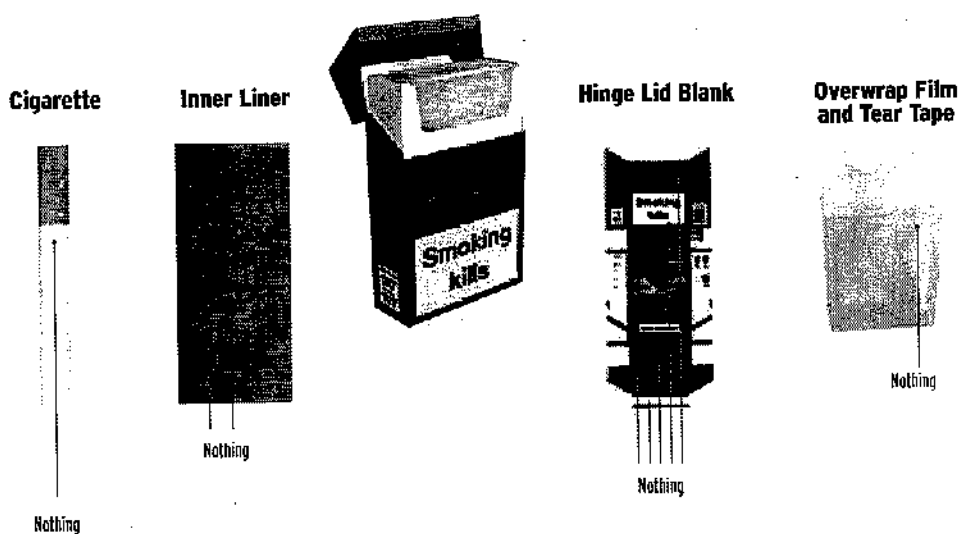
Unfortunately, under plain packaging, many of the common authentication features used by law enforcement officers to identify counterfeit products will disappear.

Disappearing Authentication Features

In addition to covert security features, tobacco manufacturers go to great lengths to design overt authentication features that are difficult, if not impossible, for counterfeiters to imitate. These overt features allow law enforcement to quickly spot counterfeit products. Below are some examples:



And those that would be left with plain packaging



F. Plain packaging will harm legitimate businesses and threatens jobs

"[The illicit trade] harms the overwhelming majority of law abiding businesses who sell tobacco products legally, diverting revenues from retailers all over the country."

—HMRC and UK Border Agency¹⁴⁰

Every pack of cigarettes sold on the street is one less pack sold in a legitimate shop, which means one less

customer visit, and fewer purchases of other goods by those customers.¹⁴¹ As explained by HMRC and the UK Border Agency, this "affects employment in the retail and manufacturing sectors that depend on these sales."¹⁴² Plain packaging will only exacerbate this by further increasing demand for illicit products and reducing visits to legitimate stores, by increasing in store transaction times and frustrating customers, and by encouraging consumers to shop at larger retailers as opposed to small shops.¹⁴³

FAKE CIGARETTES: WHAT ARE THEY SMOKING?



All cigarettes are dangerous and cause disease, but according to HMRC, "[m]any of the counterfeit cigarettes are manufactured in underground factories overseas using contaminated tobacco leaves, substantially increasing the health risks associated with smoking, with much higher levels of tar, nicotine, carbon monoxide, lead, cadmium, and arsenic than genuine brandname cigarettes."¹⁴⁴

HMRC has warned that counterfeit cigarettes have also been found to contain "rat droppings, camel dung, sawdust and tobacco beetles."¹⁴⁵



Plastic, insects, and metal pieces found in fake tobacco

In a 2011 BBC documentary, Professor Robert West, Director of Tobacco Studies at University College London, explained that the level of lead found in counterfeit tobacco was 30 times that found in genuine cigarettes, "so it is equivalent to smoking 30 cigarettes for every cigarette that you would buy legitimately."¹⁴⁶

Scientists have concluded that "the typical counterfeit product adds significantly to the risks normally associated with smoking cigarettes."¹⁴⁷ This is not surprising considering the squalid conditions in most illicit tobacco production facilities.



Legitimate tobacco industry suppliers will suffer the same fate: as the demand for illicit products increases, the demand for legitimate supplies, such as printed packaging materials, will be reduced. These concerns, and the "huge number of jobs" that would be at risk if plain packaging is introduced, was recently discussed during a parliamentary debate on illegal alcohol and tobacco sales.¹⁴⁸ The issue was considered again during a 17 April 2012 parliamentary debate on cigarette packaging, during which it was acknowledged that "thousands of people could lose their jobs printing cigarette packets" and that "[t]he concern about jobs in the printing and packaging industry" was one that was "shared by many."¹⁴⁹

In the words of Unite, the largest union in the UK:

*"Switching to plain packaging will make it easier to sell their illicit and unregulated products especially to young people. That would undermine the regulated industry ... and put workers in the regulated industry out of work."*¹⁵⁰



"The smuggling of cigarettes and hand-rolling tobacco is also a key business for organised criminal gangs who use the proceeds of this crime to fund the smuggling of drugs, weapons and also human beings."

—HMRC and UK Border Agency¹⁵¹

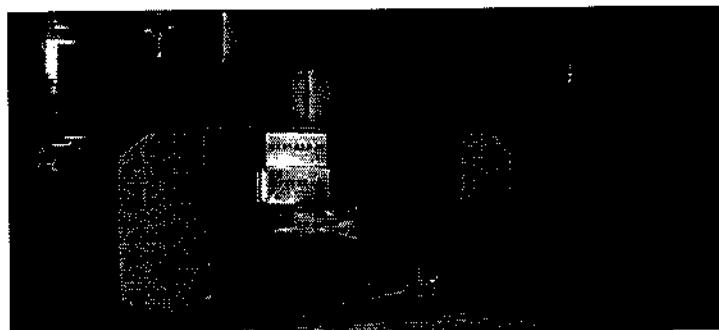


Image source: OCTF Report 2011

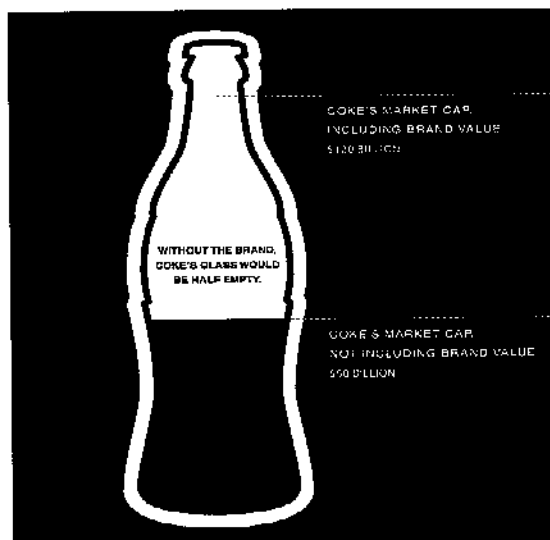
VI. PLAIN PACKAGING WILL REQUIRE THE GOVERNMENT TO COMPENSATE TOBACCO COMPANIES AND WILL COST UK TAXPAYERS BILLIONS OF POUNDS

"Given the impact that plain packaging would have on intellectual property rights, we would need strong and convincing evidence showing the health benefits of this policy."

—Andy Burnham,
Secretary of State for Health¹⁵²

Trademarks and other intellectual property are protected by national,¹⁵³ European,¹⁵⁴ and international laws and treaties.¹⁵⁵ Both the Consultation Document and the Impact Assessment fail to consider that trademarks are valuable property and that plain packaging would make them worthless by banning their use. As explained below, if the UK government implements plain packaging, it will have to pay substantial compensation to tobacco companies for expropriating their property.

Trademarks and other intellectual property rights are extremely valuable as a result of their wide recognition and the values associated with the brands they identify. Take Coke, for example: without the ability to brand its products with trademarks, the loss in value would be extreme.



Source: Neumeier, M., *The Brand Gap*, Neutron LLC, available at: http://ptgmedia.pearsoncmg.com/images/0321348109/goodies/The_Brand_Gap.pdf

Tobacco trademarks are no different. In fact, BrandZ recently ranked *MARLBORO* as the 7th most valuable brand in the world, behind Coke (6th), Microsoft (5th), McDonald's (4th), Google (3rd), IBM (2nd), and Apple (1st).¹⁵⁶

#	Company	Brand	Brand Value (\$Bn)	2011 Brand Value (\$Bn)	2010 Brand Value (\$Bn)	% Increase (2011 vs 2010)	Year Founded
1	Technology	Apple	182.451	161.2	140.8	29%	1976
2	Technology	Microsoft	115.463	101.4	88.4	13%	1981
3	Technology	Google	107.907	91.4	78.4	16%	1998
4	Food & Beverage	McDonald's	88.198	81.4	74.4	9%	1955
5	Technology	Facebook	76.413	61.4	46.4	27%	2004
6	Food & Beverage	Coca-Cola	71.266	66.4	61.4	8%	1886
7	Tobacco	Marlboro	70.117	65.4	60.4	9%	1955
8	Technology	Amazon	58.870	51.4	46.4	14%	1994

Source: http://www.millwardbrown.com/brandz/2012/documents/2012_BrandZ_Top100_Chart.pdf

Examples of Trademark Protection

Designs on the pack, such as the Rooftop device, are protected as trademarks. Also, related patterns and other design features are protected as trademarks.

Other trademarks featured on the pack include Marlboro Selected Fine Tobaccos, Infoline and Marlboro 20 Class A Cigarettes.



The Crest device is protected as a trademark as are many other device trademarks featured on the pack.

The Marlboro script is protected as a trademark. Also the overall setup of the Marlboro pack is trademark protected.

Cigarette packaging also includes many technical features and innovations, which are protected by various patents, industrial designs or other IP rights.

MARLBORO is just one of the thousands of valuable trademarks the UK government would expropriate through plain packaging.¹⁵⁷

The right to property, including trademarks, is fundamental and is enshrined in Article 1, Protocol 1 of the European Convention on Human Rights ("ECHR") and the Charter of Fundamental Rights of the European Union (Article 17). As explained by Lord Hoffmann, retired Law Lord, arguably the UK's most respected legal mind over the past 30 years, and currently Chair of the Intellectual Property Institute's Research Council:

"A prohibition on the use of a mark is in my view a complete deprivation of the property in that mark, notwithstanding that the proprietor might be able to distinguish his goods by the use of some other mark."¹⁵⁸

It is well-established under European jurisprudence that such a deprivation of property by the government is unlawful without just compensation:

"The taking of property without payment of an amount reasonably related to its value will normally constitute a disproportionate interference and a total lack of compensation can be considered justifiable under [Article 1 Protocol 1] only in exceptional circumstances."¹⁵⁹

Lord Hoffmann confirms that the UK government cannot deprive tobacco companies of their valuable trademark rights without compensation:

"I can see no reason why depriving someone of his proprietary interest in a trade mark for a tobacco product (however much it may be in the public interest to do so) should be different in principle from any other deprivation in which compensation is required."¹⁶⁰

WHAT IS A TRADEMARK WORTH?

Paragraph 81 of the Impact Assessment provides a calculation of the *"loss to business of the goodwill value of the brands and the profit accruing to their sunk expenditure."* This calculation does not, however, indicate the value of trademarks used on tobacco packaging or the scale of compensation the UK government would owe tobacco manufacturers for the expropriation of their trademarks. Experts estimate that the compensation owed to tobacco manufacturers would amount to billions of pounds.

For example, investment analyst Adam Spielman stated:

"Another reason why the government may want to avoid plain packaging is that there is risk that it may be forced to pay compensation to the tobacco industry, and that this may run into the billions of pounds."

"If a court does order compensation, then it could potentially be very large indeed. We outline two valuation approaches that both lead to 'fair' values for the brand designs of about £3-5 billion for the UK industry as a whole."¹⁶¹

In addition to expropriating intellectual property rights, plain packaging breaches EU law and contravenes international treaties. Among other things, standardised packaging:

- **Violates tobacco manufacturers' rights to freedom to conduct a business**

ECHR Article 10 guarantees freedom of expression, including commercial expression. Standardised packaging will prevent commercial expression via trademarks, thereby violating the rights of companies to speak free from interference. In essence, standardised packaging will impose on tobacco companies a communication ban, by removing the last channel of commercial communication between tobacco manufacturers and adult smokers. The DH itself acknowledged in the Impact Assessment that standardised packaging *"will limit competition through limiting product differentiation"* and will reduce *"the ability of tobacco companies to compete through product differentiation because of different packaging."*¹⁶²

Article 16 of the Charter of Fundamental Rights of the European Union protects the right to conduct a business.¹⁶³ Standardised packaging will prevent tobacco companies from marketing their products using trademarks to distinguish goods, which is a key aspect of entrepreneurial freedom, violating the right to conduct a business, and thereby undermining the EU's fundamental objective of an internal market in which competition is not distorted.

- **Violates the principle of free movement of goods**

The principle of the free movement of goods is a founding principle of the EU. Article 34 of the Treaty on the Functioning of the European Union ("TFEU") prohibits "quantitative restrictions on imports and all measures having equivalent effect" between EU Member States. Article 34 prohibits measures that require products to meet certain specifications if those specifications would directly or indirectly obstruct free trade within the EU. This means that if a product is lawfully produced and marketed in one Member State, it should be admitted for marketing and sale in any other Member State without restriction (absent any justified reason). Under standardised packaging, branded products lawfully produced and marketed in other Member States could not be sold in the UK unless special non-branded packs were made, which is a clear violation of Article 34 TFEU.

- **Violates Community Trademark Regulation**

Prohibiting the use of tobacco companies' valuable EU Community trademarks would be unlawful under Article 1(2) of the Community Trademark Regulation (Regulation 207/2009) which requires that all EU Member States give equal effect to Community trademarks. In particular, Member States cannot unilaterally prohibit the use of a Community trademark. Thus plain packaging would subject the UK to potential infringement proceedings brought by the European Commission or other Member States.

- **Violates the UK's international treaty obligations**

The UK is a member of the World Trade Organisation (the "WTO"), as well as a signatory to the Trade-Related Aspects of Intellectual Property Rights agreement ("TRIPS") and the Paris Convention for the Protection of Industrial Property (the "Paris Convention"). Standard-

ised packaging contravenes several of its obligations under these agreements.

First, standardised packaging unjustifiably encumbers the use of trademarks and breaches Article 20 of TRIPS:

"The use of a trademark in the course of trade shall not be unjustifiably encumbered by special requirements, such as ... use in a special form or use in a manner detrimental to its capability to distinguish the goods or services of one undertaking from those of other undertakings."

Second, TRIPS makes it clear that the nature of the goods to which a trademark is applied shall in no case form an obstacle to the registration of the trademark.¹⁶⁴ Although Article 15(4) of TRIPS and Article 7 of the Paris Convention refer only to barriers to registration (rather than use), the use of a trademark and its registration are inextricably linked and members cannot allow technical registration of trademarks but ban their use.¹⁶⁵

These violations would result not only in the invalidation of the plain packaging legislation, but also in potential sanctions against the UK and retaliation from trade partners.

LEGAL DISPUTES OVER PLAIN PACKAGING IN AUSTRALIA

Australia currently faces legal challenges related to plain packaging on multiple fronts:

- all four major tobacco manufacturers have brought claims before the High Court of Australia on the basis that under plain packaging, the Australian government would acquire their property without paying compensation in violation of the Australian Constitution;
- Philip Morris Asia Ltd. seeks compensation through international arbitration proceedings under the Hong Kong-Australia Bilateral Investment Treaty; and
- three WTO members are pursuing claims against Australia through the WTO dispute resolution process.

Since Australia announced its draft plain packaging legislation to the WTO in April 2011, a number of WTO members, including the EU and those members making claims against Australia, have raised concerns about the legality of plain packaging; including specifically that plain packaging:

- creates unnecessary barriers to trade in violation of the WTO Agreement on Technical Barriers to Trade;
- unjustifiably encumbers the use of trademarks and geographical indications in violation of TRIPS; and
- will create confusion among consumers in violation of the Paris Convention.

According to reports from Australia, *"The [WTO] case is shaping up to become the biggest trade dispute Australia has ever faced as a defendant ... it has the potential to overturn the anti-smoking law."*¹⁶⁶ In fact, the legal challenges facing Australia as a result of plain packaging have forced the government to take the *"unprecedented step of setting up a special branch-level taskforce"* within the Department of Foreign Affairs and Trade.¹⁶⁷

VII. PHILIP MORRIS LIMITED SUPPORTS EFFECTIVE REGULATION TO ADDRESS YOUTH SMOKING

"Intervening to prevent tobacco access from social sources will be necessary to prevent young people from starting smoking, as both younger and occasional smokers predominantly depend upon social sources."

—Institute of Education,
University of London¹⁶⁸

We do not oppose plain packaging because, as many claim, we are concerned that it will "work" (i.e. that it will reduce smoking prevalence). As we have explained in great detail above, Philip Morris Limited opposes plain packaging because the available data - which includes real world experience - shows that plain packaging will have no public health benefit and will cause significant adverse consequences. Instead of plain packaging, we support regulation and other measures that are proven to effectively reduce youth smoking. Moreover, the repeated claim by many tobacco control advocates that our opposition to plain packaging is the "strongest evidence" of plain packaging's effectiveness is, on the contrary, proof of the weak state of the evidence "supporting" plain packaging. Our opposition does nothing more than show that brand owners want to preserve their right to use their brands - a normal position regardless of the impact on smoking prevalence.

In fact, Philip Morris Limited supports regulations that will reduce smoking prevalence and effectively prevent smoking initiation, especially among young people. As explained above, there is no evidence to support the belief that packaging drives smoking initiation among youth or adults. Nor for that matter does the data suggest that packaging prevents quitting. On the other hand, access to tobacco, peer and parental influence, and affordability are key contributors to youth smoking.

Instead of plain packaging, which is almost entirely focused on the ability of legitimate tobacco companies to compete, the DH should consider measures that have been proven to address smoking initiation. For example, measures that prevent underage people from accessing tobacco products in the first place, including

minimum age law enforcement, social access controls, and bans on proxy purchases, have been shown to effectively reduce youth smoking initiation. In fact, UK Better Regulation Principles require the DH to consider and document whether these alternative, less restrictive measures could achieve the desired outcome.¹⁶⁹

Social access

A recent DH-funded systematic review by the London University Institute of Education found that **"social access via friends is the source used most commonly"** by young people to access tobacco.¹⁷⁰ This is particularly true for "younger and occasional smokers" - those most at risk of becoming daily smokers.¹⁷¹ In fact, social access appears to be most acute in schools, where there is an *"apparently organised and very visible exchange of tobacco between young people."*¹⁷² Because of this, the Institute of Education concludes that *"[i]nterventions to prevent social access are therefore likely to have the broadest impact whilst also being particularly useful in deterring smoking initiation."*¹⁷³ To date, however, *"little effort has gone into developing interventions specifically targeting social access."*¹⁷⁴ We have supported and continue to support the development and implementation of such school-based interventions.

Minimum age law enforcement at retail

We have also supported and continue to support strong and effective enforcement of minimum age laws in retail shops. The Institute of Education found that youth access to tobacco products through retail outlets is still a problem: **"patterns of retail access shown in surveys and qualitative data suggest that retail regulation implementation is variable, but where implemented consistently will deter access attempts."**¹⁷⁵ Indeed, a recent Trading Standards report highlighted the ease with which young people buy tobacco in retail outlets: in 15% of undercover test buys, retailers sold to underage youths, and an estimated 1,100 premises across England regularly sell tobacco products to minors.¹⁷⁶ At the same time, only 51% of councils carried out education initiatives related to the sale of tobacco products to minors.¹⁷⁷ Unfortunately, local Trading Standards organisations are suffering massive budget cuts of up to 40%, which will leave them with fewer resources for education and enforcement, and could lead to increased youth access to tobacco products.¹⁷⁸

Proxy purchasing

The Institute of Education further identified proxy purchases – purchases by friends, family, or strangers on behalf of underage young people – as a significant and still legal tobacco access route for young people.¹⁷⁹ In a recent survey of young people aged 11 to 15 years old, 89% of regular smokers had asked someone to buy cigarettes on their behalf.¹⁸⁰ As explained by James Lowman, the Chief Executive of the Association of Convenience Stores ("ACS"), that "an adult that buys cigarettes from a shop and then walks outside and hands them over to a child is not breaking the law."¹⁸¹ Clearly, this is not acceptable. Scotland has recently banned proxy purchasing, and various stakeholders, including the ACS, have called for a UK-wide ban. We also support a ban on proxy purchases.

Experience from other countries

Outside the UK, research and experience show that youth smoking can be reduced successfully when measures to control access to tobacco are combined with other interventions such as education campaigns, school-based and other social programmes, reasonable public smoking restrictions, and fiscal policies designed to increase tobacco prices while controlling the illicit trade.

For instance, Sweden has taken the position that reducing young people's access to tobacco, coupled with in-school education programmes, is an effective way to reduce youth smoking. Citing official data

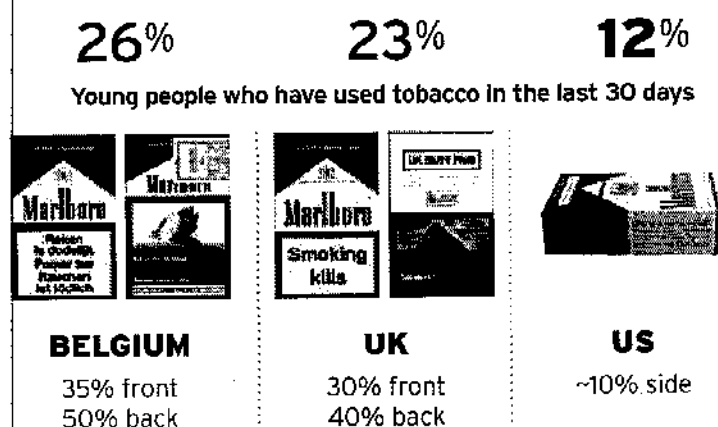
released recently by ESPAD, Minister of Health Maria Larsson explained:

"The results show that Swedish school children smoke less than in most countries. ... It should be noted that Finland, although they have adopted a zero vision for tobacco and a display ban for tobacco sales, has a higher proportion of adolescents who smoke than Sweden."¹⁸²

Similarly, the US has enjoyed low youth smoking and overall consumption through much less restrictive and costly measures than plain packaging:

"Coordinated, multicomponent interventions that combine mass media campaigns, price increases including those that result from tax increases, school-based policies and programs, and statewide or community-wide changes in smoke-free policies and norms are effective in reducing the initiation, prevalence, and intensity of smoking among youth and young adults."¹⁸³

These "coordinated, multicomponent interventions" resulted in rapid declines in youth smoking from the late 1990s through to 2004. The US enjoyed this success without banning the display of packs at retail and by having small, text-only health warnings on one side panel of cigarette packs.



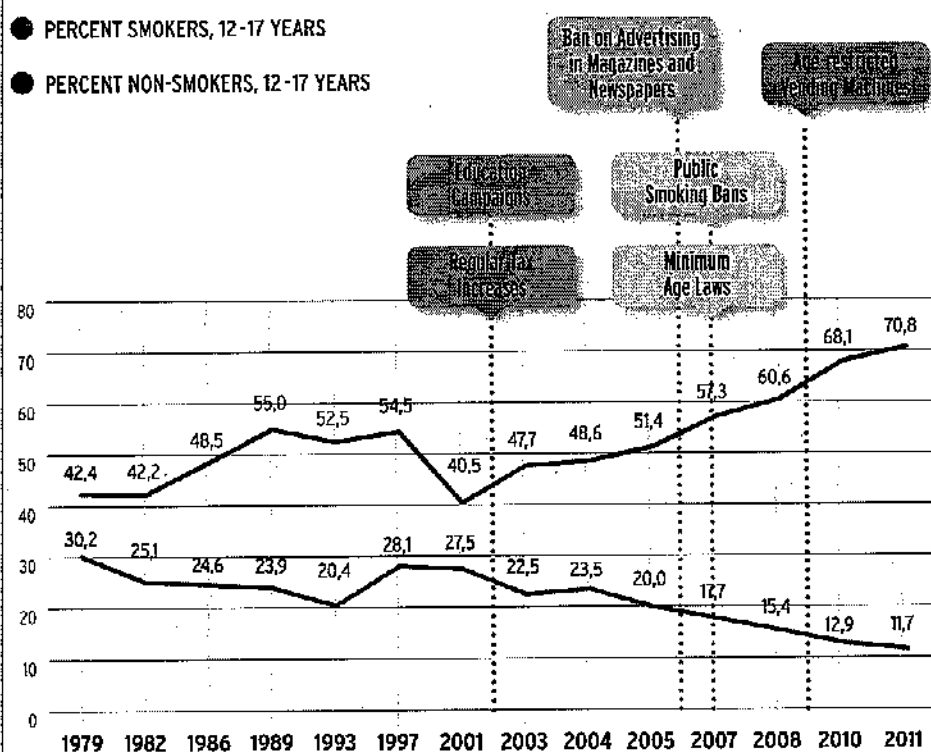
There is no relationship between health warnings size and youth smoking. The US demonstrates that youth smoking can be substantially reduced **WITHOUT removing branding.**

Source: Hibell B. et al., The 2011 ESPAD Report: Substance Use Among Students in 36 European Countries, available at http://www.espad.org/Uploads/ESPAD_reports/2011/The_2011_ESPAD_Report_FULL_2012_06-08.pdf.

GERMANY: EFFECTIVE PRACTICES TO REDUCE YOUTH SMOKING

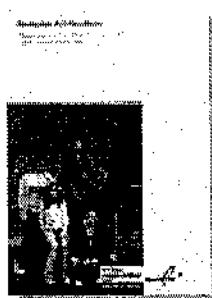
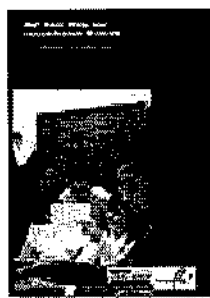
Germany shows that very substantial progress in reducing youth smoking can be made in current regulatory environments.¹⁸⁴ The Federal Centre for Health Education (BzgA) reported that the "percentage of smokers among young people aged between 12 and 17 years has dropped to a new all-time low: 11.7 per cent in 2011 from 27.5 per cent in 2001."¹⁸⁵ The Federal Drug Commissioner explained this success as follows:

"Alongside regulatory measures such as the Youth Protection Bill's smoking restriction for under-age persons, tobacco tax increases and regulations aimed to provide protection from passive smoking in Germany, the Federal Office for Health Education's (BZGA) 'Smoke Free' youth campaign has contributed significantly to the success of tobacco policies in the target group of under-aged and young adults."¹⁸⁶



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The primary difference between the German and UK tobacco control strategies is Germany's targeted prevention and education campaigns, many of which are school-based. Through the use of credible messengers, including parents and teachers, these programmes focus on at-risk young people in order to empower them to make informed decisions about tobacco, alcohol, and other drugs.



Our support of measures like these in countries around the world is tangible evidence that Philip Morris Limited does not hesitate to promote legislation, regulation, and programmes that are known to reduce the consumption of tobacco products.

* * *

In conclusion, the UK has yet to effectively address social sources of tobacco for young people, and budget cuts will further undermine law enforcement's efforts to control retail access points. As evidenced by the US, Swedish, and German examples, and as recommended by experts, including the University of London Institute of Education, there are alternative measures that are proven to improve public health by reducing youth smoking initiation and overall consumption. UK Better Regulation Principles require the DH to identify these alternatives, determine their potential to achieve the DH's objectives, and explain why plain packaging would be even more effective and/or less costly.¹⁸⁸ As the DH itself acknowledges that the effectiveness of plain packaging is (at best) uncertain, it can reject the proposal for plain packaging and instead focus on the proven effective alternatives.¹⁸⁹

VIII. CONCLUSION

The DH's objective for plain packaging is *"to improve public health by reducing the use of tobacco"*¹⁹⁰ and in particular *"to deter young people from starting to smoke."*¹⁹¹ And the DH has said repeatedly that it *"would need strong and convincing evidence showing the health benefits of this policy."*¹⁹²

However, as shown above, such strong and convincing evidence does not exist. The available evidence, including the very studies relied upon by the DH, demonstrates that plain packaging will not reduce smoking rates, deter young people from smoking, or otherwise benefit public health. In fact, many experts and stakeholders believe that plain packaging will backfire, undermine public health and create serious adverse consequences – in particular by stimulating the illicit tobacco trade. At the same time, plain packaging breaches a number of the UK's national and international legal obligations. In particular, plain packaging will constitute an expropriation of valuable brands and will cost UK taxpayers billions of pounds in compensation.

Plain packaging defies common sense. There are effective ways to prevent youth smoking uptake and to facilitate quitting, as case studies from other countries as well as recent concrete recommendations from UK institutions demonstrate. The DH should reject the misguided plain packaging policy and focus instead on interventions that work.

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ANNEX 1

[REDACTED] /OIS/DOH

10/05/2011 09:42

To [REDACTED]@health.gov.au

cc [REDACTED]@DOH

bcc

Subject: Plain packaging cost analysis
1

Dear [REDACTED]

I work on the UK Government's Tobacco Policy Team, with [REDACTED] and you will be aware that the UK Government is considering the introduction of plain packaging of tobacco products.

As I'm sure you're aware, one of the difficulties regarding this is that nobody has done this and therefore, there isn't any hard evidence to show that it works. Therefore, I am wondering whether the Australian government drafted any type of impact assessment or cost analysis in which the likely benefits and costs are measured and if so, whether you would be willing to share this information with us.

Many thanks,

[REDACTED]
Tobacco Policy
Department of Health
[REDACTED] Wellington House
133-135 Waterloo Road
London
SE1 8UG

Tel: [REDACTED]
E-mail: [REDACTED]

ANNEX 2

Summary assessment of “Plain Tobacco Packaging: a systematic review”

22 May 2012

1. Introduction

On 16 April 2012, the UK Government launched a public consultation to assess whether standardised packaging of tobacco products would improve public health by reducing tobacco use.¹ To inform this consultation, the Department of Health commissioned a review of the evidence of the effectiveness of standardised tobacco packaging (also referred to as “plain packaging”). The review, titled “Plain Tobacco Packaging: a Systematic Review”, was prepared by teams from the University of Stirling, the University of Nottingham and the Institute for Education, London (for ease of reference, we will refer to it as the “Stirling Review” hereafter).

The Stirling Review summarizes the results of 37 studies selected from more than 4,519 documents regarding plain packaging. It concludes that plain packaging might effectively reduce pack and product appeal, enhance health warning prominence and eliminate confusion regarding the harmfulness and strength of cigarettes.

In this context, Philip Morris International has asked us to review and assess the Stirling Review.

2. Conclusions

The Stirling Review fails to provide evidence that the implementation of plain tobacco products would improve public health by reducing tobacco use.

- First, and most importantly, neither the Stirling Review nor any of the studies reviewed therein even attempt to address the fundamental question - whether plain packaging will reduce tobacco consumption;

¹ UK Department of Health (2012), “Consultation on standardised packaging for tobacco products”, para 1.1.

- Second, the studies included in the Stirling Review are not reliable, rigorous, high quality studies; they contain evidence collected primarily through small and unrepresentative samples; they rely mostly on answers to hypothetical questions, and the results cannot be tested or used to predict how individuals will behave if plain packaging is actually implemented;
- Third, all the literature cited makes conclusions based on comparisons of plain and branded packaging, a comparison that smokers of legal products will be unable to make if plain packaging is introduced; and
- Fourth, the Stirling Review itself lists such a large number of essential limitations that it justifiably calls into question the reliability of its conclusions.

3. Shortcomings of the Stirling Review

Of the 37 documents included in the Stirling Review:

- 18 were produced in or before 2009; i.e. before the previous consultation on the potential introduction of plain packaging in the UK determined that there was no conclusive evidence in favour of plain packaging;
- Seven documents were not publically available, making it impossible to assess their methodological rigour. Similarly, three were conference abstracts or PowerPoint presentations that did not provide sufficient detail for a complete assessment, and two were masters theses;
- Only three research works are not opinion-based and rely on objective, observable measurement: one article recorded eye movements (saccades), another recorded transaction times and another measured auction strategies. However, none of these answered, directly or indirectly, the question of whether plain packaging will reduce tobacco use; and
- 27 of the 37 studies were based on *convenience* samples that often involved very few subjects and were not representative of the population. As such, they are inherently unreliable.

Most of the studies were based on self-reported or speculative data such as survey questionnaires or focus group responses, which by definition do not measure behaviour but report subjective and/or speculative opinions. These studies measured how plain packaging might affect the subjects' *perceptions* of cigarette appeal, the harms of smoking, and the effectiveness of health warnings. However, none of these studies, nor the Stirling Review, provides any evidence linking these perceptions to actual smoking behaviour.

For example, in Wakefield 2008, while the data showed perceptions of reduced brand appeal with plain packaging, there was no statistical difference in subjects' intentions to smoke after the removal of brand design elements from packaging. Despite this, the authors concluded that their work "extends the existing evidence base" in support of plain packaging.

Every one of the studies cited in the Stirling Review suffers from one or more of the defects listed above. In spite of these limitations, the authors of the Stirling Review only discarded four of the 41 studies originally identified due to the low quality of the evidence.

Even the authors of the Stirling Review concede that it is subject to significant limitations, including²:

- The absence of real-world trials and longitudinal research, which are generally regarded as the most robust methodologies;
- The reliance on evidence largely based on *"hypothetical scenarios, [which] are therefore not truly able to test how individuals would react or behave if plain packaging was introduced"*;
- The reliance on results derived, from the most part, from unrepresentative samples;
- The reliance on statements of intention *"without any form of validation (such as validating reported changes in cigarette consumption)"*. The *"weak predictive validity"* of such studies leaves their results *"speculative"*;
- The reliance on unpublished material, *"which made it more difficult to determine methodological rigour"*.

Finally, while not noted by the authors as a limitation, seven of the studies reviewed were authored by one or more of the authors of the Stirling Review, creating the potential for bias and/or conflicts of interest.

We find it surprising that, despite these severe limitations, many of which the authors admit, and the fact that the Stirling Review makes no link between the studies reviewed and the fundamental question of the impact of plain packaging on tobacco consumption, the authors would still qualify the studies as evidence that plain packaging will reduce tobacco consumption. Indeed, it would have been much more accurate if the Stirling Review had concluded that such evidence is not available.

² See, Stirling Review at p.89

ANNEX 3

Alfred Kuss

Comments concerning Annex 2 "Elicitation of Subjective Judgments of the Impact of Smoking of Plain Packaging Policies for Tobacco Products" of the IA No. 3080 "Standardized packaging for tobacco products"

1. Introduction

I was asked by Philip Morris International to analyse the appropriateness of the method to estimate the impact of plain packaging for tobacco products suggested by the UK Department of Health as outlined in Annex 2 of the Impact Assessment No. 3080 "Standardised packaging for tobacco products" dated 3 May 2012 ("IA"). I will assess whether the proposed research design corresponds to the state of the art in social research and marketing research methodology and whether objective and well-founded results can be expected from this study.

My comments follow the numbered paragraphs on pp. 28 – 29 of the IA. The respective text is included alongside my comments below.

In the whole paper we find no explanation for how and why it was decided to estimate the impact of standardized packaging on smoking behavior by subjective judgments from so-called "experts." In paragraph 53 (p. 14) of the IA we find only a short description of the procedure, but no reasons why it should be used. The authors refer to Annex 2, but there we find only a more detailed description of the proposed method and no explanation for its use. This method is extremely unusual in social and marketing research. As we will see, this approach and the details of its implementation will lead to weak results with severe and systematic biases.

2. Comments to Annex 2

Annex 2	Comments
Overall aim 119. To elicit experts' judgments regarding the likely impact of the introduction of a plain packaging policy for tobacco products on (i) the number of smokers and/or (ii) the number of children trying smoking	Here we find the first fundamental error. The aim of the study stated on page 14 of the IA is to measure the "Impact on smoking uptake and quitting." Usually the next step would be to identify appropriate methods and select the method, or methods, most reasonably suited to achieve the aim. By stating the aim as "To elicit experts' judgments regarding the likely impact..." the authors of Annex 2 confuse the aim of the study with the method. As we will see, this prejudgment will lead to severe errors and biased results. In scientific research it is clear that the research question comes first and the method is chosen second.
120. 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? 121. What reasons do experts give for their judgments?	Here we see the same type of error. The research questions are not directed to the relevant facts (impact of standardized packaging on smoking behavior), but to the "experts" opinions in regard to these facts ("What do experts judge...", "What reasons do experts give...").
122. The Australian Government has proposed	The authors explain their view of the problems of estimating the impact of standardised packaging: "A key difficulty in evaluating this policy,

<p>legislation that would require all tobacco products to be sold in standardised packaging, and the UK government has committed to consultation 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 no country has yet introduced this measure. 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.</p>	<p>however, is the lack of quantifiable evidence on the likely impact of standardised packaging, given that no country has yet introduced this measure.”</p> <p>This is <i>completely wrong</i>. “Standardised packaging” means a change of current package designs. This is a common marketing problem, investigated with laboratory studies, test markets, surveys etc. in many, many cases all over the world. In marketing – particularly in the context of changes of the product, packaging or price – test markets (standard test markets, electronic test markets, simulated test markets) are well established methods (among others) of predicting consumer behavior (see e.g. Burns / Bush 2006). “The essential feature of the market test is that it is an experiment, done in a small section of the marketplace, with the goal of predicting the sales results of some proposed marketing action.” (Iacobucci / Churchill 2010, p. 119)</p> <p>Test markets allow quite exact forecasts – the exact “quantifiable evidence” the authors are seeking – concerning the impact of changes in the marketing mix (e.g. new packaging) on sales, based on real consumer behavior data. A test market methodology offers several opportunities to quantify the impact of standardised packaging. One form of a test market might be the use of plain packaging in one “representative” region (e.g., Australia, or a region of the country) for a period of time in order to then evaluate the outcomes.</p>
<p>123. 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 judgments 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.”</p>	<p>In this paragraph some basic ideas of experts’ judgments are explained. Two important points should be noted:</p> <p>a) The suggested method – to collect experts’ judgments to replace empirical data or to compensate for a lack of quantifiable evidence – violates one of the basic principles of social and marketing research, well established in research and practice for at least 60 years: findings concerning how people have behaved or are likely to behave <i>must</i> be based on original data collected from the people themselves (see e.g. Creswell 2009; Kuss 2012; Neuman 2011). Exceptionally, experts’ judgments may be used in marketing research as a very first step in exploratory studies to develop some hypotheses for further research, but they cannot be used, as is the intention here, to validate hypotheses about how consumers will behave, let alone to quantify behavioral outcomes.</p> <p>Simply put: nobody in consumer research uses experts’ judgments to find out something about consumers; consumer researchers ask or observe consumers. The use of experts’ judgments as predictors of consumer behavior has been outdated since the 1940s.</p> <p>It is correct to point out that “human judgments can fall prey to certain biases.” Indeed, estimates from such “experts” are heavily influenced by their interests, limited access to the relevant information and perception errors.</p>

	<p>"Relying on experts has limitations, and it is easy to overestimate someone's expertise. Authorities may speak on fields they know little about; they can be plain wrong. Someone with expertise in one area may extend his or her real authority to an unrelated area. Using the halo effect, an expert on one area may illegitimately act as an authority in a different area." (Neuman 2011, p.5)</p> <p>We will later discuss whether the "experts" selected by the procedure suggested in paragraphs 125 / 126 will be real experts in regard to the research questions.</p> <p>b) Because using subjective judgments of experts to overcome an absence of empirical data and quantifiable evidence has these severe methodological problems, such methods are only used for a few very special purposes, e.g. long-term forecasting (e.g. "Urban style of living in 2040") or estimates in regard to technical developments (e.g. "Computer Performance in 2030").</p> <p>In paragraph 125 we find a reference to the work of Hora / Winterfeldt. Three titles of their works may illustrate that these authors used their technique for completely different purposes:</p> <ul style="list-style-type: none"> ▪ "Elicitation and use of expert judgment in performance assessment for high-level radioactive waste repositories" (1990), ▪ "Expert Judgment on Inadvertent Human Intrusion into the Waste Isolation Pilot Plant" (1991), and • "Nuclear Waste and Future Societies: A Look into the Deep Future" (1997). <p>It should be noted that the last study has a time horizon of 10,000 years. It is quite clear that these applications have nothing to do with consumer research and/or tobacco control.</p>
<p>124. In keeping with established methods for this procedure, experts will be recruited and briefed so that they know why judgements are needed and understand the procedure for eliciting these. The elicitation process involves obtaining summaries for experts' distributions and fitting probability distribution for these values. These steps are described below."</p>	<p>In the first sentence we find "...experts will be recruited and <i>briefed</i>..." I will discuss later the problem of briefing these "experts" in regard to the validity of results.</p>
<p>125. The sample will consist of three groups of internationally-renowned experts on tobacco control policies, one group recruited from each of Australasia, the UK and North America. We will aim to recruit about 10 participants per group,</p>	<p>Here the selection procedure for the so-called "experts" is described. We find two major methodological problems:</p> <p>a) The reaction of consumers to packages without typical brand identification is at the focus of an investigation like this. How will consumers change their shopping and smoking behaviour when they have difficulty finding and identifying certain brands because packages</p>

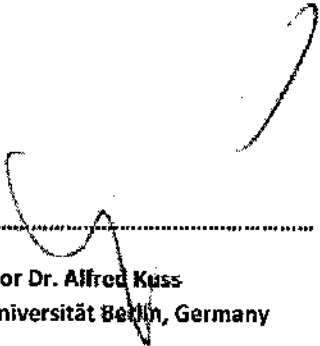
<p>numbers found to be sufficient in previous studies. Experts will meet Hora and van Winterfeldt's first four requirements for participation, that is: (a) tangible evidence of expertise (as evidenced by publications), (b) reputation (as indicated by peer nomination), and (c) availability and willingness to participate, (d) understanding of the general problem area (in addition to being a requirement for recruitment, participants will be provided with papers on the topic area to ensure sufficient knowledge). The latter two requirements suggested by Hora and van Winterfeldt (impartiality and lack of an economic or personal stake in potential findings) are considered impractical in this area, and so instead we will include a description of the participants' employment and expertise for transparency."</p>	<p>of all available brands look the same? What is the impact of plain packaging on brand identity and brand equity? Therefore, neutral experts in branding, brand management and consumer behavior would be needed, not exclusively experts in regard to tobacco control policies. The suggested procedure would lead to a selection of "experts" who do not have sufficient knowledge or experience in regard to reactions of consumers after brands nearly disappear in the tobacco market.</p> <p>b) The criteria formulated by Hora / Winterfeldt for the participation of "experts" will be only partially used. Why is the requirement of impartiality "considered impractical in this area"? If a study is aiming to find realistic and unbiased results, impartiality should be one of the major criteria for the selection of experts. Concerning the "lack of an economic or personal stake in potential findings" see my comments on paragraph 126.</p> <p>Hora / Winterfeldt (1991, p. ES-2) use as an additional criterion "balance among all participants so that various constituent groups are represented." This sounds reasonable and supports the inclusion of experts in the fields of branding, brand management and consumer behavior as mentioned above. Why will this requirement not be used?</p>
<p>126. We will identify experts from countries of interest using editorial lists for relevant publications (Addiction; Tobacco Control, and Nicotine Tobacco Research) and society memberships (Society for Research on Nicotine and Tobacco) and in consultation with key experts in this area. A third party, employed by a private company will write to potential participants, informing them of the study aim and requirements. Informed consent for participation in a one-off telephone interview will be obtained at this stage."</p>	<p>In this paragraph some more details of the procedure to select "experts" are described. The basis for this will be "editorial lists for relevant publications (Addiction; Tobacco Control, and Nicotine Tobacco Research)," "key experts in this area" and "society memberships (Society for Research on Nicotine and Tobacco)." From the editorial lists of the journals named we know that the majority of these individuals work for institutions which are involved in tobacco control policy. Therefore employees of these institutions themselves (who are at the same time on the editorial board of the mentioned journals) are not neutral and tend to give answers and estimates supporting tobacco control policy when they are asked to participate as "experts" for this study.</p> <p>These "experts" will clearly not fulfill the requirement of impartiality and they definitely do not have a "lack of an economic or personal stake in potential findings." This is another problem in regard to potential manipulation of results.</p>
<p>127. Following recruitment, times will be arranged by the third party for each participant to be interviewed. Approximately one week prior to the interview, participants will be provided via email with a recently commissioned review on the possible impact of plain packaging. The importance of reading this information, and giving some</p>	<p>Who prepares this "review"? What is its content? The intention to influence the results of the study is quite clear. This is the briefing already mentioned in paragraph 124. The "experts" can be briefed to give the "right" answers. Why is it even necessary to brief "experts"? Experts should be knowledgeable and experienced people, not needing to depend on a briefing.</p>

<p>thought to likely impact will be emphasised."</p>	
<p>128. We will use a semi-structured interview to elicit subjective judgments for the impact of standardised packaging on the prevalence of smoking and the percentage of children trying smoking. Interviews will take place by telephone and will be recorded. The researcher will ask the caller to identify him/herself in terms of the region where they work (UK, Australasia, North America), so this categorisation will be on the recording/transcript. Participants will be asked not to provide any details that could allow them to be identified, and the time and date of the data collection will not be recorded. Participants will be asked to estimate the expected value, and the lowest and highest likely values, measures that have been used previously in similar studies."</p>	<p>The procedure described here would mean that no one will know which "experts" have been included in the study and whether these people are real experts. A strange and arbitrary procedure, absolutely not appropriate for a serious study with important consequences for a big market. This and the mode of selection (see paragraphs 125/126) of the "experts" leave too many opportunities for a manipulation of results. The whole procedure is in contradiction to the basic principle of scientific work that it must be clear and comprehensible how results are found and inferences are drawn.</p>
<p>129. An outline of the areas covered in the interview script is as follows:</p> <ol style="list-style-type: none"> 1. Check whether participants have engaged with materials sent and if necessary briefly review the current evidence available. 2. Reiterate the definition of the exact quantities we want 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, and Australia for NZ experts) <ol style="list-style-type: none"> a. Emphasise that we are comparing the policy against a 'do nothing' approach and all other things being equal: <ol style="list-style-type: none"> i. Other controls regarding the sale of tobacco will still be in 	<p>In this section some details of the interview procedure are explained. Two aspects merit special attention:</p> <p>Under (1.) we find: "Check whether participants have engaged with materials sent and if necessary briefly review the current evidence available." That means in plain English: The interviewer will again influence the "experts" before she / he asks the first question.</p> <p>Under (2.a.ii.) we find: "The price would be stable." This assumption is unrealistic and in contradiction to other parts of the IA. In paragraph 70 (p. 18) the authors admit that "brand equity [will be] lost with standardized packs" because the ability to differentiate products will decrease.</p> <p>"Brand equity is the added value endowed on products and services. It may be reflected in the way consumers think, feel, and act with respect to the brand, as well as in the prices, market share, and profitability the brand commands." (Kotler / Keller 2012, p. 265). One of the main sources of brand equity is the willingness of consumers to pay higher prices for certain brands offering specific benefits. Therefore, the differentiation of brands in regard to certain target groups and their needs is a necessary condition for higher prices in many markets (Keller 2008).</p> <p>When consumers see no differences between products (products are interchangeable), they usually take the cheapest product. The authors of</p>

<p>force</p> <p>ii. The price would be stable</p> <p>3. The elicitation itself (in order; the order of questions on all smokers and children, and eliciting of highest or lowest possible outcomes will be counterbalanced):</p> <p>a. Start with neutral script outlining possibility of positive, no or negative impact</p> <p>b. For all smokers and for children trying smoking:</p> <p>i. Ask for estimate of best guess</p> <p>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</p> <p>iii. Use subsidiary questions to explore range</p> <p>iv. Confirm expert is happy with the final result</p> <p>v. Ask for reasons for estimates</p>	<p>the IA recognize this point in paragraph 94 (p. 23) "[standardized tobacco packaging] would reinforce the trend towards downtrading to lower priced cigarette brands."</p> <p>Standardised packaging (with the same design, colours etc. for all brands), in essence, communicates the message to consumers that there are no differences between the brands. Under this condition consumers are unlikely to pay more for a specific brand. The result: low price brands gain market share and higher priced brands are forced to lower their prices. That means the price level in the market goes down. Therefore the assumption made ("the price would be stable") is wrong.</p> <p>From economic theory and from numerous empirical studies we know that lower prices typically increase demand. We have to expect the following sequence of effects:</p> <div style="text-align: center;"> <p>Standardised packaging</p> <p>↓</p> <p>Products appear interchangeable</p> <p>↓</p> <p>Low price becomes main factor for consumer decisions</p> <p>↓</p> <p>Price level in the market goes down</p> <p>↓</p> <p>Consumption increases.</p> </div> <p>It therefore makes no sense that the judgment elicitation procedure would deliberately instruct the "experts" to ignore this impact on price and consumption. For this reason alone, we would not expect to obtain meaningful findings from this study.</p>
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3. Summary

The authors of Annex 2 do not try to look for an appropriate method to reach the aim of the study, to estimate the impact of standardised packaging on smoking uptake and quitting. They ignore well established and proven methods of marketing research (e.g. market testing) that would estimate the impact of standardised packaging. The proposed method – subjective judgments – is not suitable to generate valid and objective estimates, does not reach minimal standards of scientific research, and allows researchers and "experts" to manipulate the results.



Professor Dr. Alfred Kuss
Freie Universität Berlin, Germany

1 June 2012

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ANNEX 4

**REPORT OF JAMES J. HECKMAN
UK PLAIN PACKAGING CONSULTATION**

I. QUALIFICATIONS

1. I am the Henry Schultz Distinguished Service Professor of Economics in the Department of Economics and the Harris School of Public Policy at the University of Chicago. I also have a part-time appointment at University College Dublin. I direct the Economics Research Center at the Department of Economics at the University of Chicago, the Center for Social Program Evaluation and the Center for Early Childhood Development at the Harris School of Public Policy at the University of Chicago.

2. I specialize in the fields of Labor Economics, Applied Microeconomics and Econometrics, which is the application of statistical techniques to economic problems. In 1983, I received the John Bates Clark Medal, then awarded biannually, by the American Economic Association to the most distinguished economist under the age of 40. In 2000, I also was awarded the The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel. I am a Member of the National Academy of Sciences, a Fellow of the American Academy of Arts and Sciences, a Fellow and incoming President of the Econometric Society, a Fellow of the American Statistical Association, a Fellow of the International Statistical Institute, a Fellow of the National Academy of Education, a Fellow of the American Association for the Advancement of Science, a Fellow of the Society of Labor Economics, a resident member of the American Philosophical Society and a Senior Research Fellow of the American Bar Foundation.

3. I have published over two hundred and eighty six articles in scholarly journals and compendia. I have authored or edited eight books, with one more currently under preparation and a second under review. I currently serve as a Co-Editor of the Journal of

Political Economy, an Associate Editor of Econometric Reviews, and the Journal of Population Economics. I also served a previous term as a Co-Editor of the Journal of Political Economy. In addition, I previously have served as an Associate Editor of Evaluation Review, the Journal of Econometrics, the Journal of Labor Economics, the Review of Economic Studies and the Journal of Economic Perspectives. In addition to my academic experience, I have served as an advisor to the World Bank, the Inter-American Development Bank, the United States Department of Labor, and the Ministry of Fiscal Equity of Argentina, and government agencies in Brazil, Taiwan, South Korea, Germany, Scotland and Ireland. I serve on the boards of several foundations and chair initiatives for the study of human development. I also have presented testimony before committees of the United States Congress.

4. I have written extensively on how to model and make reliable causal inferences about "individual economic behavior" or, more plainly, human behavior, based on the scientific method. Science is a method of inquiry, intended to increase understanding of the relationships among variables – measurements of phenomena – to move us closer to understanding fundamental rather than apparent causes of outcomes of interest. If we lack understanding of causal mechanisms, for example, governments and other organizations may enact policies that fail to deal effectively with any issue of concern. Specifically, the development of effective antismoking policies requires addressing the *causes* of smoking, rather than limiting events which merely are *correlated* with smoking decisions.

5. A classic example of confusing correlated events with causal factors, and undertaking harmful actions because of this misunderstanding, comes from the Cholera Riots during the 1830s in Tsarist Russia. These riots led to the killing of doctors (as well as others) based on the observation that outbreaks of Cholera in villages were associated with the arrival

of many doctors. In other words, the correlation between the arrival of doctors in a village and Cholera outbreaks was confused with a causal relationship, and hence led to a response that did not address a causal factor for the spread of Cholera, but instead merely was an expression of a correlated event.

6. My research has focused on developing methods to draw reliable causal inferences from data, and to distinguish causal relationships from mere correlations. Establishing causality is often difficult, but it is the task taken on by scientists of all kinds interested in explanation and principled prediction – not just documentation of facts. It is a central aspect of effective policy development and evaluation.¹

7. My work on how to model and make reliable causal inferences regarding “individual economic behavior” was cited by the Nobel Committee in 2000 as their basis for awarding me The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel. Much of my research has dealt with the evaluation of social policies and other interventions that are intended to affect human behavior and the importance of recognizing and taking into account the role of personality and cognitive characteristics, which may vary widely among individuals, in attempting to estimate the effect of an intervention or change in policy on individual choices and outcomes. My research, as well as my consulting with various governments and other organizations on the evaluation and implementation of effective policies and programs, employs the same empirical evidence-based criteria described in this report.

8. My Curriculum Vitae is attached to this report as Exhibit A.

¹ I expand upon this point in Heckman, James J., 2005. “The Scientific Method of Causality,” *Sociological Methodology* 35: 1-97; Heckman, James J., 2008. “Econometric Causality,” *International Statistical Review*, International Statistical Institute, vol. 76(1), pages 1-27, 04; and Heckman, James J. and Rodrigo Pinto, 2012. “Causality After Haavelmo,” under review at *Theoretical Econometrics*.

II. WORK UNDERTAKEN

9. Counsel for Philip Morris International has asked me to assess, based on my own related research and my review of the economic and public health literature on smoking the causal factors that have been identified related to youth smoking behavior.

10. As part of my work in this matter I, and my staff under my direction, have reviewed numerous studies and articles from various academic disciplines relevant to the issues raised in this matter.

III. SUMMARY OF CONCLUSIONS

11. I have reached the following conclusions, explained in greater detail in the remainder of this report:

- (a) My research, and that of colleagues in numerous disciplines, has shown the complex nature of youth risky behaviors, including smoking.
- (b) The economics and public health literatures have extensively investigated the causes of smoking behavior. These literatures have identified multiple causal factors affecting youth smoking behavior, such as prices, parental and peer smoking, early family environments and investments in children.

IV. ASSESSMENT OF THE EVIDENCE FOR A CAUSAL RELATIONSHIP FOR YOUTH RISKY BEHAVIOR, INCLUDING SMOKING

12. In this section, I first provide a brief overview of the concept of causality and how causal relationships are empirically established.² I then review some of the findings from research on child development and youth risky behavior to provide a context for understanding the complexity of youth smoking decisions.

² These issues are discussed in my paper, "Econometric Causality," *International Statistical Review*, 76(1): 1-27 (2008), an earlier version of which was presented at a plenary session of the World Congress of the International Statistical Society in Seoul, Korea, June 2001.

A. Using a Scientific Approach to Identify Causal Factors

13. Researchers apply the scientific method to analyze issues of cause and effect. A major goal of scientific inquiry is to understand the causes or mechanisms producing the observed effects or outcomes. Once this is done, one can use empirical models to project the likely effects of different proposed causal inputs and to assess the likely quantitative effect of alternative policies that vary the causes.

14. In economics, there are well-reasoned and accepted principles underlying the application of the scientific method that are taught to students and that constitute best empirical practice among competent professionals. To make valid causal statements, researchers must have a well-specified model, grounded in objective, reliable and independently verifiable data, to determine the effect that causes have on outcomes. A well-specified model should be refutable; that is, its predictions must be amenable to testing against objective data. If a model predicts outcomes that are clearly contradicted by the available data, then the model would not be considered reliable.

15. Furthermore, in the analysis of non-experimental data, application of the scientific method requires explicit statement of the assumptions underlying the model used to produce inferences and explicit accounting for other causes that could affect these outcomes. In particular, the extent of the effects of these other potential causal factors must be measured to assess the effects of the primary factor. If the causes under investigation could be randomly administered, and one had data on the outcomes sought to be studied, and the goal is to estimate the average differential between those with and without the factor, then one could use

simpler methods to determine the causal effects.³ The absence of randomization places a stricter burden on the analyst who asserts evidence of causality.

16. A primary task in identifying causality, absent randomization, is distinguishing between events that are merely correlated from those which have causal relations. This failure to distinguish between these two distinct types of relationships represents a fundamental flaw in the literature on the effects of cigarette marketing bans, such as point of sales display bans. For example, recent research claims to identify a causal relation between point of sale display bans and reduced tobacco consumption.⁴ In particular, this research claims that exposure to tobacco products *causes* smoking. While such a relationship may exist, this recent research comes nowhere close to establishing causality in any scientifically valid way, even though advocates claim it as an established fact. A fundamental problem with this underlying research is that the studies do not adequately control for why individuals were exposed to tobacco marketing in the first place. That is, individuals who have a strong desire to smoke may act in a way that increases their exposure to tobacco marketing. Thus, the observed correlation between tobacco marketing and smoking propensity can be both driven by the same underlying factor (a desire to smoke), even if there is no causal link between tobacco marketing and smoking decisions.

17. The fallacy of attributing causality on the basis of observed correlation is readily apparent when one considers the effect of exposure to food on obesity. Specifically, consider an empirically observed correlation existed between obesity and exposure to food

³ See Heckman, James J. and Edward J. Vytlacil., 2007. "Econometric Evaluation of Social Programs, Part II: Using the Marginal Treatment Effect to Organize Alternative Econometric Estimators to Evaluate Social Programs, and to Forecast their Effects in New Environments," in J.J. Heckman and E.E. Leamer (ed.), *Handbook of Econometrics*, Edition 1, Volume 6, Chapter 71: Elsevier.

⁴ See Lund, Karl Erik, Elisabeth Kvaavik, Hans Olav Melberg, Jostein Rise, "Updated report on the knowledge base concerning the prohibition on the display of tobacco products," Memorandum from the Norwegian Institute for Alcohol and Drug Research (SIRUS) of 20 December 2010.

(those who were obese were more likely to be exposed to food). One potential explanation for such an observed relation is that the mere presence of food stimulates the appetite of people, and thus those who are most exposed to food are far more likely to be obese. However, an alternative explanation for an observed correlation between food exposure and obesity is that individuals who are obese more frequently visit grocery stores, fast food outlets and other providers of food and are thus more likely to be exposed to food. The exposure to food is not a passive condition externally imposed on the individual, but rather is caused by the same factors that cause the obesity. To develop an effective intervention to mitigate obesity, one must identify the empirical relevance of these two explanations. A primary goal of the scientific method, when applied to the study of real-world events (i.e., non-randomized data), is to empirically distinguish between simple correlations and actual causal links. The scientific method is used across numerous disciplines, is applicable to study of the issues in question in this matter, and has been applied carefully by researchers seeking to draw reliable inferences regarding causality in smoking behavior. Below I discuss certain factors that have been linked causally to youth smoking, based on a body of research utilizing the scientific method.

B. Causal Factors Identified for Youth Risky Behavior

Youth Risky Behavior is Complex and has Multiple Causes

18. Over the past decades, scholars in many disciplines, including neuroscience, psychology, sociology, health policy, and economics have extensively studied youth and adult participation in a variety of risky behaviors, including smoking. The numerous studies of youth smoking and initiation that have resulted from this research have not been able to

identify any single factor that fully explains youth smoking behavior. There is a consensus view that there are many complex and interactive influences on youth smoking.⁵

19. Researchers have found that smoking is correlated with many other risk-taking behaviors, which in turn has spurred research to develop models to explain this phenomenon.⁶ A consensus across the literatures of various disciplines supports a multi-causal view, not only of youth smoking, but also of other risky behaviors often initiated in youth, such as drinking alcohol, smoking marijuana, engaging in unprotected sex and experimenting with hard drugs. Effective policy to reduce these risky behaviors requires an understanding of the mechanisms that produce these behaviors.

20. To understand youth smoking decisions, in terms of designing programs to limit youth initiation, it helps to put smoking in the context of other risky behaviors. The results of my research suggest that prices, parents, peers, early family environments and investments in children play important roles in establishing individual capabilities that determine participation in future risky behavior. My research shows that early intervention in the lives of disadvantaged children, in particular, affects their cognitive and noncognitive

⁵ Biglan, A., Brennan, P.A., Foster, S.L., Holder, H.D., Miller, T.L., Cunningham, P.B. et al., 2004. "Helping adolescents at risk: Prevention of multiple problem behaviors," New York: Guilford; Gruber, Jonathan and Jonathan Zinman, 2001. Youth Smoking in the United States: Evidence and Implications," in *Risky Behavior Among Youths: An Economic Analysis*, J. Gruber, ed., University of Chicago Press; and National Research Council, "Informing America's Policy on Illegal Drugs: What We Don't Know Keeps Hurting Us," 2001. Committee on Data and Research for Policy on Illegal Drugs. Charles F. Manski, John V. Pepper, and Carol V. Petric, editors. Committee on Law and Justice and Committee on National Statistics. Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

⁶ See Heckman, James J., Jora Stixrud and Sergio Urzua, 2006. "The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior," *Journal of Labor Economics*, University of Chicago Press, vol. 24(3), pages 411-482.

development and also reduces their likelihood of participating in risky behaviors such as smoking.⁷

Parents, Early Childhood Environment, Investment in Children

21. My work on youth development delves deeply not only into youth smoking behavior, but also into other health and social behaviors. My current research focuses on differences in both cognitive ability (acquired knowledge, as well as the ability to solve abstract problems) and noncognitive skills (personality traits) as causal determinants of many of these unfavorable outcomes.⁸ Numerous studies have found that cognitive ability as measured by IQ or achievement tests is a good predictor of educational attainment, wages, and many other forms of economic and social success, including physical and mental health, and healthy behaviors and outcomes (including avoiding smoking, obesity, and eating fried foods).⁹ Noncognitive abilities (such as consideration and personal determination) also have direct effects on school performance and wages later in life, as well as on smoking, physical health, mental health, teen pregnancy, and participation in crime. Thus, substantial heterogeneity exists across individuals in these traits, many of which develop at very early

⁷ For example, my analysis of data from the Perry Preschool Experiment, which improved early environments of disadvantaged children (some 50 years ago), shows that interventions in early life can lead to reductions in smoking, as well as other risky behaviors, in adult life. James J. Heckman, "The Developmental Origins of Health: Models and Evidence," forthcoming, *International Journal of Epidemiology*. Heckman, James J., Lena Malofeeva, Rodrigo Pinto, Peter Savelyev, "Understanding the Mechanisms Through Which an Influential Early Childhood Program Boosted Adult Outcomes," University of Chicago, Nov. 23, 2011, forthcoming, *American Economic Review*. Heckman, James J., Seong Hyeok Moon, Rodrigo Pinto, Peter A. Savelyev, Adam Yavitz, 2010. "The Rate of Return to the High/Scope Perry Preschool Program," *Journal of Public Economics*, Volume 94, Issues 1-2, Pages 114-128.

⁸ For a survey of my work and the work of others, see Almlund, Mathilde, Angela L. Duckworth, James J. Heckman, and Timothy Kautz, 2011. "Personality Psychology and Economics," *Handbook of the Economics of Education*, Hanushek, Machin, and Woessman, eds. Amsterdam: Elsevier.

⁹ Heckman, James J., John Eric Humphries, Sergio Urzua and Gregory Veramendi, 2011. "The Effects of Educational Choices on Labor Market, Health, and Social Outcomes," IZA Working Paper.

ages and persist through adulthood. In particular, my work (as well as the work of others) finds that differences in personality traits, such as conscientiousness, perseverance, risk-aversion and self-control have direct effects on youth outcomes and behaviors, such as school performance, criminal activity, smoking propensity, teenage pregnancy, educational attainment and lifetime wages, even when differences in cognitive skills are taken into account.¹⁰

22. The empirical literature finds the following: (a) differences in ability and personality traits among individuals and across groups begin to appear at early ages and, without intervention (by parents, schools or peers), tend to persist throughout the individuals' lifetimes; (b) ability and personality traits are strongly related to family background factors, like parental ability and education, and are influenced by genetic factors; (c) child development exhibits critical and sensitive periods, so that a child's failure to acquire skills during those periods may result in permanent disadvantage; and (d) interventions designed to remediate the disadvantages arising from deprived early childhood environments can yield high returns for young children, returns are especially high if followed up at later ages.

23. Many studies demonstrate that parents play a significant role in producing both the cognitive and noncognitive skills of their children. For example, more educated women spend more time in child enrichment activities than less educated women.¹¹ On

¹⁰ See e.g., Bowles, Samuel, Herbert Gintis and Melissa Osborne, 2001. "The Determinants of Earnings: A Behavioral Approach," *Journal of Economic Literature*, 4(39): 1137-76; Heckman, James J., Jora Stixrud, and Sergio Urzua, 2006. "The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior," *Journal of Human Resources*, 24(3): 411-82; Borghans, Lex, Angela L. Duckworth, James J. Heckman, and Bas ter Weel, 2008. "The Economics and Psychology of Personality Traits," *Journal of Human Resources* 43(4): 972-1059; Almlund, Mathilde, Angela L. Duckworth, James J. Heckman, and Timothy Kautz, 2011. "Personality Psychology and Economics," *Handbook of the Economics of Education*, Hanushek, Machin, and Woessman, eds. Amsterdam: Elsevier, and Heckman, James J., John Eric Humphries, Sergio Urzua and Gregory Veramendi, 2011. "The Effects of Educational Choices on Labor Market, Health, and Social Outcomes," IZA Working Paper.

¹¹ See James J. Heckman, 2008. "Schools, Skills, And Synapses," *Economic Inquiry*, Western Economic

average, the children of more able and engaged parents have higher levels of both cognitive and noncognitive skills, which tend to persist throughout life. Conversely, less educated parents tend to spend less time with children, and consequently children born into economically less educated and disadvantaged households receive relatively less investment as children and have lower levels of both cognitive and noncognitive which also persist throughout life. In turn, the resulting differences in the skills acquired in early childhood lead to lower returns from and lower investment in further skill formation through, for example, formal schooling, as well as to other behaviors that affect social and economic outcomes.

24. In my research, I develop, along with coauthors, economic models of family and societal investments that shape the development of cognitive and noncognitive skills and physical and mental health in childhood, which, as I note above, are important predictors of a variety of economic and social outcomes.¹² The model tests whether skills acquired in one period persist and are self-productive (skills beget skills) and are cross productive (synergistic); whether productivity depends on future skill acquisition (i.e., whether skills acquired at different times are complements – “dynamic complementarity”); the extent to which investments in skills in later periods can substitute for a lack of investments in earlier periods (i.e., whether skill acquisition in different periods are substitutes); and whether a higher stock of skills at earlier stages of the life cycle raise the productivity of investments in skills at later stages. Together, self-productivity and dynamic complementarity produce

Association International, vol. 46(3). Heckman, James J. and Tim Kautz, 2012. “Hard Evidence on Soft Skills,” forthcoming *Labour Economics*.

¹² See Cunha, Flavio, and James Heckman, 2007. “The Technology of Skill Formation,” *American Economic Review*, 97(2): 3147 and Flavio Cunha, James J. Heckman, Susanne M. Schennach, 2010. “Estimating the Technology of Cognitive and Noncognitive Skill Formation,” *Econometrica*, 78(3): 883-931. See also James J. Heckman, 2008. “Schools, Skills, And Synapses,” *Economic Inquiry*, Western Economic Association International, vol. 46(3).

“multiplier effects”, through which initial skills beget more skills. This model is both flexible and produces results consistent with the empirical findings I note above.

25. My findings that differences in both cognitive and noncognitive skills are powerful predictors not only of occupational choice and wages, but also of the propensity to smoke, teenage pregnancy, health, mental health and other aspects of economic and social life are not controversial.¹³ In particular, other researchers have arrived at similar conclusions. For example, one study finds that high teacher-assessed scores on personality traits like extraversion, agreeableness and conscientiousness during elementary school predicts overall health behaviors during midlife – less smoking, more exercise and better self-rated health.¹⁴ A student’s level and growth in hostility in elementary school has been found to predict cigarette, alcohol and marijuana use in high school.¹⁵ Numerous published articles, using self-reported measures of sensation seeking, have established that this trait predicts risky driving, substance use and abuse, smoking, drinking, unprotected sex, juvenile delinquency and adult criminal behavior.¹⁶

26. My research confirms that remediation for early adversity can be effective in altering personality traits, particularly if deployed during the early childhood years, affecting a range of social and health outcomes, including smoking behavior. For example, I

¹³ Heckman, James J., Jora Stixrud and Sergio Urzua, 2006, “The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior,” *Journal of Labor Economics*, 24(3): 411-82.

¹⁴ Hampson, S.E., L.R. Goldberg, T.M. Vogt, and J.P. Dubanowski, 2007, “Mechanisms by Which Childhood Personality Traits Influence Adult Health Status: Educational Attainment and Healthy Behaviors,” *Health Psychology* 26(1): 121-125.

¹⁵ Hampson, S.E., E. Tildesley, J.A. Andrews, K. Luycks, and D.K. Mroczek. 2010, “The Relation of Change in Hostility and Sociability During Childhood to Substance Use in Mid Adolescence,” *Journal of Research in Personality* 44(1): 103-114.

¹⁶ Borghans, Lex, Angela L. Duckworth, James J. Heckman, and Bas ter Weel 2008. “The Economics and Psychology of Personality Traits,” *Journal of Human Resources* 43(4): 972-1059, at 1004, citing Zuckerman, Marvin, 1994, *Behavioral Expressions and Biosocial Bases of Sensation Seeking*, New York: Cambridge University Press.

and coauthors examine the effects of the Perry Preschool Program, which was an early childhood intervention conducted in the 1960s, targeted at disadvantaged African-American children between the ages of 3 and 4 living in Ypsilanti, Michigan, USA. We find that experimentally-induced changes in personality traits explain a significant portion of the “treatment” effects of the program.¹⁷ While the program boosted IQs for the participants for some time, the effect did not last. However, increases in achievement test scores persisted. Both socioemotional (personality traits) and cognitive factors explain performance on achievement tests. In addition to improvements on scores in achievement tests, participation in the program led to other individual and social benefits, such as reductions in crime, smoking, and negative drug/alcohol effects on participants’ lives.¹⁸

27. Evidence of significant effects of early intervention on later smoking behavior, in particular, may be seen in the results of the Perry program. Our research finds that by midlife, males are estimated to have statistically significant declines of 15% or greater in smoking behavior (including prevalence, smoked at least 100 cigarettes, smoke every day/some days).¹⁹

28. The multidisciplinary research and sound empirical evidence of significant effects of early intervention on later health and other social outcomes has served as the basis for numerous programs by various government entities, including a recent program,

¹⁷ Heckman, James J., Lena Malofeeva, Rodrigo Pinto and Peter A. Savelyev, “Understanding the Mechanisms Through Which an Influential Early Childhood Program Boosted Adult Outcomes,” University of Chicago, Nov. 23, 2011 (under revision AER).

¹⁸ Heckman, James J., Seong Hyeok Moon, Rodrigo Pinto, Peter A. Savelyev and Adam Yavitz, “The Rate of Return to the High/Scope Perry Preschool Program,” IZA Discussion Paper No. 4533 (October 2009); Heckman, James J., Seong Hyeok Moon, Rodrigo Pinto, Peter A. Savelyev and Adam Yavitz, “The Rate of Return to the High/Scope Perry Preschool Program,” NBER Working Paper 15471, November 2009; Heckman, James J. “The Developmental Origins of Health: Models and Evidence,” forthcoming, *International Journal of Epidemiology*.

¹⁹ Heckman, James J. “The Developmental Origins of Health: Models and Evidence,” forthcoming, *International Journal of Epidemiology*.

"Preparing for Life" implemented in Ireland to improve the life outcomes (including reduced smoking) of disadvantaged youth in North Dublin, Ireland.²⁰

29. This research implies that building cognitive and noncognitive traits among individuals during their early childhood development years would be an effective antismoking policy. Moreover, such a policy affects a broader range of risky behaviors than simply smoking initiation, since early childhood interventions has been shown to lead to improved educational outcomes, as well as reducing participation in other risky behaviors outside of smoking. Additionally, such interventions could have multigenerational effects, as improved educational outcomes, along with reduced participation in risky behaviors, would enrich the parental inputs that influence the cognitive and noncognitive development of the subsequent generation.²¹

²⁰ Doyle, Orla, Kelly McNamara, Carly Cheevers, Sarah Finnegan, Caitriona Logue and Louise McEntee "Preparing for Life Early Childhood Intervention Impact Evaluation Report 1: Recruitment and Baseline Characteristics," UCD Geary Institute, University College Dublin, Geary WP2010/50, October 2010, p. 1.

²¹ Heckman, James J., 2008, "Schools, Skills and Synapses," *Economic Inquiry*, 46(3): 289-324. See also Heckman, James J., Lena Malofeeva, Rodrigo Pinto and Peter A. Savelyev, "Understanding the Mechanisms Through Which an Influential Early Childhood Program Boosted Adult Outcomes," 2011, which discusses results of Perry school program. For example, my coauthors and I examine the effects of the Perry Preschool Program, which was an early childhood intervention conducted in the 1960s, targeted at disadvantaged African-American children living in Ypsilanti, Michigan, USA between the ages of 3 and 4. We find that experimentally-induced changes in personality traits explain a significant portion of the "treatment" effects of the program. Heckman, James J., Lena Malofeeva, Rodrigo Pinto, Peter A. Savelyev, "Understanding the Mechanisms Through Which an Influential Early Childhood Program Boosted Adult Outcomes," University of Chicago, Nov. 23, 2011 (forthcoming *American Economic Review*). While the program boosted IQs for the participants for some time, the effect did not last. However, increases in achievement test scores persisted. Both sociomotional (personality traits) and cognitive factors explain achievement test performance. In addition to achievement test improvements, participation in the program led to other individual and social benefits, such as reductions in crime, smoking, and negative drug/alcohol effects on various aspects of participants' lives. Heckman, James J., Seong Hyeok Moon, Rodrigo Pinto, Peter A. Savelyev and Adam Yavitz, "The Rate of Return to the High/Scope Perry Preschool Program," IZA Discussion Paper No. 4533 (October 2009); Heckman, James J., Seong Hyeok Moon, Rodrigo Pinto, Peter A. Savelyev and Adam Yavitz, 2010, "The Rate of Return to the High/Scope Perry Preschool Program," *Journal of Public Economics*, Volume 94, Issues 1-2, Pages 114-128; James J. Heckman, "The Developmental Origins of Health: Models and Evidence," forthcoming, *International Journal of Epidemiology*.

Price

30. The economics and public health literatures have extensively investigated smoking behavior and potential causes of this behavior, and identified several significant causal factors for youth smoking behavior, such as price, parental and peer smoking.^{22 23} A key finding in the research literature on smoking is that increases in the health or direct money costs of smoking (either through dissemination of new significant information on smoking risks or monetary price increases) lead to declines in smoking propensities.

31. A number of studies have estimated the effect of the direct monetary price of cigarettes on cigarette demand. The literature on this topic is fairly extensive, with the focus, methodology and specific estimates varying among individual studies. Many studies have investigated the effect of money price on smoking demand, analyzing aggregate time series data, pooled cross-section time series data, and individual level data.²⁴ Many of these also have examined the responsiveness of consumer demand for smoking to changes in the "full-cost" of smoking, which includes not only money price, but also restrictions on access, restrictions on use, and the impact of future consequences, such as long-term health effects.

32. Representative of some of the findings in this literature are the following studies. Farrelly et al. (2004)²⁵ find that smokers reduce the number of cigarettes smoked in

²² Heckman, James J., Flyer, Fredrick and Loughlin, Colleen P., 2008. "An Assessment of Causal Inference in Smoking Initiation Research and a Framework for Future Research," *Economic Inquiry*, Vol. 46, Issue 1, pages 37-44.

²³ While there has been investigation of other factors that some believe may cause smoking, such as advertising, the evidence I have reviewed to date does not support a causal relationship between advertising and youth smoking. Thus, I do not discuss this literature in this report.

²⁴ Chaloupka, F.J. and Warner, K.E., 2000. "The Economics of Smoking," in Culyer A.J, Newhouse J.P, eds. *Handbook of Health Economics*, v. 1B. Amsterdam: Elsevier. See also Gruber and Zinman, op cit.

²⁵ Farrelly, Nimsch, Hyland and Cummings, 2004. "The effects of higher cigarette prices on tar and nicotine consumption in a cohort of adult smokers," *Health Economics*, 13: 49-58.

response to a price increase. Lewit and Coate (1982)²⁶ find that smoking by young adults (ages 20 through 24) is much more responsive to price than smoking by older adults. Similarly, Lewit, Coate and Grossman (1981)²⁷ find that smoking propensities for adolescents (ages 12 through 17) decline with increases in cigarette prices, and that adolescent cigarette consumption is more sensitive to price than aggregate demand for other age groups. Economists have not only found that the demand for cigarettes is sensitive to current money prices, but also to anticipated future prices.²⁸ In summary, the relationship between price and quantity demanded of cigarettes has been studied extensively and estimated in numerous ways (e.g. over time, for youth and adults, for various brands, in many countries). Given the robustness of the findings, price may be considered a causal factor influencing youth smoking behavior.

Peers and Parental Smoking

33. A number of studies have found a positive correlation between peer and parental smoking and adolescent smoking.²⁹ For example, one study finds that children living in a single mother household are far more likely to smoke if their mother smokes.³⁰ Identifying the specific mechanisms for these influences, and evaluating the importance of these various

²⁶ Lewit and Coate, 1982. "Potential for Using Taxes to Reduce Smoking," *Journal Health Econ.* 2, 23 121-145.

²⁷ Lewit, Coate and Grossman, 1981. "The Effects of Government Regulation on Teenage Smoking," 24 *Journal of Law and Economics*, pages 545-569.

²⁸ See, for example, Becker, et al., 1994. "An Empirical Analysis of Cigarette Addiction," *American Economic Review*, Vol. 84, No. 3, 396-418 and Laporte et al., 2010. "Quantile Regression Analysis of the Rational Addiction Model: Investigating Heterogeneity in Forward-Looking Behavior," *Health Economics*, 19:1063-1074.

²⁹ See, for example, Bauman, K. and Ennett, S., 1996. "On the importance of peer influence for adolescent drug use: commonly neglected considerations," *Addiction*, 91, pages 185-198.

³⁰ Loureiro, Maria, Anna Sanz-de-Galindo and Daniela Vuri, 2010. "Smoking Habits: Like Father, Like Son, Like Mother, Like Daughter?," *Oxford Bulletin of Economics and Statistics*, 72(6): 717-746.

social factors is the subject of continuing research.³¹ However, assessing the importance of various potential causal factors is often a difficult empirical task. First, the smoking decision is complex, as many factors may influence ultimate behavioral decisions. Thus peer or parental smoking may influence adolescent smoking; however other factors also may be present to mitigate such effects, such as close parental monitoring and disapproval of smoking, or positive family environment. The complexity and potential importance of these social environmental factors is indicated by research that has found poor parental monitoring, as well as association with peers engaged in risky behaviors, to be associated with youth engagement in a range of risky behaviors.³²

34. Second, assessing the effects of these environmental factors, such as peer influence, on youth smoking behavior requires accounting for the choice of these environmental factors. In other words, to evaluate the effects of peers on youth smoking decisions requires identifying whether youth smokers choose friends to reinforce their smoking decision or whether these smokers being influenced to initiate by their peer group. Ultimately, both effects may be at work, therefore, identifying the influence of peer groups amounts to much more than assessing whether youth smokers have peer groups that also smoke. Given these complexities, questions arise as to whether the choice of and influence of peer and social networks on smoking initiation decisions has been adequately taken in to account in modeling of youth smoking initiation.

³¹ Hein de Vries, Rutger Engels, Stef Kremers, Joyce Wetzels and Aart Mudde, 2003. "Parents' and friends' smoking status as predictors of smoking onset: findings from six European countries," *Health Education Research*, Volume 18, Issue 5, pages 627-636.

³² Metzler, C. W., Noell, J., Biglan, A., Ary, D., and Smolkowski, K., 1994. "The social context for risky sexual behavior among adolescents." *Journal of Behavioral Medicine*, 17(4), 419-438; Dennis V. Ary, Terry E. Duncan, Susan C. Duncan, Hyman Hops, 1999. "Adolescent problem behavior: the influence of parents and peers," *Behaviour Research and Therapy* 37, pages 217- 230.

35. The reasons for observed youth participation in peer groups or social networks are varied. For example, youth may choose peer groups with like interests (e.g., playing football, drinking alcohol, doing drugs, playing music, participating on a swim team). Youth may become part of peer groups that may not reflect their interests, but they may be limited in social options in their community (e.g., small towns, geographically isolated, gang territory). That is, peer groups effectively may be chosen for them. In addition, youth may have several peer groups or social networks that may exert differential influences on an individual. In addition, some researchers have suggested that the probability of engaging in a particular activity increases with the prevalence of that activity in an individual's environment. For example, Powell et al. (2005) find that the probability of smoking increases an estimated 14.5 % when a high school student moves from a school with no smokers to one with one quarter of the student population smoking.³³

36. Thus modeling and assessing the causal relationship between peers and youth smoking behavior may depend on the quality and extent of information about individuals in samples. Families and individuals may sort themselves into particular neighborhoods, schools or groups, for example, such that unobserved characteristics of individuals, families and peer groups are correlated and thus estimates of peer effects may be biased, if not properly modeled.

37. To account for these complexities, researchers over the past few decades have developed new empirical methodologies to address issues of endogeneity and multiple social environmental factors. This body of research calls for sophisticated econometric

³³ Powell, Lisa M., John A. Tauras, and Hana Ross (2005) "The importance of peer effects, cigarette prices and tobacco control policies for youth smoking behavior," *Journal of Health Economics*, vol. 24, issue 5, pages 950-968. Note, however, that the choice of school may reflect parental preferences and behaviors which may in turn affect child smoking decisions.

modeling to develop reliable empirical inferences. For example, in a recent review of this literature, Weihua An (2011) recommends using "dynamic data analysis techniques (e.g., fixed effects models) to model the co-evolution of network and behavior and to control for confounding and selection. ... [along with] statistical techniques like instrumental variables, 2SLS, or system of equations to account for simultaneity"³⁴ See also the work of Brock, Durlauf, Blume and Ioannides in the *Handbook of Social Economics*, 2011.³⁵

38. The empirical techniques used to assess the effects of social environmental factors on adolescent decisions extend well beyond initiation of smoking. Researchers have also found that parental and peer influences potentially explain many other adolescent behavioral decisions. For example, Biglan (1995) studied both smoking behavior of peers and parents, as well as other social contexts that may affect youth smoking behavior and he finds that youth smokers also engage in other risky behavior, namely:

"The results confirm previous studies showing that smoking is associated with engagement in numerous other problem behaviors. Moreover, they suggest the relevance of general parenting practices and associations with deviant peers for the development of smoking. Even when specific parental and peer smoking practices are included in the model, inadequate parental monitoring and association with deviant peers account for significant variance in adolescent smoking 6 months later. The findings are consistent with models of the role of parenting and peer influences on general problem behavior (Ary et al., 1994), antisocial behavior (Patterson et al., 1992), drug abuse (Dishion et al., 1991; Dishion and Loeber, 1985; Dishion and Ray, 1991; Hawkins et al., 1992), and high-risk sexual behavior (Biglan et al., 1990; Metzler et al., 1994).

Taken together, the evidence indicates that the prevention of diverse problems of youth would be facilitated by altering problematic family relationships and preventing the formation of deviant peer groups. The present model indicates that

³⁴ An, Weihua, 2011. "Models and Methods to Identify Peer Effects," pages 514-532 in *The Sage Handbook of Social Network Analysis*, edited by John Scott and Peter J. Carrington. London: The Sage Publications.

³⁵ Blume, Lawrence E., William A. Brock, Steven N. Durlauf, and Yannis M. Ioannides, 2011. "Identification of Social Interactions," in Jess Benhabib, Matthew O. Jackson and Alberto Bisin editors: *Handbook of Social Economics*, Vol. 1B, The Netherlands: North-Holland, pp. 853-964.

family conflict and lack of parental involvement with their children are risk factors for inadequate parental monitoring. If monitoring is inadequate, young people are more likely to associate with deviant peers and are more likely to smoke. The model implies that preventing family conflict, fostering family involvement, and encouraging parental monitoring could contribute to the prevention of youth smoking. Given that poor monitoring was still a predictor of smoking when parents' own smoking was included in the model, the results suggest that parental monitoring will influence adolescent smoking development, even if the influence of parental smoking is in some way eliminated."³⁶

39. Researchers have not only studied peer group formation and group behavior, but also how to influence youth behavior through exogenous actions directed toward peer groups or social networks. One of the results of this work has been development and testing of strategies to target peer group leaders to drive a multiplier effect of desired policies.³⁷

40. The implication of this work for youth smoking initiation research is the following. If we observe an adolescent smoking, and peers in one social network to which the youth belongs also smoke, it is difficult to tell, without additional information, if the peer group caused an otherwise non-smoking youth to smoke, or if the youth started smoking because of interest in smoking and chose to associate with smoking peers. If the youth started smoking due to interest in smoking, questions for policymakers are what drives this interest and what policy actions would be effective in reducing this interest. Some have argued that tobacco company advertising is a causal factor in youth smoking initiation. However, from

³⁶ Biglan, Anthony, Terry F. Duncan, Dennis V. Ary, and Keith Smolkowski, 1995. "Peer and Parental Influences on Adolescent Tobacco Use," *Journal of Behavioral Medicine*, Vol. 18, No. 4, p. 327.

³⁷ See, for example, Brock, William A. and Steven N. Durlauf, "Adoption Curves and Social Interactions," 2010, *Journal of the European Economic Association*, 8(1): 232-251, Cutler, David M., Edward L. Glaeser, 2010. "Social Interactions and Smoking," in David A. Wise, editor, "Research Findings in the Economics of Aging," University of Chicago Press.

my review of the literature examining this relationship, I find a lack of reliable evidence of tobacco company advertising as a causal factor in youth smoking initiation.³⁸

41. The influence of peers and parents may also be used effectively in the context of intervention programs designed to limit adolescent usage of risky substances. In particular, researchers through a randomized study design found evidence indicating that community-wide intervention programs that reinforced school-based prevention programs, including activities such as family communications about substance use, lowered teen usage of alcohol, marijuana and tobacco products.³⁹ These results suggest that incorporating social environmental factors into school-based programs can increase the preventive effects of these programs.

Conclusion

42. In sum, my research and that of my colleagues in numerous disciplines reveals the complex nature of the origins of youth risky behavior, including smoking. Rigorous empirical research on youth risky behavior supports findings of causal factors affecting youth smoking behavior including prices, peers (social networks), parents, early family environments and investments in children. However, these causal factors have only been identified through careful empirical modeling and robust findings that have been developed (and reinforced) on many different data sets through multiple research efforts.

³⁸ Heckman, James J., Flyer, Fredrick and Loughlin, Colleen P., 2008. "An Assessment of Causal Inference in Smoking Initiation Research and a Framework for Future Research," *Economic Inquiry*, Vol. 46, Issue 1, pp. 37-44.

³⁹ Biglan, Anthony, Dennis V. Ary, Keith Smolkowski, Terry Duncan and Carol Black, 2000. "A randomised controlled trial of a community intervention to prevent adolescent tobacco use," *Tobacco Control*, 9:24-32.

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 Honorary Professor, Wuhan University, Wuhan, China, 2003.
 Doctor Honoris Causis, UAEM, Mexico, January 2003.
 Doctor Honoris Causis, University of Chile, Fall 2002.
 Honorary Doctor of Laws, Colorado College, 2001.
 Honorary Professor, Huazhong University of Science and Technology, Wuhan, China, 2001.
 Honorary Member, Latin and Caribbean Economic Association, 1999.
 Honorary Professor, University of Tucuman, October, 1998.

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Bank of Sweden Prize in Economic Sciences in Honor of the Memory of Alfred Nobel, 2000.
 John Bates Clark Medal (American Economics Association), 1983.
 Distinguished Contributions to Public Policy for Children Award, Society for Research in Child Development, 2009.
 Gold Medal of the President of the Italian Republic, Awarded by the International Scientific Committee of the Pio Manzù Centre, 2008.
 Theodore W. Schultz Award, American Agricultural Economics Association Foundation, January 2007.
 Dennis J. Aigner Award for Applied Econometrics, *Journal of Econometrics*, 2007.
 Sun Yefang Economic Science Award, 2007.
 Ulysses Medal, University College Dublin, 2006.
 Jacob Mincer Award for Lifetime Achievement, Society of Labor Economics, 2005.
 Dennis J. Aigner Award for Applied Econometrics, *Journal of Econometrics*, 2005.
 Medal of Excellence, Centres of Excellence for Children's Well-Being, Montreal University, "Exceptional Contributions to Childhood Development", May 2004.
 Statistician of the Year, Chicago Chapter of the American Statistical Association, 2002.
 First Annual Louis T. Benezet Distinguished Alumnus Award, Colorado College, 1985.
 Elevated to Distinguished Service Professorship, University of Chicago, 1995–.
 A. Whitney Griswold Professor of Economics, Yale University, 1988–1990.
 Henry Schultz Professor of Economics, University of Chicago, 1985–.
 Irving Fisher Professor, Yale University, Fall 1984.

Fellowships

Fellow, Econometric Society, 1980
Fellow, American Academy of Arts and Sciences, 1985
Senior Research Fellow, American Bar Foundation, 1991
Elected Member, National Academy of Sciences, 1992
Fellow, American Statistical Association, 2001
Fellow, *Journal of Econometrics*, 2005
Fellow, Society of Labor Economics, 2004
Resident Member, American Philosophical Society, 2008
Fellow, International Statistical Institute, 2008
Fellow, American Association for the Advancement of Science, 2009
Lifetime Member, Irish Economic Association, 2009
Member, National Academy of Education, 2010
Corresponding Member, Brazilian Academy of Sciences, 2011

Post Graduate Support for Released Time

John Simon Guggenheim Memorial Fellowship, 1978–1979.
Fellow, Center for Advanced Study in the Behavioral Sciences, Stanford University, 1978–1979.
Social Science Research Council Training Fellow, 1977–78.
Harry Scherman Fellow, National Bureau of Economic Research, 1972–1973.

Professional Experience

University of Chicago

Henry Schultz Distinguished Service Professor, 1995–
Henry Schultz Professor, 1985–1995
Professor of Economics, 1977–
Associate Professor, 1973–1977 (tenured, 1974)
Professor, Irving B. Harris School of Public Policy, 2011–
Affiliated Faculty, Irving B. Harris School of Public Policy, 1990–2011
Director, Center for Social Program Evaluation, Harris School of Public Policy 1991–
Professor of Law, University of Chicago School of Law, 2011–
Director, Economics Research Center

University College Dublin

Professor of Science and Society, 2005–

American Bar Foundation

Senior Research Fellow, 1991–

Yale University

Alfred Cowles Distinguished Visiting Professor, Cowles Foundation, 2008–

A. Whitney Griswold Professor of Economics, 1988–1990

Professor of Statistics, 1990

Yale Law School Lecturer, 1989–1990

National Bureau of Economic Research

Associate, 1971–1985, 1987–

Research Fellow, 1972–1973

Peking University

Changjiang River Scholar Professor, 2004–2008

University College London

Distinguished Chair of Microeconometrics, 2004–2008

National Opinion Research Center

Research Associate, 1979

RAND Corporation

Consultant 1975–1976

Columbia University

Associate Professor 1973–1974

Assistant Professor, 1970–1973

New York University

Adjunct Assistant Professor, 1972

Council of Economic Advisors

Junior Economist Advisors, 1967

Previous Positions

Martin-Marietta Aerospace Systems Engineer, 1965

Other Professional Activities

1. Director, Human Capital and Economic Opportunity Working Group (Sponsored by the Institute for New Economic Thinking)
2. Director, Economic Research Center, Department of Economics, University of Chicago
3. Director, Center for the Study of Childhood Development, Harris School of Public Policy, University of Chicago
4. Director, Center for Social Program Evaluation, Harris School of Public Policy, University of Chicago
5. Member, Research Council, Becker-Friedman Institute for Research in Economics, 2011–2014
6. Member, Advisory Committee of the China Institute of Income Distribution Studies, Beijing Normal University, 2011–
7. President, The Econometric Society, 2013 (Cycle: Second Vice-President, 2010–2011; First Vice-President, 2011–2012; President, 2013)
8. Member, 1997 National Longitudinal Survey of Youth Advisory Panel, NORC, 2008–
9. *IZA Journal of Labor Economics*, Associate Editor, 2012–
10. *Journal of Political Economy*, Editor, 2011–
11. *Annual Review in Economics*, Editor, 2007–
12. Member, International Statistical Institute, 2007—
13. Advisory Board, *Journal of Applied Econometrics*, 2007–2013
14. President, Western Economics Association 2003 (Cycle: VP (2003–2004), President Elect (2004–2005), President (2005–2006))
15. Council, Econometric Society, 2000–2006
16. President, Midwest Economics Association, 1998.
17. *Econometrics Reviews*, Co-Editor; Associate Editor, 1987–
18. *Handbook of Econometrics* Vol. 5, Co-Editor with Ed Leamer
19. *Handbook of Econometrics* Vol. 6A, Co-Editor with Ed Leamer
20. *Handbook of Econometrics* Vol. 6B, Co-Editor with Ed Leamer

21. American Economics Association, Executive Committee Member, 2000–2003
22. Science, Technology and Economic Policy Board, National Research Council, Member 2000–
23. *Evaluation Review*, Associate Editor, 1991–1996
24. *Journal of Economic Perspectives*, Associate Editor, 1989–1996
25. *Review of Economics and Statistics*, Associate Editor, 1994–2002
26. Member, Advisory Board and Dean's Search Committee, School of Public Policy, University of Chicago, 1985–1988
27. Member, National Academy of Sciences Panel on the Status of Black Americans, 1985–1988
28. *Journal of Labor Economics*, Associate Editor, 1982–
29. Member, National Academy of Sciences Panel On Statistical Assessments as Evidence in the Courts, 1982–1985
30. *Review of Economic Studies*, Associate Editor, 1982–1985
31. *Journal of Political Economy*, Co-Editor, 1981–1987
32. Member, Board of Overseers, Michigan Panel Survey of Income Dynamics, 1981–1984
33. *Journal of Econometrics*, Editor of the Special Issue on Panel Data, 1981
34. Member, Advisory Board Chicago Urban League, 1980–1987
35. Academic Press Editor of Labor Economics Series, 1980–1984
36. *Journal of Econometrics*, Associate Editor, 1977–1983
37. National Science Foundation Evaluation Panel in Economics - Member, 1977–1979
38. London School of Economics, Visitor, Spring 1977, Center for Research on the Economics of Education
39. University of Wisconsin Institute for Research on Poverty, Visiting Professor, Fall 1977
40. *Annals of Economics*, Editor of special issue on the Social Measurement Analysis of Discrete Data, 1976
41. Social Science Council Research Committee on Research Methods for Longitudinal Data, 1976–1979, 1981–1982

Major Invited Lectures

1. "Hard Evidence on Soft Skills," Robert (Bob) J. Lampman Memorial Lecture, Institute for Research on Poverty (IRP) at the University of Wisconsin-Madison, Madison, WI. May 16, 2012.
2. "A Framework for Analyzing Human Development over the Life Cycle and across Generations," Presented at the TrygFonden symposium "Improving the Well-Being of Children and Youth," The Carlsberg Academy, Copenhagen. January 29th, 2012.
3. "The Case for Investing in Disadvantaged Young Children," Remarks at the White House Conference on "Race to the Top - Early Learning Challenge Awards Announcement," Washington DC. December 16th, 2011.
4. "Hard Evidence on Soft Skills," The Development Economics Vice Presidency (DEC) Lecture, World Bank, Washington DC. December 15, 2011.
5. "The Developmental Origins of Health: Models and Evidence," Stephen Frankel Lecture, University of Bristol, November 16, 2011.
6. "Hard Evidence on Soft Skills," Adam Smith Lecture, 23rd Annual Conference, European Association of Labour Economists, Paphos, Cyprus, September 24, 2011.
7. "Understanding the Mechanisms Through Which an Influential Early Childhood Program Boosted Adult Outcomes," Asian Meeting of the Econometric Society, Seoul, Korea, August 12, 2011.
8. "Marschak's Maxim," Marschak Memorial Lecture, UCLA Anderson School of Management, June 3, 2011.
9. "The Economics and Psychology of Human Development and Inequality," and "The Economics and Psychology of Human Development and Inequality Lecture II: Understanding the Origins of Inequality and Understanding Effective Interventions and the Channels Through Which They Work," Marshall Lectures, University of Cambridge, Cambridge, UK. May 17-18, 2011.
10. "The Developmental Origins of Inequality: Implications for Social Policy," Manchot Lecture, University of Bonn, Bonn, Germany. January 28, 2011.
11. "Understanding the Origins of Inequality," Invited Keynote speaker, First Annual MOVE Distinguished Visitor's Lecture, December 21, 2010, Barcelona, Spain.
12. "Building Bridges Between Structural and Program Evaluation Approaches to Evaluating Policy," Keynote Lecture, Italian Statistical Society Scientific Meeting, Padua, Italy, June 16, 2010.
13. "Estimating the Technology of Cognitive and Noncognitive Skill Formation," Keynote Lecture, Understanding Ageing: Health, Wealth, and Wellbeing to Age Fifty and Beyond, St. Catherine's College Oxford, UK. April 14-16, 2010.

14. "Understanding the Sources of and Solutions to Human Inequality," Keynote Lecture, Meeting on Early Childhood Education, Rio de Janeiro, Brazil. December 17, 2009.
15. "The Developmental Origins of Adult Health: Cognition, Personality, and Education," 6th Annual Nestlé International Nutrition Symposium, Lausanne, Switzerland. October 22, 2009.
16. "Policies to Promote Growth in Mexico," Bank of Mexico. October 19, 2009.
17. "Policies to Foster Human Development," Developing Africa: an Opportunity for Europe, Italy and Sicily; Taormina, Italy. October 1, 2009.
18. "Investing in our Young People: Lessons from Economics and Psychology," Lectio Magistralis, Catholic University Milan. September 28, 2009.
19. "Estimating the Technology of Cognitive and Noncognitive Skill Formation," Plenary Lecture, Econometric Society. June 6, 2009.
20. "Estimating the Technology of Cognitive and Noncognitive Skill Formation," Vilfredo Pareto Lectures in Economics and Social Sciences, Collegio Carlo Alberto. June 9, 2009.
21. "The Economics and Psychology of Personality," Identity and the Global Crisis: Festival of the Economy, Trento, Italy. May 29, 2009.
22. DEW/ESR Guest Lecture, "The Economics and Psychology of Personality," Irish Economic Association 23rd Annual Conference, Blarney, County Cork, Ireland. April 26, 2009.
23. "The Economics and Psychology of Inequality and Human Development," The Jacob Marschak Interdisciplinary Colloquium on Mathematics in the Behavior Sciences at UCLA. October 6, 2008.
24. "The Economics and Psychology of Inequality and Human Development," Marshall Lecture, European Economics Association, Milan, Italy. August 29, 2008.
25. "How Viable is the Welfare State?" World Justice Forum, Vienna, Austria. July, 2008.
26. "The Option Value of Educational Choices and the Rate of Return to Educational Choices," Cowles Foundation Structural Conference, Yale University. June 13, 2008.
27. "Skills, Schools and Synapses," Coping with the Accident of Birth: The Case for Early Childhood Interventions. Den Haag, Netherlands. May 27, 2008.
28. "Noncognitive Skills: Acquisition and Economic Consequences," Plenary Lecture, Leibniz Network Conference, Mannheim, Germany. May 15, 2008.
29. "Understanding the GED," Albert Rees Memorial Lecture, Society of Labor Economists Annual Meetings, May 9, 2008.
30. "How Viable is the Welfare State?" and "The Technology of Skill Formation," King Saud University Lecture, Riyadh, Saudi Arabia. March 8-10, 2008.

31. Congress on Early Childhood Education: "Early Childhood Education-Educational Investments with Better Effects", "The Dynamism of Educational Investments in the Course of Life: Why Saving in Education is Expensive." Leipzig, Germany. March, 2008.
32. "The Economics of Investing in Children: The Role of Cognitive and Non-Cognitive Skills," George Seltzer Distinguished Memorial Lecture, Minneapolis, Minnesota, December 6, 2007.
33. "The Economics of Investing in Children: The Role of Cognitive and Non-Cognitive Skills," Bertha C. and Roy E. Leigh Distinguished Lecture in Economics, Pullman, Washington, November 29, 2007.
34. "The Technology of Skill Formation," Guinness Lecture, Coombe Women's Hospital, Dublin, Ireland, November 2, 2007.
35. "The Technology of Building Human Capacities: Lessons for Public Policy," Building Blocks Conference, Alberta, Canada, May 2007.
36. Keynote Address, "Investing in Disadvantaged Young Children Is Good Economics and Good Public Policy," National Summit on America's Children, Congressional Caucus, Washington D.C., May 2007.
37. "The Economics, Technology and Neuroscience of Human Capability Formation," Allostasis/Allostatic Load Conference, Princeton University, May 2007.
38. "Left Behind: the GED and America's Dropout Problem," Brookings Institution, Hamilton Project Forum: The Role of Education in Promoting Opportunity and Economic Growth, Washington D.C., March 2007.
39. Plenary Address, "The Evolution of Labor Earnings Risk in the U.S. Economy," 4th International Finance Conference in Collaboration with Université Cergy-Pontoise, REMEREG and ISC Paris, Diar el Medina, Tunisia, March 2007.
40. Theodore W. Schultz Lecture, "The New Economics of Child Quality," American Economic Association, January 2007.
41. Keynote Address, "What Lessons Should China Learn from European Welfare States?" WEAI Pacific Rim Conference, Beijing, China, January 2007.
42. Max Weber Lecture, "The Economics of Human Development," European University, Florence, Italy, October 2006.
43. Koopmans Lectures, "Cowles Commission Structural Models, Causal Effects and Treatment Effects: A Synthesis," "Instrumental Variables: Then and Now," and "The Evolution of Labor Earnings Risk in the US Economy," Cowles Foundation, Yale University, September 2006.
44. Marshall Lecture, Annual Meeting of the European Economic Association. August, 2006.

45. Michelson Memorial Lecture, "Skills, Schools and Synapses," US Naval Academy, September 2006.
46. Conway Institute Lecture, "The Technology and Neuroscience of Skill Formation," University College Dublin, June 2006.
47. Ulysses Medal Lecture, "The Economics of Child Development," University College Dublin, June 2006.
48. Invited Lecture, "Understanding Instrumental Variables in Models with Essential Heterogeneity," "Econometric Evaluation of Public Policies : Methods and Applications" Conference, Center for Research in Economics and Statistics, Paris, December 2005.
49. Inaugural Lecture, "Credit Constraints, Family Constraints and Optimal Policies to Reduce Inequality and Promote Productivity," Geary Institute, University College Dublin, April 2005.
50. Richard Ely Distinguished Lecturer, Johns Hopkins University, April 2005. Talks: "Inequality in America: What Role for Human Capital Policies?" "Understanding Inequality: Separating Uncertainty from Heterogeneity in Life Cycle Earnings," "Match Bias and Economic Returns to the GED," "Understanding Instrumental Variables in Models with Essential Heterogeneity," "The Importance of Cognitive and Noncognitive Skills in Explaining a Variety of Socioeconomic Outcome Measures"
51. Hicks Lecture, Oxford University, April 2004.
52. Keynote Lecture, Great Hall of the People, Beijing, December 2003 (Major Lecture on China's Investment in Human Capital at Renmin University's Anniversary Celebration).
53. Nobel Symposium Lecturer, St. Petersburg, Russia, June 2003.
54. Munich Economic Summit, Munich, May 2003.
55. European Society for Population Economics, 2003.
56. Keynote Lecture, Tinbergen Centenary, Rotterdam, April 2003.
57. W.P. Carey Lecture, Colorado College, February 2002.
58. Miguel Sidrauski Lecture, Latin American Econometric Society Meetings, Sao Paulo, 2002.
59. Tinbergen Lecture, Royal Dutch Economics Association, October 2002.
60. Walras-Pareto Lectures, University of Lausanne, October 2002.
61. Gorman Lectures, University College, London, Fall 2001.
62. Klein Lecture, University of Pennsylvania, October 2001.
63. Review of Economics and Statistics Lecture, April 2001.
64. Economic Journal Lecture, Royal Economic Society, April 2001.
65. Jovanovich Lecture, Colorado College, February 2001.
66. Distinguished Lecture, Southern Economics Association, Washington, D.C., November 2000.
67. Fisher-Schultz Lecture, World Meeting of the Econometric Society, August 2000.

68. Yoram Ben Porath Memorial Lecture, Hebrew University, (First in series), June 2000.
69. Wildavsky Forum Lecture, University of California, Berkeley, April 1999.
70. Woytinsky Lecture, University of Michigan, October 1999.
71. Invited Lecture, Latin American Meetings of the Econometric Society, Cancun, Mexico, August 1999.
72. Invited lecturer, Econometric Society Meetings, Lima, Peru, August 1998.
73. Distinguished Lecture, Institute for Survey Research, University of Michigan, January 1998.
74. McKinley Lecturer, University of Illinois, March 1998.
75. Fishelson Memorial Lecture, Tel Aviv University, December 1998.
76. Malim Harding Lecturer, University of Toronto, October 1997.
77. Jacob Marschak Lecturer, Far Eastern Econometric Society Meetings, Hong Kong, July 25, 1997.
78. Economics Study Group, Gronigen, Holland, June 1997.
79. Invited Lecture, Latin American Econometric Society Meetings, Santiago, Chile, August 1997.
80. *Journal of Applied Econometrics* Lectures (First Lecturer in a new series established by the *Journal of Applied Econometrics*, Yale University, April 17-18, 1997).
81. Keynote Lecture, Latin American Econometric Society, Santiago Chile, August 1997.
82. Keynote Lecture, Society For Economic Dynamics and Control, Mexico City, June 27, 1996.
83. Keynote Lecture, Latin American Econometric Society, Rio de Janeiro, August 1996.
84. Keynote Speaker, American Sociological Association Meetings, New York, August 16, 1996.
85. Gilbert Lecture, University of Rochester, April 1996.
86. Seymour Harris Lectures, Kennedy School of Government, 1995. (First lecturer in a newly endowed series) Lectures to be published by Harvard University Press.
87. Distinguished Quantitative Social Science Lecture, University of Indiana, April 1996.
88. Invited Lecture, Centenary of Ragnar Frisch, First Nobel Economist, Oslo, March 1995.
89. Invited Lecture, Public Policy School, SUNY Albany, October 1994.
90. Invited Lecture, Latin American Econometric Society, Caracas, August 1994.
91. Aloysius Dunaway Memorial Lecture, Michigan State University, April 1993.
92. Carl Synder Memorial Lecture, University of California at Santa Barbara, Spring 1992.
93. H. Chase-Stone Lecture in Economics, Colorado College, 1992 (participant in three day symposium).
94. Martin Luther King Lecturer, University of Michigan, 1991.

95. Invited Lecture, Econometric Study Group, Royal Economic Society, Bristol, England, 1991.
96. Barcelona Lecture, Sixth World Econometric Society, 1990.
97. Erik Malmstens Distinguished Guest Professor of Economics, Gothenburg University, Gothenburg, Sweden, 1990.
98. Invited Major Lecture, University of Western Ontario, 1989.
99. Invited Major Guest Lecture, Joint Franco-Belgian Conference in Statistics, Toulouse, France, 1988.
100. Chung-Hua Distinguished Visitor and Academica Sinica Lectures, Taiwan, 1988.
101. Fish Lecture, Brigham Young University, 1987.
102. Harry Lyman Hooker Distinguished Visiting Professor, McMaster University, 1987.
103. Leif Johansen Lecture, University of Oslo, 1986.
104. Abbott Lecturer, Colorado College, 1985.
105. Major Lecture, Australasian Econometric Society, Sydney, Australia, 1984.

Students (Chair or co-chair of committee)

There are numerous other dissertations where I have served as a second reader, but not as chair or co-chair.

University of Chicago unless otherwise noted.

1. John Abowd
2. Ricardo Avelino
3. Alessandro Barbarino
4. Ricardo Barros
5. Herbert Baum
6. Andrea Beller (Columbia)
7. Christina Bellido
8. George Borjas (Columbia)
9. Stephen Cameron
10. Pedro Carneiro
11. Thomas Coleman
12. Robert Cotterman
13. Flavio Cunha
14. Marcello Dabos

15. Felipe Diniz
16. Christopher Flinn
17. Christina Gathmann
18. Eric Gould
19. Carolyn Heinrich (Harris School, University of Chicago)
20. Bo Honoré
21. Anjini Kochar
22. Siu Fei Leung
23. Martin Ljungc
24. Lance Lochner
25. Thomas MaCurdy
26. Grecia Maruffo
27. Mauricio Mazocco
28. Robert Miller
29. Salvador Navarro
30. Randall Olsen
31. Larry Olson
32. Brook Payner
33. Carola Pessino
34. Heleno Pioner
35. Richard Robb
36. Russell Roberts
37. Rebecca Roselius
38. Mark Rosenzweig (Columbia)
39. Anne Royalty (Yale)
40. Daniel Santos
41. Peter Savelyev
42. Robert Schmitz
43. Peter Schochet (Yale)
44. Sam Schulhofer-Wohl
45. Jeff Smith
46. Rachel Soloveichik

47. Jora Stixrud
48. Suchanan Tambunlertchai
49. Chris Taber
50. Andrea Tiseno
51. Justin Tobias
52. Petra Todd
53. Grace Tsiang
54. Sergio Urzua
55. J. H. Verkerke (Yale)
56. Edward Vytlačil
57. Jim Walker

Publications

Books

- Longitudinal Analysis of Labor Market Data*, (edited with Burton Singer). Cambridge: Cambridge University Press, 1985.
- Handbook of Econometrics*, Vol 5 (edited with E. L. Leamer). New York: North-Holland, 2001.
- Inequality in America: What Role for Human Capital Policy?*. J. Heckman and A. Krueger, eds., Cambridge, MA: MIT Press, 2003.
- Law and Employment: Lessons From Latin America and the Caribbean* (edited with C. Pages). University of Chicago Press, for NBER, 2004.
- Handbook of Econometrics*, Vol 6A (edited with E. L. Leamer). Amsterdam: North-Holland, 2007.
- Handbook of Econometrics*, Vol 6B (edited with E. L. Leamer). Amsterdam: North-Holland, 2007.
- Global Perspectives on the Rule of Law*, (edited with R. Nelson and L. Cabatingan). New York: Routledge, 2010.
- Studies of the GED Testing Program*, (edited with J.E. Humphries, T. Kautz, and N. Mader). Under preparation, Chicago: University of Chicago Press, 2012.

Book Reviews and Op-Ed Pieces

1. "Review of *Problems and Issues in Current Econometric Practices*," *Journal of Economic Literature*, (December, 1974).
2. "The Cracked Bell," Review of Herrnstein and Murray, *The Bell Curve*," *Reason*, March, 1995.
3. "Catch 'em Young: Investing in Disadvantaged Young Children is Both Fair and Efficient," *Wall Street Journal*, January 10, 2006, p. A14.
4. "Comments on *Are Protective Labor Market Institutions at the Root of Unemployment? A Critical Review of the Evidence* by David Howell, Dean Baker, Andrew Glyn and John Schmidt," *Capitalism and Society*, 2(1, Article 5, 2007).
5. "Educated in America: College graduates and high school dropouts: The declining American high school graduation rate: Evidence, sources, and consequences," (with P. A. LaFontaine), CEPR Policy Research VOX Report, February 13, 2008.
6. "The Case for Investing in Disadvantaged Young Children," CESifo DICE Report, February 2008.
7. "The growing polarisation of American society and its implications for productivity: Schools, Skills and Synapses," CEPR Policy Research VOX Report, August 25, 2008.

Journal Articles

1. "A Note on Second Best Conditions for Public Goods," (with R. Nelson), *Public Finance*, 27(1):73-74 (1972).
2. "Empirical Evidence on the Functional Form of the Earnings-Schooling Relationship," (with S. Polachek), *Journal of the American Statistical Association*, (June 1974), 69(346), 350-354. Also, NBER, mimeo (October 1972).
3. "The Estimation of Income and Substitution Effects in a Model of Family Labor Supply," (with O. Ashenfelter), *Econometrica*, (January 1974), 42(1), 73-86. Presented at the Econometric Society Winter Meetings, (1971).
4. "Shadow Prices, Market Wages and Labor Supply," *Econometrica*, (July 1974) 42(4): 679-94.
5. "The Effect of Day Care Programs on Women's Work Effort," *Journal of Political Economy*, (March/April 1974). Reprinted in T.W. Schultz (ed.), *Economics of the Family: Marriage, Children, and Human Capital*, (University of Chicago Press, 1974), 491-518.
6. "Life Cycle Consumption and Labor Supply: An Explanation of the Relationship Between Income and Consumption over the Life Cycle," *American Economic Review*, (March 1974).
7. "A Stochastic Model of Reproduction: An Econometric Approach," (with R. Willis), *Papers and Proceedings of the American Statistical Association*, Social Statistics Section, 1974.
8. "Estimating Labor Supply Functions," (with O. Ashenfelter), in G. Cain and H. Watts (eds.), *Labor Supply and Income Maintenance*, (Chicago: Markham Publishing Company, 1974).

9. "Measuring the Effect of an Antidiscrimination Program," (with O. Ashenfelter), July 1974 mimeo, in *Evaluating The Labor Market Effects of Social Programs*, (Princeton, N.J.: Princeton University Press, 1975). Presented at the American Economic Association Winter Meetings, 1972.
10. "Estimation of a Stochastic Model of Reproduction: An Econometric Approach," (with R. Willis), in N. Terleckyj (ed.), *Household Production and Consumption*, 40, 99-145, (New York: Columbia University Press, 1976). Presented at the Conference on Research in Income and Wealth, Washington, D.C., November 1973.
11. "Simultaneous Equation Models with both Continuous and Discrete Endogenous Variables With and Without Structural Shift in the Equations," in Goldfeld and Quandt (eds.), *Studies in Nonlinear Estimation*, Ballinger, (1976).
12. "A Life Cycle Model of Earnings, Learning and Consumption," *Journal of Political Economy*, (August 1976), 84(2), pt. 2, S11-S44.
13. "Does The Contract Compliance Program Work?: An Analysis of Chicago Data," (with K. Wolpin), *Industrial and Labor Relations Review*, (Summer 1976). Presented at a Symposium on the Effect of the Office of Federal Contract Compliance on Minority Status, Cornell University, May 1975.
14. "The Common Structure of Statistical Models of Truncation, Sample Selection and Limited Dependent Variables," *Annals of Economic and Social Measurement*, (December 1976).
15. "Introduction," *Annals of Economic and Social Measurement*, Special issue on Discrete, Qualitative and Limited Dependent Variables, (December, 1976).
16. "New Evidence on the Dynamics of Female Labor Supply," in E. Andrews and C. Lloyd (eds.), *Women in the Labor Market*. Columbia University Press, 1978. Presented at a Labor Department Conference, "Women in the Labor Market," Columbia University, September 1977.
17. "A Partial Survey of Recent Research on the Labor Supply of Women," *AEA Papers and Proceedings*, (May 1978). Invited paper, presented to the American Economic Association, New York, 1977.
18. "An Economic Analysis of the Contract Compliance Program," *Essay in Labor Market Analysis and Economic Demography in Memory of Peter Comay*, (Halstead, 1977).
19. "The Impact of the Government on the Labor Market Status of Black Americans: A Critical Review," (with R. Butler), in L. Hausman, (ed), *Equal Rights and Industrial Relations*, Madison, Wisconsin: Industrial Relations Research Association, Ch. 9.
20. "A Beta-Logistic Model For the Analysis of Sequential Labor Force Participation by Married Women," (with R. Willis), *Journal of Political Economy*, (February 1977), 85(1), 27-58, read at the Third World Econometric Society Meetings, Toronto, 1975.
21. "Comments on 'The Labor Supply Responses of Wage Earnings in the Rural Negative Income Experiment,'" in J. Palmer and J. Pechman (eds), *The Labor Supply Responses of Wage Earners in Welfare in Rural Areas: The North Carolina-Iowa Maintenance Experiment*,

- Brookings, 1977, Presented at the Brookings Conference on Evaluating the Results of the Rural Negative Income Tax Experiment, Washington, D.C., (January, 1977).
22. "Dummy Endogenous Variables in a Simultaneous Equation System," *Econometrica*, (July 1978). Original draft, April 1973. Final draft, April 1977, 46(4), 931-959.
 23. "Labor Supply Estimates for Public Policy Evaluation," (with G. Borjas), *Proceedings of The Industrial and Labor Relations Research Association*, Chicago meetings, 1978.
 24. "Simple Statistical Models for Discrete Panel Data Developed and Applied to Test the Hypothesis of True State Dependence Against The Hypothesis of Spurious State Dependence," *Annals de INSEE*, Paris, (1978), 227-269, (September, Special Issue).
 25. "Sample Selection Bias as a Specification Error," *Econometrica*, (February 1979), 47(1), 153-161.
 26. "Reply to Mincer and Ofek," (with R. Willis), *Journal of Political Economy*, (February 1979).
 27. "Sample Selection Bias as a Specification Error with an Application to the Estimation of Labor Supply Functions," March, 1977 in J. Smith (ed.), *Female Labor Supply: Theory and Estimation*, (Princeton University Press, 1980).
 28. "Addendum To Sample Selection Bias As A Specification Error," in E. Stromsdorfer and G. Farkas, *Evaluation Studies Review Annual*, Vol. 5, (Sage Publications, 1980), 69-74.
 29. "Does Unemployment Cause Future Unemployment? Definitions, Questions and Answers from a Continuous Time Model of Heterogeneity and State Dependence," (with G. Borjas). Special Symposium issue on Unemployment, *Economica*, (May 1980).
 30. "A Life Cycle Model of Female Labour Supply," (with T. MaCurdy), *Review of Economic Studies*, 1980, XLVII, 47-74.
 31. "A Life Cycle Model of Family Labor Supply," in B. Weisbrod and H. Hughes (eds), *Human Resource, Employment and Development, Proceedings of Sixth World Congress*, (IEA, McMillan, 1983).
 32. "Statistical Models for Discrete Panel Data," in C. Manski and D. McFadden (eds.), *Structural Analysis of Discrete Data With Econometric Applications*, (M.I.T. Press).
 33. "The Incidental Parameters Problem and the Problem of Initial Conditions in Estimating a Discrete Time-Discrete Data Stochastic Process and Some Monte Carlo Evidence," read at the National Bureau of Economic Research Conference on Panel Data, Harvard University, (August 1978). In C. Manski and D. McFadden (eds.), *Structural Analysis of Discrete Data With Econometric Applications*, (M.I.T. Press), (originally scheduled for 1979; due to delays, published in 1981).
 34. "Heterogeneity and State Dependence," in S. Rosen (ed.), *Studies in Labor Markets*, (University of Chicago Press, 1981), 91-139.
 35. "Current Theoretical and Empirical Studies of Labor Supply: Second Generation Studies," (with T. MaCurdy), *Research in Labor Economics*, (JAI Press Inc., 1981).

36. "Recent Theoretical and Empirical Studies of Labor Supply: A Partial Survey," with M. Killingsworth and T. MaCurdy, presented at Oxford, 1979, in Z. Hornstein (ed), *Studies of The Labor Market*, HMS Treasury, (1981).
37. "The Impact of the Minimum Wage on the Employment and Earnings of Workers in South Carolina," (with Sedlacek), in Vol. 5, *Report of the Minimum Wage Study Commission*, U.S. Government Printing Office, 225-272, (June 1981).
38. "Models for the Analysis of Labor Force Dynamics," (with C. Flinn), *Advances in Econometrics*, 1, 35-95, (New York: JAI Press, 1982).
39. "The Identification Problem in Econometric Models for Duration Data," in W. Hildenbrand (ed), *Advances in Econometrics, Proceedings of Fourth World Congress of Econometric Society*, (Cambridge University Press, 1982).
40. "Earnings and The Distribution of Income," (with R. Michael), in *Part II, Behavioral and Social Science Research, A National Resource*, (National Academy of Science Press, 1982).
41. "New Methods For Analyzing Individual Event Histories," (with C. Flinn), *Sociological Methodology*, 99-140, (Josey-Bass, 1982).
42. "New Methods for Analyzing Structural Models of Labor Force Dynamics," (with C. Flinn), *Journal of Econometrics*, 18 (1982): 115-68.
43. "Are Unemployment and out of the Labor Force Behaviorally Distinct Labor Force States?," (with C. Flinn), *Journal of Labor Economics*, 28-42, (January, 1983).
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ANNEX 5

Philip Morris International

Opinion

1. On 16 April 2012 the Department of Health launched a consultation on whether it should promote legislation to require standardized packaging of tobacco products. This would mean, according to paragraph 4.6 of the consultation document, that (among other things):

- All text on the pack, including brand names, to be in a standard colour and typeface.
- 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.

2. In paragraph 5.2 of the consultation document, the Department sought views on the legal implications of its proposals.

3. In many cases, the "branding" which it is proposed to prohibit will be the subject matter of a registered trade mark. The question which I propose to address is whether a prohibition on the use of such a trade mark (at any rate, without payment of compensation) would be contrary to Article 1 of the First Protocol ("A1P1") to the European Convention on Human Rights, as incorporated in the Schedule to the Human Rights Act 1998:

Every natural or legal person is entitled to the peaceful enjoyment of his possessions. No one shall be deprived of his possessions except in the public interest and subject to the conditions provided for by law and by the general principles of international law.

The preceding provisions shall not, however, in any way impair the right of a State to enforce such laws as it deems necessary to control the use of property in accordance with the general interest or to secure the payment of taxes or other contributions or penalties.

4. There is a similar doctrine in the law of the European Union, which was discussed in the case of *Case C-491/01 R v Secretary of State for Health, ex parte British American Tobacco (Investments) Ltd* [2002] ECR I-11453 ("the BAT case"). That case concerned the validity of Directive 2001/37 requiring health warnings on tobacco products and therefore raised a question of European law. It is not directly applicable to the present case, in which national legislation is proposed and the point therefore arises under the Human Rights Act 1998. But the applicable principles are the same and therefore the observations of Advocate General Geelhoed and the Court are very relevant.

5. The first question which arises under A1P1 is whether trade mark rights are a "possession". It appears to be settled in the jurisprudence of the European Court of Human Rights ("ECHR") that intellectual property rights are possessions: see *Anheuser-Busch Inc v Portugal* (2007) 45 EHRR 36, paras 66-78, in which an application to register a trade mark was held to be a possession for the purposes of A1P1. In the *BAT* case, Advocate General Geelhoed remarked that

"...the essential substance of a trademark right does not consist in an entitlement as against the authorities to use a trademark unimpeded by provisions of public law. On the contrary, a trademark right is essentially a right enforceable against other individuals if they infringe the use made by the holder."

6. It is of course true of trade marks and other intellectual property rights such as patents that the registration of the right does not create a statutory right to use it. The Trade Mark Regulation is concerned only with remedies for infringement by others. The right to use the mark exists under the general law and it is the combination of this right (or, properly analysed, liberty) and the exclusivity conferred by the Trade Mark Regulation which gives the mark its value and makes it a "possession" for the purposes of A1P1. The rights conferred by the Regulation would be useless without the liberty, because there is no point in being able to stop other people from using the mark if you cannot use it yourself. Advocate General Geelhoed seems to have recognized that, for the purposes of the question before him, his analysis of the right conferred by a mark led nowhere because he went on to say:

"It is only if normal usage is no longer possible as a result of provisions of public law that a situation can arise in which the substance of the right is affected by reason of those provisions."

7. I take this to mean that a change in public law which makes "normal usage" of the mark no longer possible can affect the substance of the right and may, in appropriate circumstances, constitute a disproportionate interference which "undermines the very substance of the right": see paragraph 260 of the Advocate General's opinion.

8. The jurisprudence of the ECHR on A1P1 is complicated and I do not think it would be helpful to subject it to a prolonged analysis. Generally speaking, the Court inquires into whether the owner has been "deprived" of his possessions or whether the State has merely regulated their use. In either case, the regulation or deprivation must be (at least in the opinion of the State) in the public interest, but in the case of deprivation, fairness and proportionality will ordinarily require the payment of compensation. On the other hand, the regulation of use does not normally require compensation. Examples of cases which fall on either side of the line are compulsory purchase of land for public purposes, in which compensation is required, and planning control of the use of land, where no compensation is paid. (I discussed these distinctions in giving the opinion of the Privy Council in *Grape Bay Ltd v Attorney-General of Bermuda* [2000] 1 WLR 574.) In European law, as applied in the *BAT* case, the notion of "deprivation" is conveyed by saying that "the very substance of the right" must have been taken or undermined.

9. There are cases in which deprivation in the public interest does not have to be accompanied by compensation. These are cases in which the purpose of the law is to deprive someone of property which he should not have got; for example, where the law provides for the confiscation of the proceeds of crime. It would obviously defeat the purpose of such a law if compensation had to be paid. But the sale of cigarettes, although subject to restrictions in the interests of public health, has never been unlawful and there is no proposal to prohibit it. Manufacturers of cigarettes have therefore been able to acquire trade mark rights by lawful means

and therefore I think that the cases in which compensation has been denied can have no application here. The question is therefore likely to be: would the proposed ban on the use of a given trade mark (a logo, for example) amount to a complete deprivation of that right?

10. At this point it is necessary to look at the reasoning in the *BAT* case, where the impugned Directive required (by article 5) that a part of the surface of the package be devoted to a health warning and also (by article 7) prohibited the use of certain marks (for example, including the word "Mild") which might give the impression that the cigarettes were less harmful than others. It is important to notice that, with the exception of Article 7, the Directive did not prohibit the use of any trade mark, although it reduced the area within which it could appear.

11. The Advocate General accepted (at paragraph 265) that trade marks fell within the general principle which I have discussed:

It is also the case in regard to trademark rights that their exercise may be made subject to restrictions on grounds of general interest, but the very substance of the rights themselves may not be undermined.

12. On the facts of the case, however, the requirement under article 5 of the Directive to reserve space for health warnings did not have this effect:

266. I fail to see how the obligations resulting from Article 5 can be regarded as undermining the very substance of the trademark right. The trademark can normally be displayed on the packaging. Only part of the packaging — which itself amounts to even less than 50% — must be reserved for the statements and warnings prescribed in Article 5.

13. That reasoning is clearly inapplicable to the present case, in which the use of a logo mark would be altogether prohibited.

14. In the case of those marks which were prohibited by article 7, the Advocate General said that they were in any event liable to be invalidated as tending to mislead the public, or alternatively, that their misleading content provided a public

interest justification for prohibiting their use without compensation. This reasoning aligns the case with those in which there is a public interest justification for deprivation without compensation, such as the proceeds of crime cases.

However, it seems to me to have no relevance in cases like the present, in which it is not suggested that there is anything harmful or misleading in the logo marks.

Although the point is controversial, Parliament may be entitled to take the view that there is a public interest justification in extinguishing the use of the marks on the ground that their use encourages people to smoke. But that is not enough to justify extinguishment of the marks *without compensation*. Depriving the owner of property without compensation on grounds of public interest can be justified only in the unusual case in which it gives effect to a public interest which would be defeated if compensation had to be paid.

15. The judgment of the Court (at paragraph 150) accepted the reasoning of the Advocate General in paragraph 12 above on the effect of article 5:

"...the only effect produced by Article 5 of the Directive is to restrict the right of manufacturers of tobacco products to use the space on some sides of cigarette packets or unit packets of tobacco products to show their trade marks, without prejudicing the substance of their trade mark rights"

16. However, in relation to those marks which were altogether prohibited by article 7, the Court adopted a somewhat different reasoning (in paragraph 152) from that of the Advocate General:

While that article entails prohibition, in relation only to the packaging of tobacco products, on using a trade mark incorporating one of the descriptors referred to in that provision, the fact remains that a manufacturer of tobacco products may continue, notwithstanding the removal of that description from the packaging, to distinguish its product by using other distinctive signs.


17. The question is whether this paragraph supports the argument that prohibition of the use of a mark can never impair the substance of the right because the proprietor can always use some other mark (for example, a name without reference to any particular typography) to distinguish his goods. In my opinion it does not go nearly so far. The Court was concerned with a general prohibition

(under article 7) of marks "suggesting that a particular product is less harmful than others". In this context, it is understandable that the Court of Justice should have thought that the manufacturer could equally well use a mark which did not convey that impression, particularly since (as the Court remarked) it had been given a substantial time in which to make the change. If, however, the principle is extended to saying that prohibition of the use of any mark does not impair the substance of the right conferred by that mark because the proprietor can distinguish his goods in some other way, then I think it is contrary to recent European jurisprudence on the function of a trade mark.

18. It used to be thought, at any rate in the United Kingdom, that the sole function of a trade mark was to denote the origin of the goods, so that any mark which had this effect was as good as any other. But the Court of Justice has made it clear that this is not the case. In *Case C-487/07 L'Oréal SA v Bellure NV* [2009] ECR I-5185 the Court of Justice said that while the "essential function" of the mark was to "guarantee to consumers the origin of the goods or services", it also had other functions which included "guaranteeing the quality of the goods or services in question" and (rather more obscurely) "communication, investment or advertising". In other words, the mark may do far more than convey information about the identity of the manufacturer. Experts on branding would no doubt be able to give evidence about the way in which such marks enable the consumer to make choices in accordance with his image of himself and the image he wishes to convey to others. Thus the mark may convey a brand image which mere identification of the manufacturer is unable to do. In practice, very large sums of money are invested in creating such a brand image attached to distinctive marks.

19. I therefore do not think that the judgment of the *BAT* case can be given the broad interpretation which I suggested in paragraph 17 might be put upon it. A prohibition on the use of a mark is in my view a complete deprivation of the property in that mark, notwithstanding that the proprietor might be able to distinguish his goods by the use of some other mark.

20. Apart from this point, I can see no reason why depriving someone of his proprietary interest in a trade mark for a tobacco product (however much it may be in the public interest to do so) should be different in principle from any other deprivation in which compensation is required. The only contrary argument is that tobacco trade marks fall into the same category of non-compensatable deprivations as the proceeds of crime, because smoking is deleterious to health. But this, as I have already suggested, seems to me to be a confusion of thought. It would, I think, be lawful on such grounds to prohibit trade in tobacco altogether. One may compare *Ian Edgar (Liverpool) Ltd v United Kingdom* (Application No 37683/97), a decision of the ECtHR arising out of the legislation banning handguns introduced after the Dunblane massacre. The legislation provided for owners and dealers to be paid compensation for guns which had to be surrendered, but some dealers claimed compensation for loss of future business as well. The ECtHR said that it was not deprivation of a possession because they had no legitimate expectation that they would be able to continue dealing in guns for the indefinite future. But there is no suggestion that trade in cigarettes should be prohibited. It therefore seems to be wrong to argue that a prohibition on the use of a trade mark, which has the effect of disadvantaging those with strong marks against those with weak marks, can be justified on the basis that selling cigarettes is undesirable.



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