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Introduction

The critics of tobacco retail displays claim they help to initiate smoking in adolescents and thwart the efforts of smokers to stop smoking. Removing such displays, argue the proponents of display bans, will therefore reduce smoking initiation in the young and increase the likelihood of success of smokers trying to quit, while barely impacting the independent retail sector. This paper assesses the validity of these claims in the context of the international experience, especially in Canada, with display bans.

Accordingly, this paper reviews the empirical evidence about the public health effectiveness and the economic impact of display bans in Canada. While the Canadian public health story is a depressing one, the paper also details what the display ban has done 'successfully' in Canada, namely driving the illegal market and decimating the independent retail sector.

The paper then provides a comparative analysis of the display ban data in Iceland, Ireland, and Thailand. With Canada and Iceland, the paper reviews the evidence cited by the UK Department of Health in its 2008 *Consultation on the Future of Tobacco Control*. With Ireland and Thailand, the paper examines the most recent smoking prevalence data and compares this with prevalence prior to the introduction of their respective display bans.

Public health impact

There are three types of evidence in support of the public health claims about display bans. The first type is made up of experimental studies in which individuals are shown simulated tobacco displays and then asked questions about their reactions to the displays. The second type consists of what are called recall and recognition studies in which individuals are asked about their recall of cigarette brands sold in shops and/or their memories of tobacco displays and this information is correlated with their likelihood of being or becoming a smoker. The final type of evidence comes from jurisdictions that have implemented display bans. It typically consists of pre- and post-ban prevalence, consumption, smoking initiation, and smoking cessation data in order to determine what effect, if any, the display has had.

During last year's UK debate on tobacco displays, each of these three sorts of evidence played a role. The champions of display bans argued that the experimental evidence, the results of recall and recognition studies, and especially the evidence from countries such as Canada, which had implemented display bans, all pointed to the role that tobacco displays played in smoking initiation and cessation, as well as to their

effectiveness in reducing smoking initiation among the young, reducing overall prevalence and consumption, and encouraging cessation.

On the other hand, tobacco retailers and the tobacco industry claimed that the experimental, recall, and recognition studies were severely flawed in their design and provided little reliable evidence that tobacco displays played a significant role in the uptake or continuance of smoking. In addition, they argued that the evidence from countries like Canada failed to show that display bans had any effect on smoking initiation, prevalence, consumption, or quitting.

The author has argued previously that the above studies fail to provide any compelling evidence that tobacco displays had a significant role in smoking.¹ There is, of course, some room for disagreement about just what, if anything, the experimental and recall and recognition studies reveal. However, the real world evidence – effectively a ‘natural experiment’ – from jurisdictions such as Canada that have implemented display bans is far more definitive in determining whether tobacco displays affect smoking behaviour in the ways their critics claim.

Indeed, as with many tobacco control policies, changes in smoking initiation, prevalence, consumption, and cessation provide a legitimate measure of whether such policies work. If countries that have instituted display bans fail to see statistically significant changes in smoking initiation, prevalence, consumption, and cessation, then the claim that tobacco displays have a causal relationship with these outcomes is significantly weakened. Hence, the results of these natural experiments in policy are crucial for determining whether display bans are effective in changing smoking behaviour and therefore constitute a justifiable instance of tobacco regulation.

Impact upon Canadian public health

At the time of the 2009 UK parliamentary debate on the display ban legislation, there was considerable evidence presented about whether display bans in Canada (the second country in the world to institute a display ban) and countries such as Iceland (the first country to institute a ban) were effective since bans in these countries had been in place long enough to provide considerable data. Iceland had introduced its display ban in August 2001 and the Canadian province of Saskatchewan in 2002.

In an autumn 2008 report on the effectiveness of tobacco display bans, the BBC’s Peter Jackson claimed that tobacco display bans in respective Canadian provinces made a significant difference in smoking behaviour.² According to Jackson, ‘smoking rates among 15-19 year olds fell from 29% in 2002 to 19% in 2007’, five years after the first display ban was instituted in Saskatchewan. As of the time of writing this paper, all

¹ Patrick Basham and John Luik, *Hidden in Plain Sight: Why Tobacco Display Bans Fail*, Democracy Institute: London 2009.

² Peter Jackson, ‘Smoking ban lessons from abroad’, BBC News, 12 September 2008.

provinces have prohibited tobacco displays with Newfoundland being the most recent to pass legislation in May 2009 taking effect on 1 January 2010.

Similar claims about the positive impact of display bans are regularly made by Action on Smoking and Health (ASH) UK, a lobby group heavily funded by the British taxpayer. Martin Dockrell of ASH told the BBC that the experience of Saskatchewan showed how effective display bans were in reducing smoking. The BBC report explains:

‘In Canada in 2002, overall youth smoking was going down but not in Saskatchewan. After the ban was introduced in 2002, smoking rates fell amongst the province’s youth, until the smoking industry won a judicial review to halt the ban. Soon afterwards, youth smoking leveled off again, and it was not until the government reinstated the restrictions in 2005 that youth smoking rates dropped once more.’³

As the following sections demonstrate, this account seriously misrepresents, to put it politely, the experience of Saskatchewan’s display ban.

In its 2008 *Consultation on the Future of Tobacco Control*, the Department of Health was not nearly as certain as ASH about the effectiveness of any Canadian display ban. At the time, the Department of Health noted:

‘A doubt about the direct causal link between banning display and reduction in tobacco consumption was included in Health Canada’s 2006 consultation on the issue. Referring to the recent fall in tobacco consumption in Canada, the consultation document observed that “it is possible that restrictions on tobacco displays at retail will have an impact on this trend, but this remains very speculative at this time”.’⁴

The Consultation’s Impact Assessment is also much more cautious than ASH, concluding:

‘Evidence from teenage smoking in Canada is largely inconclusive, with increases in youth (and overall) smoking rates in some areas, and decreases in others. It is difficult to draw any conclusions from the data: it only covers a small number of time periods, (crucially) does not control for other factors affecting smoking prevalence, and the surveys may not have the statistical power to detect smaller changes in prevalence.’⁵

Table 1 (below) reports the most recent data from Canada based on the Canadian Tobacco Use Monitoring Survey (CTUMS) 1999-2008, produced by Statistics Canada for Health Canada. The data is reported by province.

³ Ibid.

⁴ Department of Health, *Consultation on the Future of Tobacco Control*, London: 2008: 34.

⁵ Department of Health ‘Display Ban Impact Assessment’, *Consultation on the Future of Tobacco Control*, London: 2008: 76.

Table 1: Canadian smoking prevalence ages 15-19 by province

Province	2005	2006	2007	2008
Newfoundland	19	16	17	15
Prince Edward Island	13	14	13	14
Nova Scotia	13	15	13	14
New Brunswick	18	16	17	14
Quebec	23	18	17	17
Ontario	16	12	13	13
Manitoba	20	20	20	17
Saskatchewan	25	21	22	20
Alberta	19	15	20	16
British Columbia	14	12	9	15

Source: CTUMS 1999-2008, Statistics Canada, Ottawa.

Prevalence rates vary considerably year by year. For example, Alberta's prevalence went from 15% in 2006 to 20% in 2007, while British Columbia's increased from 9% in 2007 to 15% in 2008.

In 2008, all Canadian provinces except for New Brunswick had display bans. The display bans in the provinces of Alberta, British Columbia, Ontario, and Quebec came into force in 2008. According to the CTUMS data, there has been a decline, albeit with some reversals, in youth prevalence across Canada from 1999 to 2008.

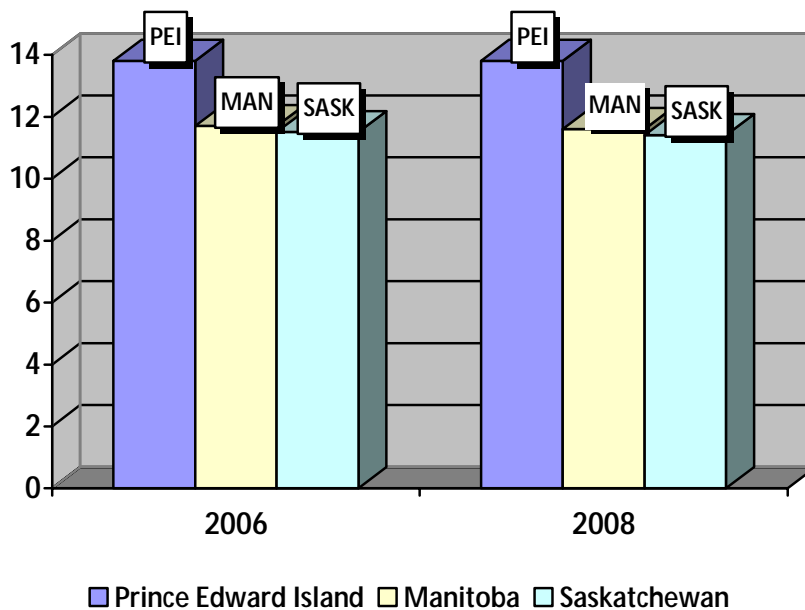
In 2006, when only two provinces, Manitoba and Saskatchewan, had display bans, there were *no* statistically significant differences in youth prevalence rates between those provinces with display bans and those without. The provincial rates were all within (+/-) 5% of the national average smoking rate. However, the two provinces with the highest youth prevalence were the two provinces with display bans.

The cross sectional data shows that display bans have *no* statistically significant effect on youth prevalence. In Prince Edward Island and Nova Scotia, youth prevalence was 13% in 2007 and 14% in 2008, respectively. In Saskatchewan, it was 21% in 2006, 22% in 2007, and 20% in 2008. In Manitoba, it was 20% in 2006, 20% in 2007, and 17% in 2008.

Adult prevalence is equally unaffected by display bans. For example, adult male prevalence in Prince Edward Island was 22% in 2006 and 21.3% in 2008.

As Figure 1 below illustrates, of these provinces with display bans in effect before 2008, the data show that display bans have *no* statistically significant effect on youth consumption.

Figure 1: Youth daily consumption in three display ban provinces



Source: CTUMS 1999-2008, Statistics Canada, Ottawa.

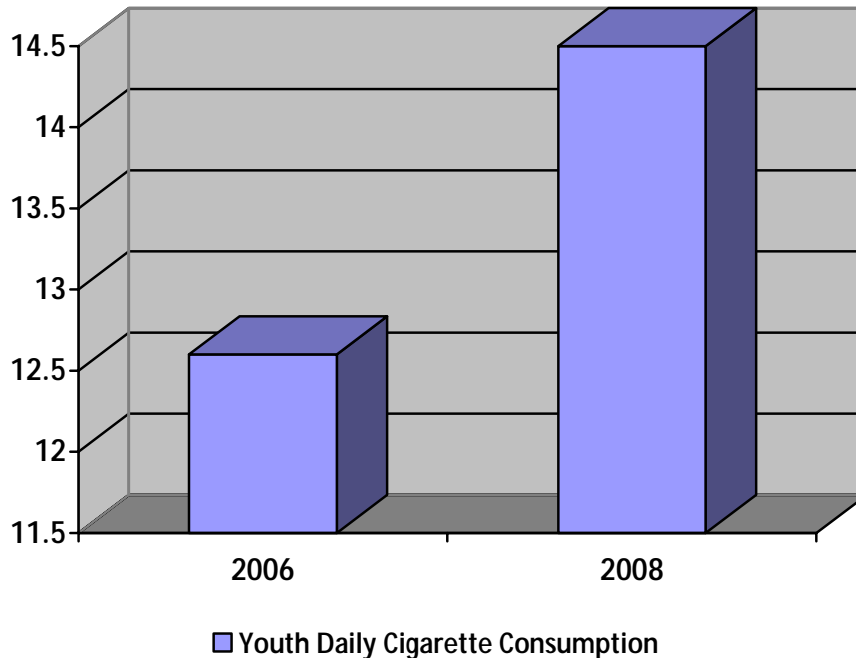
In Prince Edward Island, youth consumption averaged 13.8 cigarettes per day in 2006 and remained at an average 13.8 cigarettes per day in 2008. In Manitoba it was 11.7 per day in 2006 and 11.6 in 2008. In Saskatchewan it was 11.5 cigarettes per day in 2006 and 11.4 per day in 2008.

Tellingly, however, as Figure 2 highlights, in Nova Scotia youth consumption actually rose from 12.6 cigarettes per day in 2006 to 14.5 per day in 2008 – a 15% increase.

In a report commissioned by Japan Tobacco International, Dr Andrew Lilico of Europe Economics, a consultancy, argues that a cross sectional analysis of the youth and adult prevalence data and a time series analysis comparing prevalence before and after the implementation of display bans in the relevant provinces shows that, ‘for both age groups, the introduction of a display ban is associated, statistically, with a rise in smoking prevalence...For both age groups, the average number of cigarettes consumed is unchanged’.⁶

⁶ Dr Andrew Lilico, *The Impacts of Restrictions on the Display of Tobacco Products: A Supplemental Report*, Europe Economics, October 2009: 17-18.

Figure 2: Youth daily consumption in display ban Nova Scotia



Source: CTUMS 1999-2008, Statistics Canada, Ottawa.

Though it might be objected that the Europe Economics report was produced for a tobacco company and therefore inherently suspect, my own statistical analysis (which was not supported by the tobacco industry) of the same data, essentially confirms Dr Lilico's analysis. Dr Lilico's overall statistical results are both robust and replicable.

In other words, the Canadian data do not support the claim that a display ban was effective in 'cutting smoking' either by young people or adults. Instead, they show that display bans are associated with increased prevalence for both young people and adults in Canada and no decline in consumption.

In answer to the problems cited by the Department of Health's Consultation Impact Assessment, namely that the data covered only a small number of time periods and its claim that the 'evidence on teenage smoking in Canada is largely inconclusive', the new Canadian data now cover a larger time period and allows for a far more robust conclusion about the effectiveness of display bans.

The Department of Health's Consultation Impact Assessment noted that the data on youth smoking in Canada 'does not control for other factors affecting smoking prevalence.' This is a common problem in many studies that evaluate the effectiveness of tobacco control policies. Since smoking initiation, prevalence, and consumption all

have multiple determinants, it is impossible to draw causal conclusions without controlling for these determinants.

Obviously, the cross sectional data reported in the CTUMS survey does not do this. An analysis of the data taking into account all of the factors affecting smoking initiation, prevalence, and consumption in both youth and adult populations in Canada across four years is beyond the scope of this paper. However, Lilico does undertake a limited analysis using the standard statistical estimation technique known as the 'first difference fixed effects model', which is widely used to assess the effectiveness of a variety of regulatory measures.

In this analysis, he looks at the effect that cigarette prices, Gross Domestic Product per capita, and the display ban might have on prevalence and consumption for adults and those aged 15-19.⁷ For Lilico, the data analysis suggests the following three conclusions:

1. 'There is no correlation of changes in price, the presence...or introduction of the display ban with changes in the average number of cigarettes consumed by the 15-19 age group.'
2. 'The presence of the display ban has no statistical correlation with changes in prevalence...for the general population.'
3. 'The display ban is strongly and materially correlated with increased prevalence amongst 15-19 year olds. Specifically, where the display ban is present, smoking prevalence increases by 2 percentage points.'⁸

Based on a careful reading of Canadian Government data, it is readily apparent display bans have not resulted in a change in prevalence or consumption in young people or adults in Canada to the end of 2008.

Furthermore, based on a more sophisticated statistical analysis, there is no correlation between display bans and changes in prevalence or consumption for 15-19 year olds in Canada and between display bans and changes in prevalence for adults in Canada. Further the display ban is associated with *increased* prevalence for 15-19 year olds.

Therefore, the public health impact of display bans has been negative. This paper now turns to the question of the Canadian display bans' economic impact.

⁷ Ibid, 41-68.

⁸ Ibid, 22-23.

Economic ill health – Canada’s independent retailers

Display bans have been ineffective in the Canadian context with respect to reducing prevalence and consumption. Yet, they have succeeded at something else - that is, moving tobacco sales away from legitimate retailers, disproportionately independent corner shops, and towards the illicit tobacco market, something which is already a major problem both in the UK and many other parts of the world.

By forcing tobacco products under the counter, display bans blur the distinction between legal and illicit products and undermine two consumer beliefs that are the key to a legitimate tobacco market: first, the belief that tobacco is a legal, regulated product; and, second, the belief that consuming tobacco from the illicit market is a crime. In doing this, it becomes far more likely that smokers will move away from the legitimate market to the illicit market.

The experience of Canada is illustrative of this process. Display bans have distorted competition between different sorts of tobacco retailers, significantly affecting one sort of retailer more than others. Tobacco sales and tobacco displays are much more important to corner shops than to other tobacco retailers, such as supermarkets.

These shops’ competitive position has been much more severely affected by banning tobacco displays than that of their larger rivals. Moreover, tobacco displays allowed these shops to play on a level field against the large supermarket chains, since the tobacco displays were often of equivalent size and served to counteract the assumption that the smaller shop offered less choice. With displays banned, this is no longer the case and many customers have moved to larger retailers. Many small retailers were forced by a display ban to stop selling tobacco and found it difficult, often impossible, to replace the lost revenue from other products, as smaller, independent shops have less capacity to invest in non-tobacco products.

While it might be thought that a significant reduction in the number of retailers selling cigarettes might be welcomed, since it might lead to a reduction in consumption, this has not been the Canadian experience. Rather than leading to a reduction in tobacco consumption, the venue of tobacco purchase and the nature of tobacco products merely shifts from a legal retailer selling legitimate products, to an illegal seller of untaxed and often counterfeit cigarettes. Hence, we learn from Canada that a competitive result of banning displays is a distorted tobacco market that reduces the number of legal tobacco retailers and in so doing drives smokers to the tobacco black market.

For example, a study by the Canadian Convenience Store Association found that 61% of smokers in the province of Ontario and 75% of smokers in the province of Quebec smoked illicit cigarettes.⁹ Nationally, 65% of smokers aged 18-24 smoked illicit tobacco products. When asked whether they believed that purchasing illicit cigarettes was

⁹ Canadian Convenience Store Association, *Contraband Tobacco in Canada: Time for Action*, Toronto, 2009.

illegal, 60% of smokers in Ontario said no and 41% of those in Quebec replied no; 42% of smokers aged 18-24 believed that such purchases were not illegal.

Clearly, a substantial number of Canadian smokers in these provinces, including young smokers, no longer believe that tobacco is a legal product and that using illicit cigarettes is a crime.

Furthermore, immediately upon introduction of the display ban, Canadian corner shop owners experienced the following negative consequences:

1. Increased safety concerns for retail employees from theft.
2. Increases to capital costs, as retailers must now install and maintain covered shelving units.
3. Operating cost increases as employee training requirements grow.
4. Increased regulatory burden as retailers must now ensure that their products are never in sight.

The cumulative consequences for the legitimate tobacco market are striking.

As reported in the study, *Local Presence, National Strength: Convenience Stores in Canada*, by the accounting firm, PriceWaterhouseCoopers, and HEC Montreal, a Canadian university, bankruptcies in the Canadian independent retail sector are at a record level.¹⁰ In 2008, with tobacco display bans either in force or due to come into force in all but one of Canada's provinces, a record 2,300 corner shops shuttered their doors, almost 15% of the national total, or almost one out of every seven shops.

Three quarters of the shop closings were in the provinces of Ontario and Quebec. Ontario led the way with 765 closures, followed by Quebec with 380, and Alberta with 223. As the *Canadian Press* news agency reported:

'Illegal tobacco sales continued to cost stores more than [CAD]\$2.5 billion in annual sales and [CAD]\$260 million in profits last year...The industry is heavily dependent on cigarette sales. Two out of every three cigarettes sold legally in Canada are purchased in convenience stores.'¹¹

In the UK, by comparison, 53% of total cigarette sales in 2007 were in corner shops. For many retailers, tobacco sales constitute a third of their revenue.¹²

Moreover, the economic hardship caused by display bans goes beyond simply lost tobacco sales revenue. According to the PriceWaterhouseCoopers/HEC study, there is a loss in daily traffic of some 1.06 million store visits with CAD\$2 billion in lost sales of other merchandise, as smokers take their business elsewhere.

¹⁰ PriceWaterhouseCoopers and HEC Montreal, *Local Presence, National Strength: Convenience Stores in Canada*, Toronto, 2009.

¹¹ *Canadian Press*, 'Convenience stores closing over bootleg cigarettes', 6 April 2010.

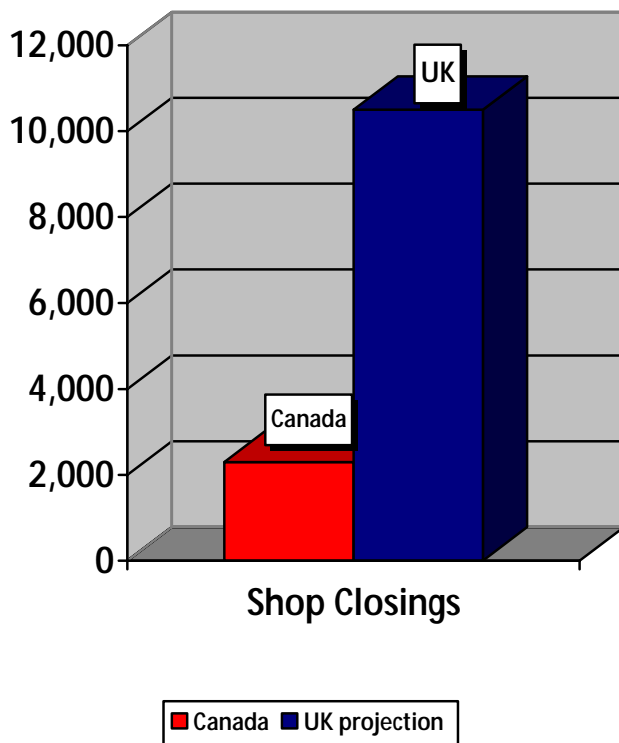
¹² Statistics cited in *The Grocer*, 19 April 2008.

As Michael Gadbois, Executive Vice President of the Canadian Convenience Store Association, observes:

'It is a major loss for a retailer. He can sustain for a year or two [the length of time since the beginning of the display ban in most provinces] but what we see starting last year is there's no way out, they have to close.'¹³

What does the Canadian experience to date tell us about the probable impact of a display ban upon British corner shops? The author's comparative statistical analysis of the respective Canadian and UK independent retail sectors suggests that were the Canadian experience to be replicated in the UK, where approximately 70,000 small retailers sell tobacco products, this would translate into approximately 200 shop closings a week, or 10,500 shop closings by the end of the first year, as illustrated in Figure 3.

Figure 3. Display ban-related shop closings, Canada and UK



Given that, as explained in the preceding section, consumption of cigarettes among young Canadians appears to have risen since the introduction of display bans, literally

¹³ Ibid.

thousands of independent Canadian retailers have lost their businesses and their livelihoods for absolutely no gain to public health in their country.

Iceland's display ban experience

According to the aforementioned BBC display ban report, the world's first country to ban tobacco displays, Iceland, provides strong evidence of how such bans can reduce smoking prevalence. Jackson writes that, 'In Iceland, which has the longest experience of any such ban, smoking among 15 year olds fell from 18.6% in 1999 to 13.6% in 2003 – two years after the law was introduced.'

In its 2008 *Consultation on the Future of Tobacco Control*, the UK Department of Health observed about Iceland that:

'While the evidence about the impact of the display ban...is not definitive, it does point to the potential benefit in reducing smoking rates among teenagers. The number of 16-17 year olds who had smoked in the last 30 days fell from 32% in 1995, six years prior to the ban, to 20% in 2003, two years after the ban came in.'¹⁴

The data relied on by the Department of Health is taken from the European School Survey Project on Alcohol and Other Drugs (ESPAD). This data, however, is highly unreliable for several reasons.

Firstly, the survey does not control for other risk factors for smoking, making it impossible to know the reasons for changes in smoking prevalence and consumption. For example, in addition to the display ban, Iceland introduced other tobacco control measures, as well as significantly increasing the tax rate on tobacco products, during this period.

Secondly, the ESPAD data fail to place changes in prevalence and consumption within the context of multi-year declines for much of the last quarter century. Prevalence for 15-19 year olds in Iceland was 33% in 1987 and 19% in 2007.

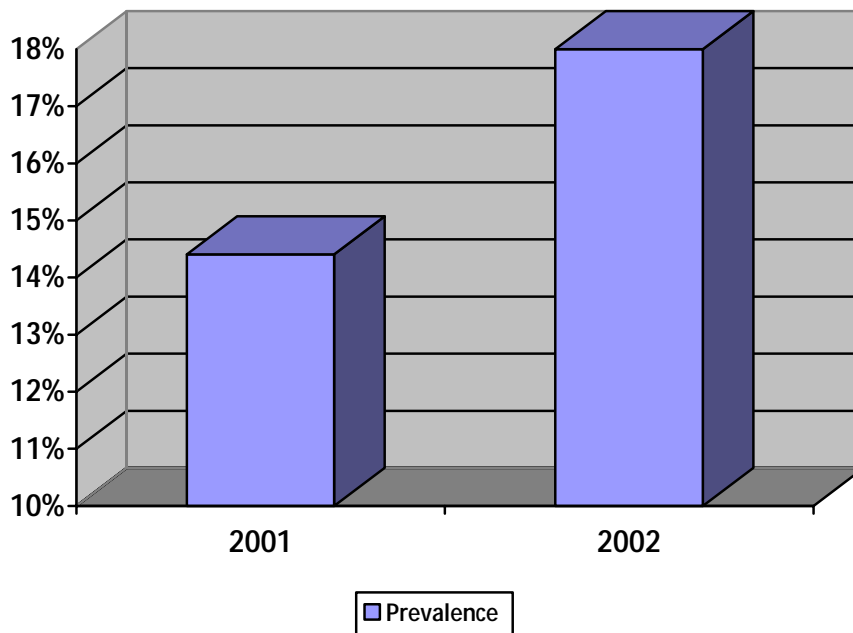
Thirdly, and most significantly, the ESPAD data is reported only in multiple year increments, providing an insufficient number of data points to be able to draw any conclusion about the display ban and prevalence and consumption. No reason is provided for comparing 1995 with 2003, as opposed to comparing the year (2001) in which the display ban was implemented, with the year (2000) before its implementation and the years (2002 or 2003) following its implementation. The relevant comparison is not 1995 – six years before the ban – and 2003, an eight year period, but one year prior to the ban and at least one year after the ban began.

¹⁴ Op. cit.: 76.

In effect, the data reported by the Department of Health is not simply 'not definitive'; they are, instead, *useless* in terms of providing a basis for a conclusion about the effect of Iceland's display ban on prevalence and consumption.

A far more useful source of data is that provided by Statistics Iceland, which provides annual reports on smoking prevalence.¹⁵ The annual data suggest that the display ban had no independent effect on smoking prevalence of 15-19 year olds. For example, during 2001, when the display ban came into effect, smoking prevalence increased by 3.1% from 14.4 to 17.5%.

Figure 4: Icelandic smoking prevalence after display ban's 1st year, 15-19 yrs



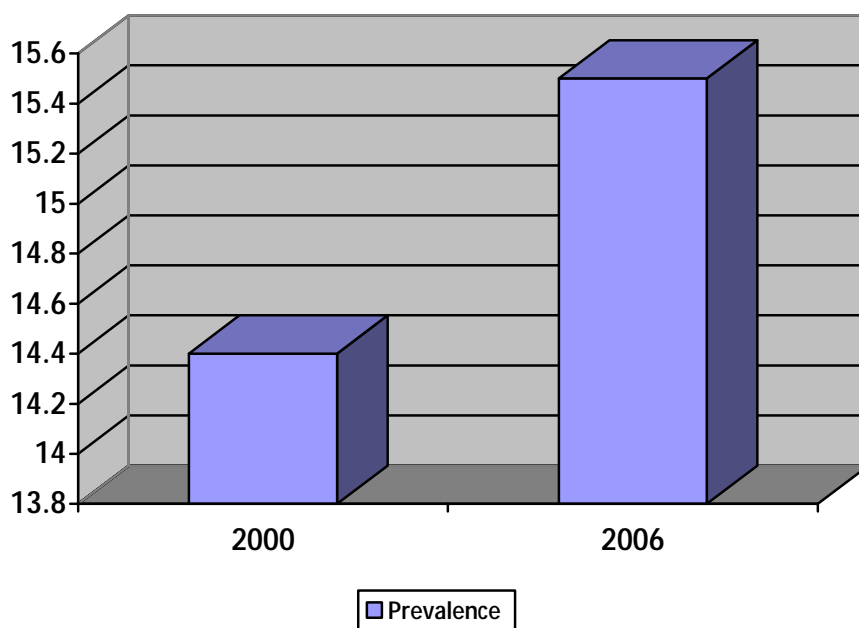
During 2002, the first full year after the ban was introduced, smoking prevalence for this age group was the highest (17%) it had been for five years (see Figure 4 above). In 2000, the year before the display ban, male adolescent prevalence was 19.1%. In 2001, the year of the ban, it was 22.1%. For adolescent girls, prevalence was 19% in 2003, as compared with 15.8% the year the ban was introduced. In 2005, six years after the ban began, smoking prevalence for 15-19 year olds was still above 15%. The most recent data from Statistics Iceland for 2008 fails to show any further statistically significant decline beyond the past ten year trend.

Additional confirmation of the failure of the Icelandic display ban with respect to adolescent prevalence comes from another population-based cross-sectional study. Kristjansson et al use data from *Youth in Iceland*, a survey of 7,430 14-16 year old

¹⁵ Statistics Iceland, *Smoking habits of 15-19 year olds in Iceland*, Reykjavik, 2009.

Icelanders, a cohort that represents 81% of the entire population in this age group.¹⁶ It reports a mid-2006 prevalence in this adolescent group of 15.5%, still higher than the 14.4% in the year before the display ban (see Figure 5).

Figure 5: Pre- and post-display ban Icelandic prevalence, 14-16 yrs.



Therefore, it is very difficult to conclude that the display ban has reduced adolescent prevalence in Iceland when, five years after the introduction of the ban, prevalence is higher than the year preceding its start.

Thailand

Thailand implemented its display ban in 2005. Despite the fact that the measure was challenged in court, it remains in effect. In an interview with the Australia Broadcasting Corporation, anti-tobacco activist Simon Chapman claimed that, 'Countries which have implemented it [the display ban] notably Canada in the 12 provinces and Thailand – have among the fastest accelerating downward trends in tobacco smoking the world.'¹⁷

Aside from Chapman's geographically challenged understanding of Canada and the Canadian display ban situation (the country has 10, not 12, provinces, and at the time of

¹⁶ Kristjansson et al, 'Social correlates of cigarette smoking among Icelandic adolescents: A population-based cross-sectional study', *BMC Public Health*, 2008, 8: 66.

¹⁷ Peter Jackson, 'Smoking ban lessons from abroad', *BBC News*, 12 September 2008.

Chapman's quote did not have display bans in all of these provinces), his claims about Thailand and the display ban are questionable.

Indeed, there is no evidence that the Thai display ban has reduced smoking and the Thai government has recently acknowledged that smoking prevalence is increasing among both women and adolescents. For example, in a recent news report, Dr Churit Tengtraisorn, Deputy Director of the Bureau of Tobacco Control, acknowledged that tobacco use among Thai women was moving upward, not downward.¹⁸ Moreover, Dr Churit also noted that not only is female prevalence increasing but also adolescent smoking among those aged 13-15. Minister of Public Health, Jurin Laksanawisit, at an event marking World No Tobacco Day, said that the government intended to introduce a new tobacco control plan in order to combat *increasing* prevalence.

The most reliable prevalence data for Thailand comes from the recently released *Global Adult Tobacco Survey: Thailand Country Report*, produced by the World Health Organization (WHO) in 2009. The Global Adult Tobacco Survey (GATS) is a WHO initiative, in collaboration with the US Centers for Disease Control and Prevention, to provide internationally comparable data on tobacco use and tobacco control measures 'using a standardised questionnaire, sample design, data collection and management procedures'. The 2009 GATS in Thailand was a nationally representative household survey with a sample of 22,768 households and 20,566 individuals. The overall response rate was 94.2%.

According to GATS, in 2009 smoking prevalence in Thailand was 23.7% for those aged 15 and older. In order to compare this with prevalence before the introduction of the display ban in 2005, one must use data from Thailand's National Statistics Office Survey of Smoking Behaviour of the Population, which is conducted every two years, and the Cigarette Smoking and Alcoholic Drinking Behaviour Surveys conducted by the Ministry of Public Health. It should be noted that these surveys do not have the same quality as GATS. Additionally, Thai government officials and departments tend to understate substantially smoking prevalence. For example, at the 31 May 2010 World NO Tobacco Day event, Dr Churit said that smoking prevalence in Thailand was 20%, which differs significantly with the GATS finding of almost 24%.

One year before the beginning of the display ban, the 2004 Cigarette Smoking and Alcoholic Drinking Behaviour Survey reported prevalence at 19.5%. The same survey in 2007 reported prevalence at 20.5% two years after the display ban began. The Survey of Smoking Behaviour of the Population reported prevalence at 22% in 2004. In terms of consumption, the Cigarette Smoking and Alcoholic Drinking Behaviour Survey pegged daily average consumption at 10.4 cigarettes in 2004 before the display ban and 10.3 in 2007 two years after the start of the ban. As with prevalence, consumption was unchanged.

The official data from the Thai government thus shows that since its inception in 2005 the display ban has had *no* effect on either smoking prevalence or consumption.

¹⁸ *National News Bureau of Thailand*, 'Tobacco use among women rising', 31 May 2010.

Indeed, the GATS data show that smoking prevalence has *increased* since the introduction of the display ban.

Ireland

Ireland's tobacco display ban only began in July 2009. Consequently, there is data for only nine months, which is not a long enough period for drawing more than preliminary conclusions about the effectiveness of the ban in reducing consumption and prevalence.

Additionally, the data that are available for the period July 2009 to March 2010 come from two sources, the tobacco industry and a survey conducted for the tobacco industry by MilwardBrowne Lansdowne. Official data for Ireland are collected by the Office of Tobacco Control, but the most recent data from this office only cover the period for the twelve months ending in March 2008. The sample size of the Office of Tobacco Control data is significantly smaller than either the tobacco industry survey or the MilwardBrowne Lansdowne survey. The Office of Tobacco Control surveys 1,000 individuals per month while the MilwardBrowne Lansdowne survey involves 15,000 respondents.

In addition to these data sources, smoking prevalence data is also available from the EU in its *Eurobarometer Survey: 72.3 Tobacco* released in May 2010 and the report, *Smoking Patterns in Ireland: Implications for Policy and Services, 2007*, prepared by the Division of Population Health Sciences in the Royal College of Surgeons in Ireland and commissioned by the Irish government's Department of Health and Children. The *Smoking Patterns* data is based on interviews with a nationally representative sample of 10,364 individuals aged 18 and older with a response rate of 62%. The Eurobarometer survey is based on a random sample in each member state that is proportionate to population size. For Ireland, this involved a sample of 4,082.¹⁹

This paper's analysis uses all of these data sources in order to examine the effectiveness of the display ban in Ireland. It should be noted, however, that the official data from the Office of Tobacco Control appears to significantly underestimate smoking prevalence, perhaps because of its inadequate sample size and its reliance on a telephone, as opposed to a face-to-face survey.

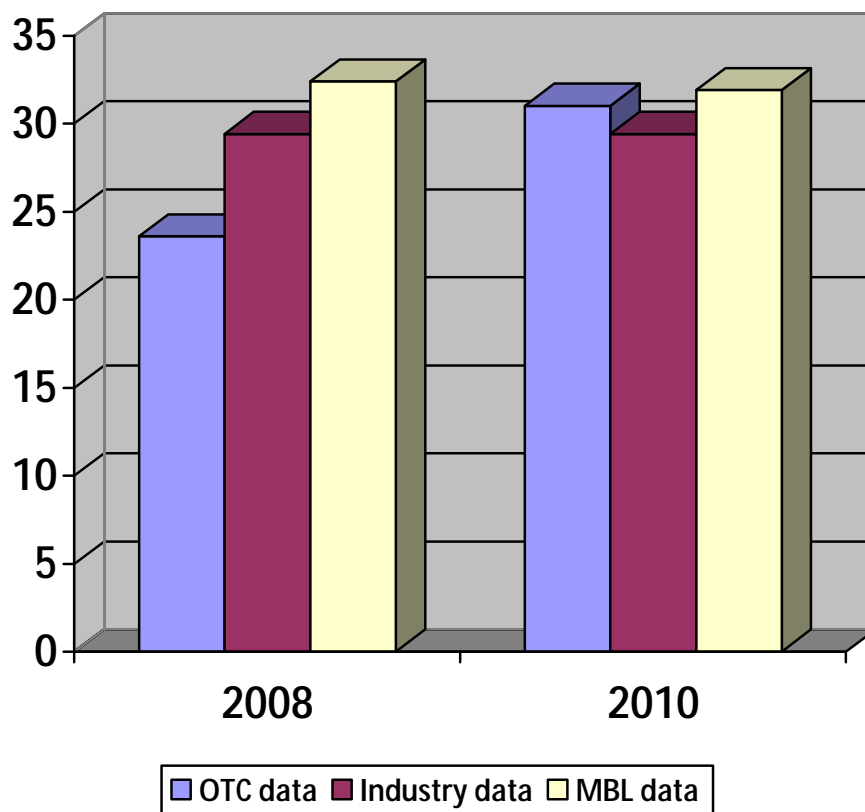
For example, it reports prevalence from 2007-2008 at 23.6% compared with Eurobarometer's 31% in 2009, and *Smoking Patterns in Ireland's* 29% in 2007. Furthermore, the Office of Tobacco Control reports that prevalence continued to decline in Ireland in 2007-2008, while *Smoking Patterns in Ireland* notes that 'there was no significant change in smoking rates between 2002 and 2007'. Eurobarometer notes that prevalence in 2006 was 29% compared with 31% in 2009. Clearly, the official data from the Office of Tobacco Control data needs to be used very cautiously.

¹⁹ For a fuller description of the methodology used in Eurobarometer surveys, see ec.europa.eu/public_opinion/index.

On the basis of admittedly limited initial data, what may be concluded about the effect of the display ban on Irish prevalence and consumption?

As Figure 6 below illustrates, the industry data to 31 March 2010 reports prevalence at 29.4% with a margin of error of (+/-) 1.4%. Average consumption is 16.4 cigarettes per day. The Eurobarometer estimates prevalence at 31% and average consumption at 16 cigarettes per day. The MilwardBrowne Landsdowne report puts prevalence at 31.9% to 31 March 2010, with average consumption at 16.4 cigarettes per day.

Figure 6: Smoking prevalence in Ireland, 2008-2010



Using the official Irish government data, the increase in prevalence from one year before the display ban to nine months after its inception is significant: 5.8 percentage points using the lowest prevalence figures. Using the industry and MBL figures prior to the ban and comparing them with nine months after the ban, it is apparent that there has been no post-ban decrease in prevalence. As Professor Luke Clancy, director general of the Research Institute for a Tobacco Free Society, told the *Irish Independent*

about the Eurobarometer figures, 'There is no evidence of any decline in smoking in this survey'.

Finally, comparing prevalence nine months post-ban with prevalence reported in *Smoking Patterns in Ireland* in 2007, which found prevalence at 29%, there is either no change in prevalence or a small increase, depending on which data one uses. Using a variety of measures, it appears that the Irish display ban has had either no impact on smoking prevalence and consumption in Ireland or is associated with a small increase in prevalence.

Conclusion

Despite UK display ban advocates' repeated assertions, the empirical evidence does not demonstrate that tobacco display bans have reduced smoking prevalence or consumption in the four countries where they have been instituted: Canada, Iceland, Ireland, and Thailand. In this sense, display bans appear to be - like so many other tobacco control policies - highly ineffective.

Display bans have not been effective against any of the measures used to judge tobacco control policies. The most recent data from Canada and Iceland provide strong evidence that display bans *have not* worked as their advocates have claimed. Additionally, there is now considerable evidence available from Thailand, which instituted a display ban in 2005, and some evidence from Ireland, whose display ban began in 2009. The evidence from both of these countries suggests that display bans *have not* significantly affected smoking behaviour.

However, these display bans may well have been counterproductive. In some of the jurisdictions in which they have been implemented, there has been more, rather than less, smoking. Perhaps less surprising, but no less significant, is the display ban's negative economic impact upon the independent retail sector.

Regardless of one's view of smoking, of specific tobacco control measures, or of the tobacco industry, a powerful and growing body of research evidence clearly points to the probability that each country that implements a new tobacco display ban risks significant economic damage *and* a deterioration in public health.