THE ONTARIO TOBACCO RESEARCH UNIT
UNITÉ DE RECHERCHE SUR LE TABAC DE L'ONTARIO

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# What Effect Does Tobacco Taxation Have on Contraband? Debunking the Taxation - Contraband Tobacco Myth

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February 2015

Suggested Citation: Zhang B, Schwartz R. *What Effect Does Tobacco Taxation Have on Contraband? Debunking the Taxation - Contraband Tobacco Myth.* Toronto: Ontario Tobacco Research Unit, Special Report, February 2015.

# Acknowledgements

Michael Chaiton, Rob Cunningham, François Damphousse, Roberta Ferrence, John Garcia, Pamela Kaufman, Rita Luk, Shawn O'Connor, Michael Perley, and Peter Selby provided comments on an earlier draft. Marilyn Pope provided editorial comments and Sonja Johnston provided production assistance.

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# Executive Summary

Research demonstrates that many factors are associated with contraband tobacco use, including: easy access, misconceptions about "legal" purchase of cigarettes from First Nations' Reserves, insufficient enforcement and penalties, and organized criminal activity. It is frequently claimed that tobacco taxes cause smuggling. For example, a 2010 Fraser Institute Report, *Contraband Tobacco in Canada: Tax Policies and Black Market Incentives*, concludes that "*Our research identifies federal and provincial tobacco excise taxes as a primary precipitating factor in the growth of this black market*" (i.e., contraband cigarettes market).

Does increasing tobacco tax necessarily increase contraband? To debunk the taxation and contraband tobacco myth we provide evidence from the literature, present Ontario trend data on tobacco taxes, consumption, prevalence and contraband, compare tax and price data in Canada, and critically review the Fraser Institute Report.

## Key Findings:

- Evidence from many countries shows that tobacco tax increases will reduce tobacco use and increase tobacco revenues, even when there is some small amount of accompanied contraband tobacco use. Many of the small proportion of smokers who might move to contraband tobacco return to legal tobacco within a short period of time.
- Accompanying increased tobacco taxes with anti-contraband measures are effective in keeping leakage to contraband tobacco.
- Self-reported data on purchase of contraband cigarettes based on large population-based surveys show a significant decline between 2008 and 2012 in Ontario – a period during which tobacco taxes increased moderately.
- The province of Quebec has successfully decreased contraband tobacco use substantially while maintaining and now raising tobacco taxes.
- The Royal Canadian Mounted Police seizure data of contraband cigarettes also show a significant decline between 2008 and 2012 in Canada.
- Many factors are associated with contraband tobacco use, including: easy access, misconceptions about "legal" purchase of cigarettes from First Nations' Reserves, insufficient enforcement and penalties, and organized criminal activity. Cigarette smoking prevalence and consumption has been declining since 2007 in Ontario, while tobacco

taxes and tobacco tax revenue have been relatively stable during the same period, further supporting a decreasing trend in contraband tobacco use in Ontario.

- Ontario and Quebec have the lowest tobacco taxes among all provinces in Canada, yet the number of consumers of contraband tobacco is the largest in these two provinces.
- The Fraser Institute Report's conclusion is not supported by the evidence cited in the report and missed substantial evidence from the literature.

Our conclusion is that the benefits of increased tobacco taxes outweigh any minor increase in contraband use that might occur. Tax increases are best accompanied by more stringent anti-contraband measures.

# Introduction

Tobacco taxation is the most effective and cost-effective means to reduce tobacco-related harm.[1,2] Numerous studies show that tax increases in tobacco products deter smoking uptake, reduce tobacco consumption, increase smoking cessation, and address inequalities in smoking rates among social groups.[3,4,5,6]

Cigarette contraband is a global public health policy issue that poses a potential threat to successful implementation of the most effective strategies to reduce population tobacco use.[7] The availability of contraband tobacco makes governments wary that adoption of evidence-informed tobacco control policies would drive more tobacco users to the contraband market.[8] Indeed, the tobacco industry and its partners argue that many potentially effective tobacco control measures (including retail restrictions, higher pricing, and product regulations such as controlling nicotine levels) would result in increased contraband use. However, contraband remains a problem in both high and low tax jurisdictions.[9] For example, Ontario and Quebec have relatively low cigarette taxes compared to other provinces (e.g., British Columbia, Alberta, Newfoundland), but the highest rates of contraband.[10]

Many factors may be associated with smuggling, such as easy access, misconceptions about "legal" purchase of cigarettes from First Nations' Reserves, insufficient enforcement and penalties on smuggling activities, and involvement of organized crime. It is frequently claimed that tobacco taxes cause smuggling. For example, a 2010 Fraser Institute Report, *Contraband Tobacco in Canada: Tax Policies and Black Market Incentives*, concludes that "*Our research identifies federal and provincial tobacco excise taxes as a primary precipitating factor in the growth of this black market*" (i.e., contraband cigarette market).[11] Does increasing tobacco taxes necessarily increase contraband?

In this report we provide evidence from the literature, present Ontario trend data on tobacco taxes, consumption, prevalence and contraband, compare tobacco tax and price data in Canada, and finally critically review the Fraser Institute Report. Our conclusion is that the benefits of increased tobacco taxes outweigh any minor increase in contraband use that might occur.

# Analysis of Tobacco Contraband from the Literature

The tobacco industry has consistently claimed that high taxes drive contraband tobacco and has sometimes argued successfully to governments that they should not increase tobacco taxes because this will increase contraband levels.[12]

An expert panel of over 20 experts on economics, epidemiology, public policy and tobacco control was formed in 2011 to evaluate the strength of the available evidence on the effects of tax and price policies to prevent and reduce tobacco use. The expert panel reviewed available scientific literature and peer-reviewed government agency reports. They concluded that there is sufficient evidence that tax avoidance and tax evasion reduce, but do not eliminate, the public health and revenue impact of tobacco tax increases.[13] Evidence from many countries demonstrates that tobacco use falls and revenues rise following a tax increase, even when there is increased tax avoidance and evasion.[13]

The tobacco industry consistently argues that the solution to reduce smuggling issues is to reduce tobacco taxes, because smuggling is caused by large price differences between cigarettes in different jurisdictions.[14] The 1994 Canadian federal tax cut is a good example of this, when the federal government and five provinces reduced cigarette and tobacco taxes in response to pressure to curb increased smuggling of exported Canadian cigarettes back into Canada.[15]

A European study by Joosens and Raw shows that the tobacco industry's argument is not valid.[14] Using data on 9 countries from the European Confederation of Cigarette Retailers and other sources, the authors examined the association between smuggling levels and cigarette prices. The correlation between high prices and high levels of smuggling does not exist. Actually, countries (Norway, Sweden, Denmark and the UK) with very expensive cigarettes do not have a large smuggling problem. The study indicates that smuggling is caused by fraud, i.e., the illegal evasion of import duty.[14]

Organized crime was the major factor in smuggling in the early 1990s in Canada. It was estimated that over 90% of the contraband market was comprised of cigarettes manufactured in Canada, exported to the US to avoid the higher Canadian taxes, and then smuggled back into Canada in the early 1990s.[16] Two of Canada's largest tobacco companies (Imperial Tobacco Canada, ITL and Rothmans, Benson & Hedges, RBH) admitted guilt in 1990s cigarette smuggling

crimes and agreed to pay criminal fines to the federal government ($200 million for ITL and $100 million for RBH), and to pay for the federal government's new Contraband Tobacco Enforcement Strategy ($50 million each) and for civil settlements (up to $350 million by ITL and $400 million by RBH).[17]

A pioneering study[18] conducted in 2000 by Merriman et al. measured the extent and nature of the worldwide cigarette smuggling problem. The study found that higher tax rates would achieve both objectives of higher cigarette tax revenues and lower cigarette consumption. Their simulations show that even when there are some levels of smuggling, increases in cigarette tax rates result in increased tax revenues. The study collected data from 33 countries and examined the correlation between the transparency index (an index for corruption) and expert opinion on smuggling levels in each country. Findings of this study indicate that corruption is a more important factor than prices in smuggling activities.[18]

Using data from the 1999 California Tobacco Survey, a random digit dialed telephone survey of California households, Emery et al. investigated the extent of tax evasion in the 6-12 months after the implementation of California's $0.50 per pack excise tax increase.[19] The study found that only 5.1% of California smokers avoided the excise tax by usually purchasing cigarettes from non- or lower taxed sources, such as out-of-state outlets, military commissaries, or the internet.[19] The vast majority (70%) of smokers purchased their cigarettes from the most convenient and expensive sources: convenience stores/gas (petrol) stations (45%), liquor/drug stores (16.4%), and supermarkets (8.8%), while the other 25% purchased from tobacco discount or other discount stores. The actual 1999 excise tax revenues were $1.12 billion, representing a 72% increase from 1998 revenues. The loss from tax evasion was estimated at 7.1% of the actual collected revenues, the cost of which is outweighed by the large increase in tax revenues.[19] It is clear from this study that tax increases in tobacco do not necessarily increase tax evasion by individual smokers. Other factors such as purchasing habits and concerns about the legality of tax avoidance may be more important in smokers' decisions about where to buy cigarettes.

Using state-level sales and cigarette excise tax data, Farrelly et al. examined the impact of state cigarette excise taxes on revenue and tax evasion in the USA.[20] Findings indicate clearly that states that significantly increase their tobacco tax rates gain tobacco tax revenue, despite related consumption declines, tax avoidance, and some levels of smuggling. Importantly, the study demonstrates that legal tobacco sales plummeted immediately following the tax increase, but resumed to settle at a new level that was lower than that before the tax increase.[20] The

authors explain that the rebound in sales following the initial sales drop is likely due to smokers returning to established cigarette purchasing habits (e.g., buying by the pack at nearby convenience stores) after using up stockpiles. This pattern (sales dropping sharply first and increasing a few months later) likely reflects a surge in tax avoidance efforts around the date of the tax increase, which subsequently subsides.[20] In general, sales resume at a new stable level within 2-4 months of a tax increase.

The pattern of a surge in cigarette tax avoidance immediately after a tax increase which subsides within a few months is further supported by another study.[21] DeCicca et al. examined direct measures of consumer excise tax avoidance in novel individual-level data from the 2003 and 2006-2007 Tobacco Use Supplements to the U.S. Current Population Survey. Their results show that the rate of border crossing purchase among consumers who faced a tax hike increased from 5% to 7.6% (a relative increase of 52%, $p<0.05$) at 3 months after the tax hike, and by 12 months was down to 6% (a not statistically significant increase from the 5% prior to the tax hike).[21]

Illicit trade is an outcome of demand and supply, but the tobacco industry has consistently focused on the demand side to explain the illicit trade.[12] World Bank analyses have shown that high levels of illicit tobacco products are linked more closely to corruption and tolerance of contraband sales than to price or tax increases.[18] Although a high tax margin may provide the initial incentive to smuggle, other factors are important in smuggling, including the ease and cost of operating in a country, industry participation, how well organized crime networks are, the likelihood of being caught, the punishment if caught, and corruption levels.[12] Research has shown that cigarette smuggling in Central and Eastern Africa is not caused by difference in tax levels (cigarette prices were low in these countries, at US $0.60 per pack) but more by weak state capacity, high levels of corruption and the activities of rebel groups.[22]

It is very important to control the supply chain of smuggled cigarettes. Joossens and Raw studied industry involvement in tobacco smuggling in three countries (Italy, Spain and the United Kingdom) over the last decade.[23] In the UK, the investigation of one tobacco company, with the implied threat of legal or punitive action, led directly to a fall in smuggling. In Spain and Italy, the tobacco industry was able to control the supply chain to a great extent. When the tobacco industry considered smuggling to be too risky, it stopped supplying the illicit market. The study concludes that the key to controlling large-scale organized tobacco smuggling is cutting off supply to the illicit market.[23] This finding is further supported in another study “turning off the tap”.[24]

In response to many governments' concerns that smuggling would increase and tax revenue would decrease as a consequence of increased taxes on cigarettes, Yurekli and Sayginsoy conducted simulation analyses. Using data from 110 countries and a static global demand model for cigarettes (including the smuggling incentives variable), they estimated that the global price elasticity of cigarette demand was -0.41. The simulation results illustrate that increasing cigarette taxes and improving anti-smuggling law enforcement would be the best policy options to significantly increase government revenues while decreasing global cigarette consumption and smuggling activities. When the tax increase is not accompanied by an improvement in law enforcement, global smuggling of cigarettes would increase, but governments would still receive increased tax revenues.[25]

Empirical evidence from California shows that gross cigarette tax revenues were just over US $250 million in the last full fiscal year before the 1989 tax increase. Ten years later in the 1999 fiscal year, the gross cigarette tax revenues were over US $845 million, after several cigarette tax increases (from 10 to 35 cents in 1989, to 37 cents in 1994, and to 87 cents in 1999). While tax paid cigarette sales fell by more than 60% as a result of tax and price increases, revenues collected more than tripled during this period.[6]

Apart from factors described in the above literature, misconception about "legal" purchase of cigarettes from the First Nations' reserves is another important factor in smuggling activities. A report commissioned by Health Canada in 2007 indicated that the perception that it is legal for the general public to purchase lower-cost, tax-reduced cigarettes on First Nations' reserves was the most widespread misconception among participants. In addition, the report indicated that the open advertising of discount cigarettes on highways, the lack of police presence and enforcement, the lack of publicity/information about this being illegal, and the health warnings included on packs of aboriginal cigarettes all contributed to cigarette smuggling activities.[26]

In summary, tax increases in tobacco do not necessarily increase tobacco smuggling. Many factors other than tobacco tax, such as easy access, organized crime, insufficient law enforcement and penalty, misconceptions of "legal" purchase of cigarettes from First Nations' reserves, and lack of publicity/information about the consequences of contraband tobacco use may play more important roles in contraband tobacco activities. Lowering tobacco taxes is not the solution to solve the contraband tobacco issue. Increasing tobacco taxes while improving anti-contraband measures and public education will help achieve the goal of decreasing tobacco use and at the same time will increase tobacco tax revenues.

## Recent Trends on Tobacco Tax, Tobacco Tax Revenue, Tobacco Use and Contraband Tobacco Use in Ontario

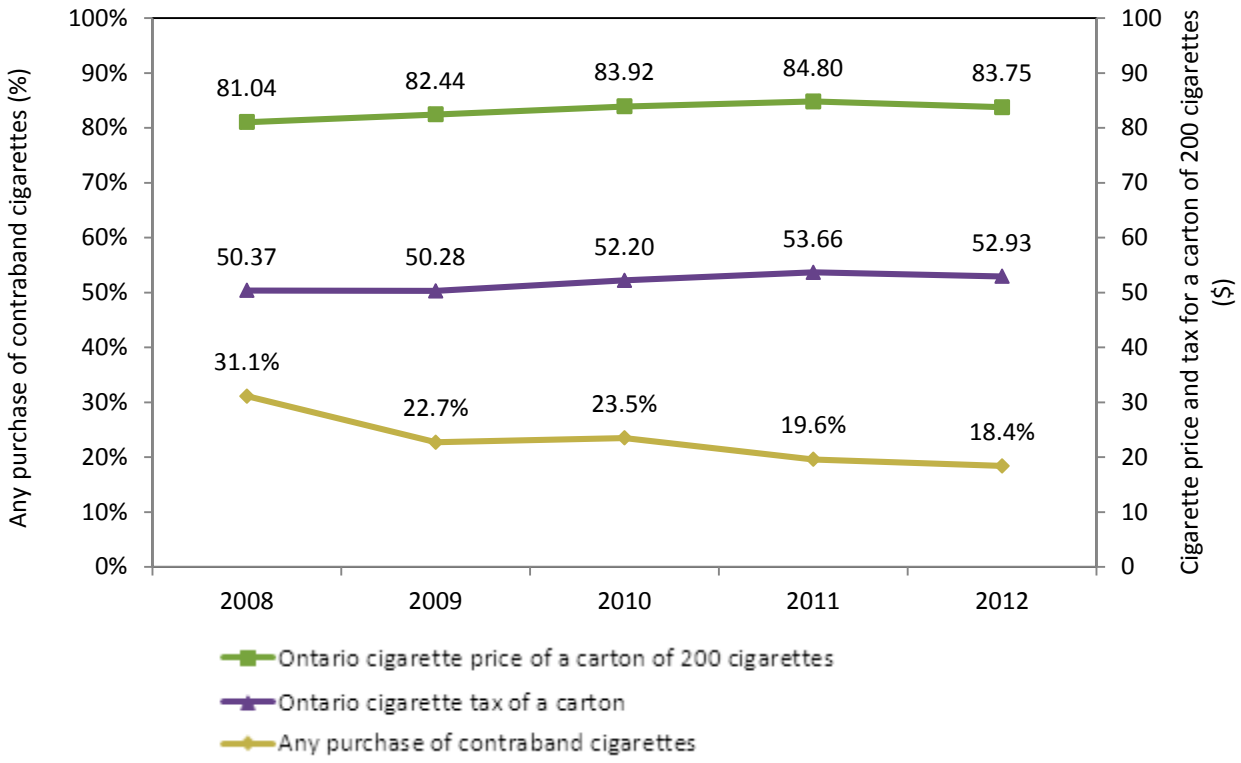
The Ontario government increased the excise tax rate on a carton of 200 cigarettes by $3.25 on May 2, 2014. The National Coalition Against Contraband Tobacco (NCACT), a tobacco industry retail ally, quickly claimed that the tax increase by the Ontario government would "*make the province's massive illegal cigarette problem worse.*"[27] Is there a "*massive illegal cigarette problem*" in Ontario? In this section, we will explore contraband tobacco use in recent years in Ontario, as well as other related information on tobacco tax, tobacco tax revenue and tobacco use in Ontario.

Using the Canadian Tobacco Use Monitoring Survey (CTUMS) 2008-2012 data, we estimated use of smuggled or contraband cigarettes among Ontario smokers. Estimates are based on representative samples of Ontario smokers 15 years of age or older. Use of smuggled or contraband cigarettes is derived from a "Yes" answer to the question "*In the past six months, did you buy cigarettes from a First Nations' Reserve?*" or "*In the past six months, did you buy cigarettes that may have been smuggled?*" These measures denote any purchase in the past six months and do not provide estimates of the overall proportion of cigarette sales that are contraband.

Analysis of Ontario contraband use, tobacco tax and tobacco price data demonstrate that contraband use and tobacco tax are not correlated. Any purchase of contraband cigarettes in the past 6 months among Ontario smokers has been declining since 2008 (Figure 1). From 2008 to 2012, on average, any purchase of contraband cigarettes declined by 2.9 percentage points each year, based on an ordinary linear regression analysis (p for trend = 0.033). The R-squared value of 0.82 for the linear trend of contraband purchase data indicates that the majority (82%) of the variability of contraband purchase data is explained by the linear model. During this period, cigarette price was relatively stable, and cigarette tax (total tax including federal excise duty, provincial excise tax, and provincial harmonized sales tax) increased significantly by $0.85 per year (p for trend = 0.046). Any purchase of contraband cigarettes was not significantly correlated with cigarette tax (correlation coefficient r = -0.75, p=0.15) or cigarette price (correlation coefficient r = -0.85, p=0.066), but tobacco tax and price was significantly correlated (correlation coefficient r = 0.91, p=0.031). The large negative correlation coefficient for any purchase of contraband cigarettes with cigarette tax (r = -0.75) and with cigarette price (r = -0.85) suggest that the higher the tax or price, the lower the purchase of contraband cigarettes (though not

statistically significant). Thus, it is clear that contraband tobacco use has been declining and it is not correlated to cigarette tax or price. In fact, the modest increase of tobacco tax was associated with decreased contraband cigarette purchase in recent years in Ontario, although the association is not statistically significant.

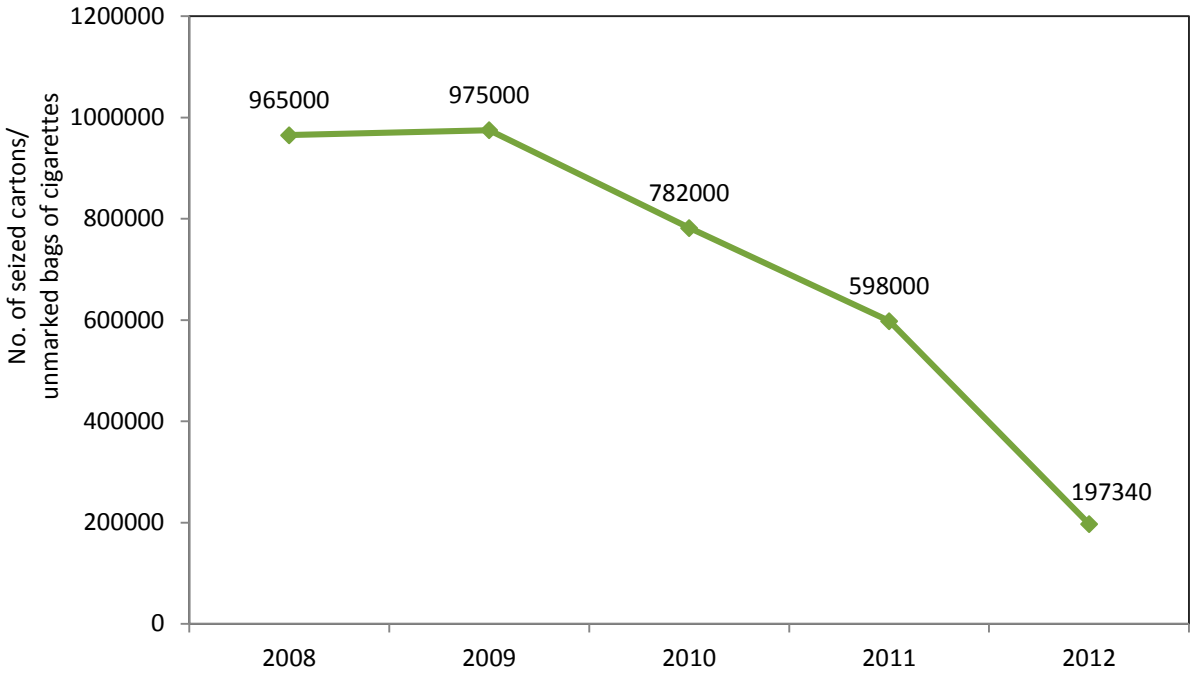
Figure 1: Estimated Contraband Cigarette Use, Cigarette Price and Tax (Total Tax) in Ontario




*Source:* Estimates on contraband tobacco use are from CTUMS 2008-2012; cigarette prices and taxes for a carton of 200 cigarettes in Ontario are estimated by OTRU, adjusted for the 2014 May dollars.
*Note:* Use of contraband cigarettes from 2009 CTUMS was based on a derived variable on cigarette access, which only has answers about purchasing cigarettes from a First Nations' Reserve but not about smuggled cigarettes. Data used here was based on this derived variable and estimates from other four years.

The Royal Canadian Mounted Police (RCMP) contraband tobacco statistics also show a decline since 2008 (Figure 2).[28,29] From 2008 to 2012, the average number of contraband cigarette seizures declined by 150,568 cartons/unmarked bags each year, based on an ordinary linear regression analysis (p for trend = 0.018). There are many variables that affect the number of seizures and amounts seized, and collection of these seizure data may not be based on a systematic method. These data should be viewed accordingly.

Figure 2: RCMP Cigarette Seizures, Canada 2008-2012




*Source:* RCMP contraband tobacco statistics http://www.rcmp-grc.gc.ca/ce-da/tobac-tabac/stats-2011-eng.htm; http://www.rcmp-grc.gc.ca/ce-da/tobac-tabac/stats-2012-eng.htm.
*Note:* The 2012 annual seizure figure is not publicly available yet. This figure was estimated based on the proportion of 2012 seizures between January 1st and April 30th 2012 over the 2011 seizures in the same period and multiplied by the 2011 annual seizures;[28] "the RCMP seized approximately 97,000 cartons/unmarked bags of illegal cigarettes Canada-wide, representing a 67% decrease over 2011 seizures during the same time period of 297,000."[29] Although these data are for Canada, RCMP seizures of cigarettes in Ontario and Quebec account for approximately 81% of the national total.[28]

In summary, data from both surveys and RCMP seizures clearly demonstrate that use of contraband cigarettes has been declining in recent years in Ontario.

What has happened in Ontario in recent years with regard to tobacco tax, tax revenue and tobacco use? Data on tobacco tax, tax revenue and tobacco use between 2007 and 2013 in Ontario show that tobacco tax and tax revenue were relatively stable (p for linear trend ›0.05);

and smoking prevalence and overall consumption of cigarettes declined significantly (p for linear trend ‹0.05) during this period (Table 1 and Figure 3). The declining smoking prevalence and consumption of cigarettes, and stable tobacco tax revenue suggest that the use of contraband tobacco has not been increasing, but has actually decreased in recent years in Ontario. One would expect that tobacco tax revenue should have declined as well, but this is not the case. These findings support the declining trend of estimates of contraband tobacco by CTUMS and RCMP seizure data. Based on these findings, it would not be effective to control for contraband tobacco problems by reducing tobacco taxes.

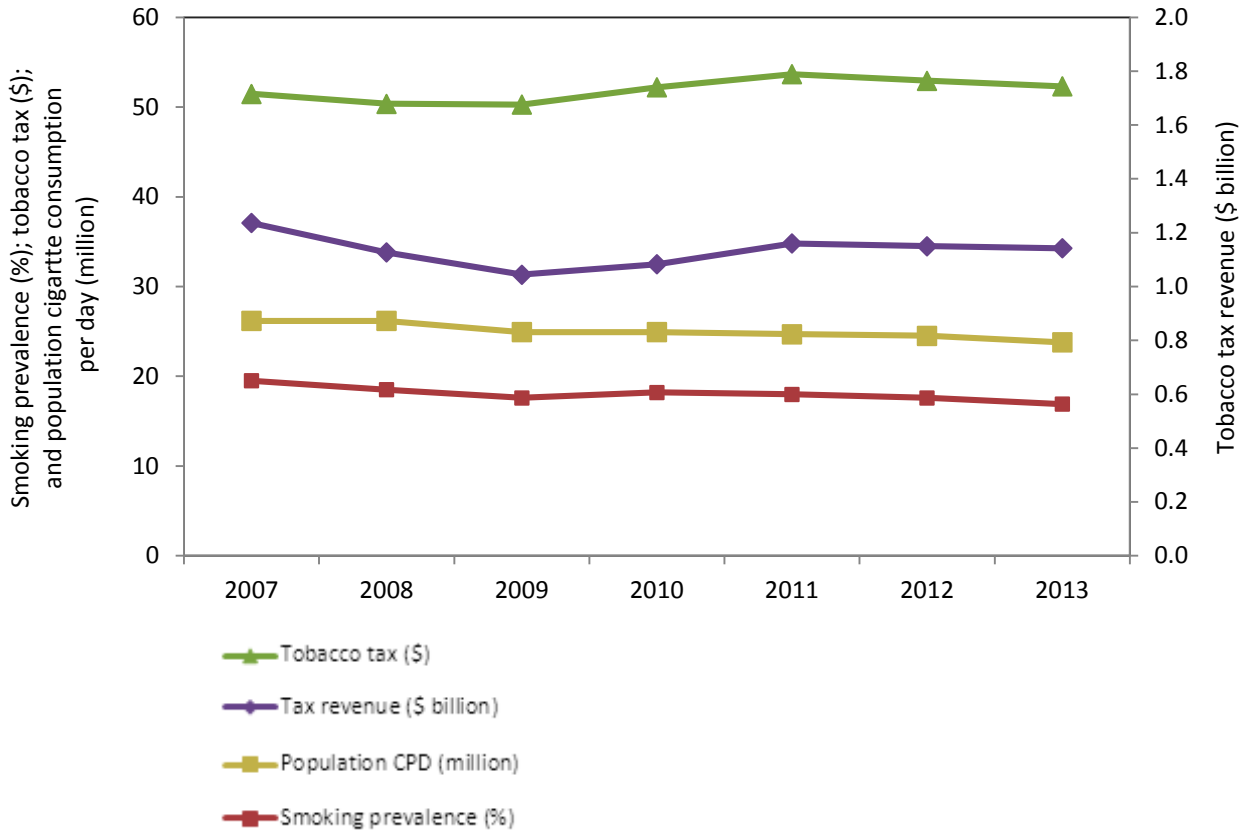
Table 1: Ontario Tobacco Tax, Tax Revenue, Smoking Prevalence and Consumption

| | Total Tobacco Tax per Carton | Ontario Tobacco Tax Revenue | Smoking Prevalence | Daily Smokers | | Occasional Smokers | | All Smokers |
|---|---|---|---|---|---|---|---|---|
| Year | ($) | ($ Billion) | (%) | CPD per person | CPD in population | CPD per person | CPD in population | CPD in population |
| 2007 | 51.48 | 1.236 | 19.5 | 14.7 | 25,053,900 | 3.5 | 1,127,300 | 26,181,200 |
| 2008 | 50.37 | 1.127 | 18.5 | 14.7 | 25,053,900 | 3.5 | 1,127,300 | 26,181,200 |
| 2009 | 50.28 | 1.044 | 17.6 | 14.6 | 23,563,200 | 3.6 | 1,358,300 | 24,921,500 |
| 2010 | 52.20 | 1.083 | 18.2 | 14.6 | 23,563,200 | 3.6 | 1,358,300 | 24,921,500 |
| 2011 | 53.66 | 1.160 | 18.0 | 14.5 | 23,494,200 | 3.1 | 1,201,800 | 24,696,000 |
| 2012 | 52.93 | 1.150 | 17.6 | 14.4 | 23,212,100 | 3.3 | 1,301,800 | 24,513,900 |
| 2013 | 52.31 | 1.142 | 16.9 | 14.6 | 22,266,400 | 3.7 | 1,518,800 | 23,785,200 |
| Linear trend | 0.393 (p>0.05) | -0.0043 (p>0.05) | -0.33 (p<0.05) | | | | | -0.384 million CPDs (p<0.01) |

CPD=cigarettes per day smoked.

*Source:* Ontario tobacco tax, estimated by OTRU adjusted for 2014 May dollars; Ontario tobacco tax revenue from PSFC 2013 estimates for fiscal year ending March 31 (http://www.smoke-free.ca/pdf_1/totaltax.pdf); Smoking prevalence and consumption for Ontario people aged 12+, based on CCHS data from OTRU's Tobacco Informatics Monitoring System (TIMS, http://tims.otru.org), based on calendar year.

Figure 3: Tobacco Tax, Tobacco Tax Revenue, Smoking Prevalence and Cigarette Consumption, Ontario 2007-2013

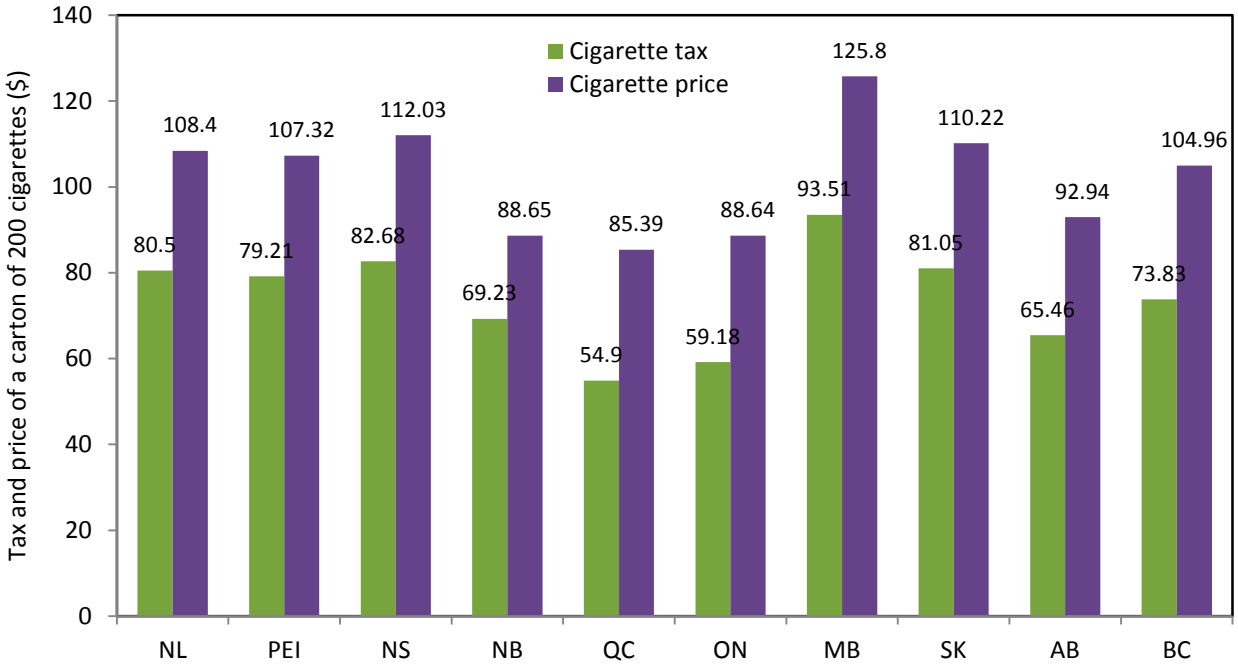



*Source:* Ontario tobacco tax, estimated by OTRU adjusted for 2014 May dollars; Ontario tobacco tax revenue from PSFC 2013 estimates for fiscal year ending March 31 (http://www.smoke-free.ca/pdf_1/totaltax.pdf); Smoking prevalence and consumption for Ontario people aged 12+, based on CCHS data from TIMS, based on calendar year.
*Note:* The apparent declined tax revenue between 2007 and 2009 while the tax was relatively stable might be explained by declined prevalence and population consumption.

## Recent Data on Tobacco Tax and Price in Canada

Data on the 2014 cigarette tax (the total tax, including federal excise duty, provincial excise tax, and provincial/territorial sales tax or harmonized sales tax) and price across Canada show that Ontario and Quebec have the lowest tobacco taxes and prices,[30] yet the contraband tobacco issues are the highest in these two provinces in Canada.[28] This suggests that tobacco taxes are not the major factor for contraband tobacco in Canada.

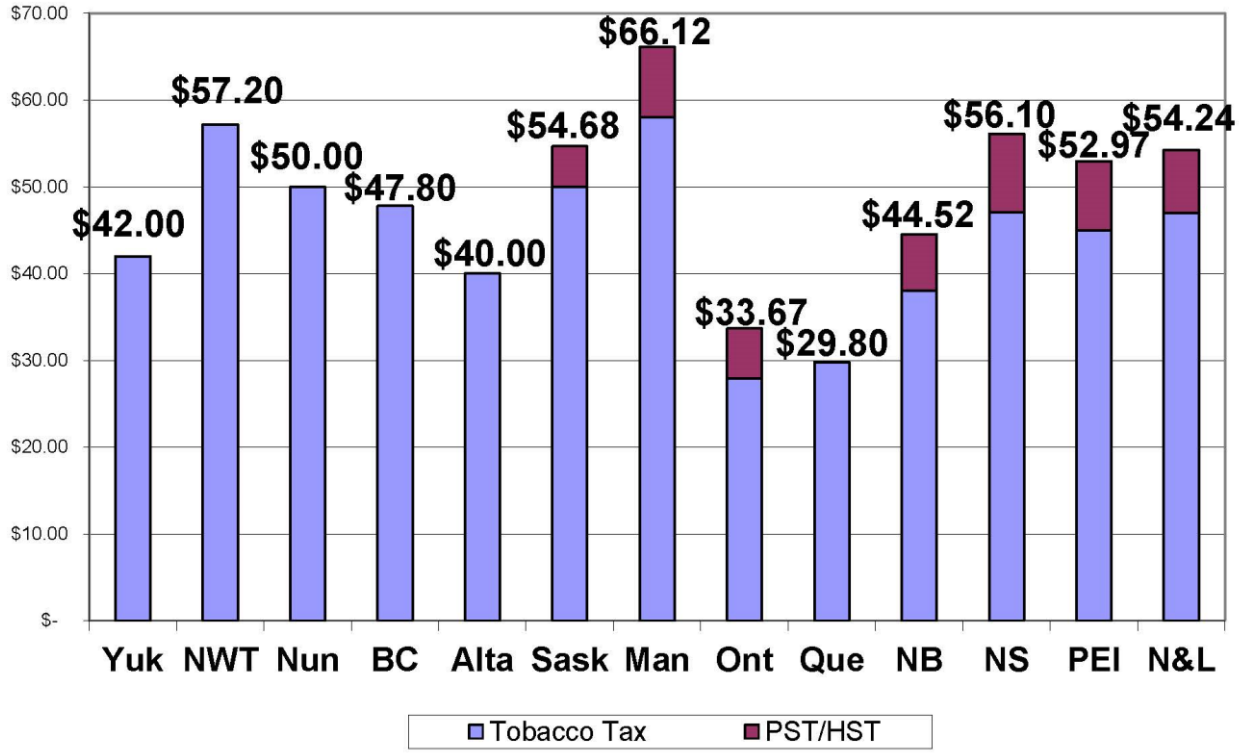
Figure 4: Cigarette Tax (Total Tax) and Price for a Carton of 200 Cigarettes by Province, Canada 2014




*Source:* NSRA estimates.[30]

The most recent tobacco tax data for Canada show that Ontario has the lowest tobacco tax ($27.95 for a carton of 200 cigarettes, excluding HST) in Canada, even lower than Quebec ($29.8 for a carton of 200 cigarettes), as of January 1, 2015 (Figure 5).

Figure 5: Provincial/Territorial Tobacco Tax Rates per Carton of 200 Cigarettes, January 1, 2015

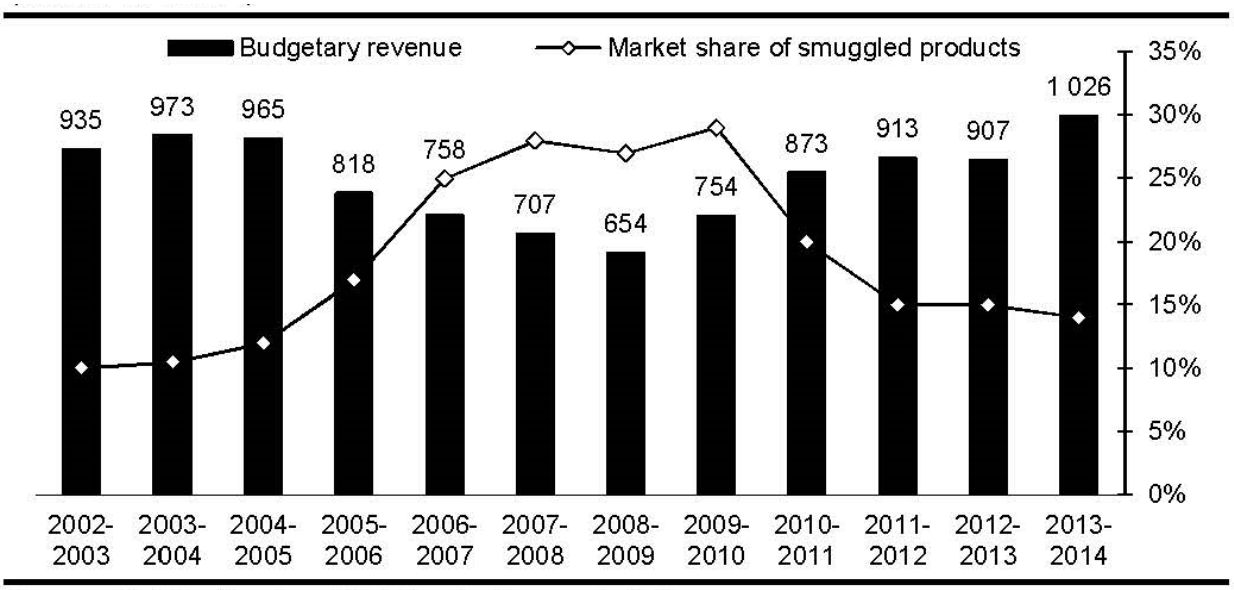



*Source:* Provided by Rob Cunningham, Senior Policy Analyst at Canadian Cancer Society.

## Recent Data on Tobacco Tax Revenue, Contraband Tobacco and Smoking in Quebec

The Quebec government has coordinated its efforts to combat the illicit trade in tobacco through the ACCES tobacco committee since 2001. Efforts to combat contraband became increasingly serious since 2008-2009 when rates reached their peak. The primary purposes of ACCES are to dismantle smuggling networks and to recover the tax losses linked to the illicit trade in tobacco. The actions taken by ACCES, since 2008 in particular, have led to a reduction in illegal trade and have helped to increase the revenue from the specific tax on tobacco products. The revenue from the specific tax on tobacco products has risen from $654 million in 2008-2009 to $1,026 million in 2013-2014 without an appreciable increase in smoking rates in Quebec.[31] There has been a significant decline in smuggling (Figure 6) and relatively stable smoking rate since 2009 in Quebec (Figure 7). Since contraband rates have gone down, the Quebec government has gained confidence about raising tobacco taxes. Despite three tax increases (two provincial and one federal) since 2012, contraband has remained stable and tax revenue has increased. The increase in revenue from the specific tax on tobacco products and stable smoking rate in the province confirm the decline in the market share of smuggled tobacco products in Quebec.[31]

Figure 6: Change in Revenue (Millions of Dollars) from the Specific Tax and Change in Market Share of Smuggled Tobacco Products in Quebec




*Source:* Quebec Budget Plan 2014-2015.

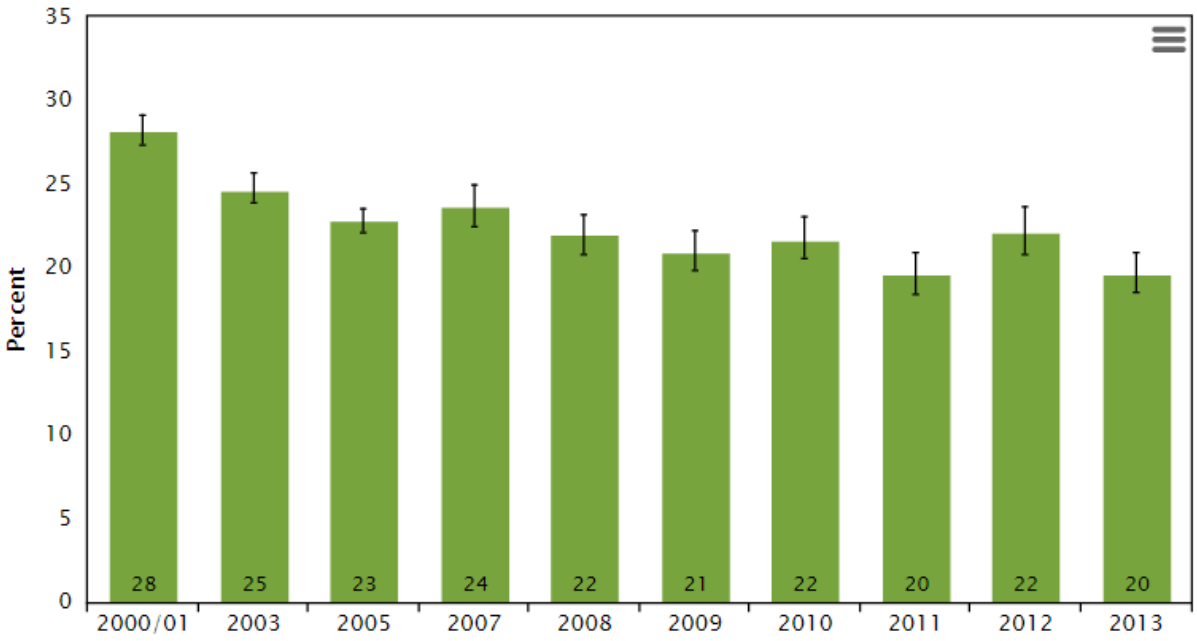



Figure 7: Smoking Prevalence, 2000-2013, Quebec, Aged 12+

*Source:* Canadian Community Health Survey, master file, from TIMS.

## Critique of the Fraser Institute Report

The 2010 Fraser Institute Report, *Contraband Tobacco in Canada: Tax Policies and Black Market Incentives*, concludes that "*Our research identifies federal and provincial tobacco excise taxes as a primary precipitating factor in the growth of this black market*" (i.e., contraband cigarettes market).

This Report is often cited as providing evidence for not increasing tobacco taxes. It is the only major report that we have found to make claims that evidence demonstrates that tobacco taxes are a major cause of contraband. In this section, we critically review this report.

## Fraser Institute Report Statement 1

*By the early 1990s, the trade in contraband cigarettes was flourishing as tobacco excise taxes rose steadily (Cunningham, 1996).* (Page 6)

The book, *Smoke and Mirrors: The Canadian Tobacco War*, by Cunningham (1996) (cited in this statement of the Fraser Institute Report) states that "*As Canadian taxes increased, the differential between Canadian and US cigarette prices widened and thus increased the incentive to smuggle cigarettes from the United States*." However, the report also indicates that "*The major factor contributing to the rise of smuggling was a dramatic increase in manufacturer exports of Canadian cigarettes to the United States… and returned to Canada as contraband, a fact openly acknowledged by the industry*", "*Smuggling had a high profit potential, and tobacco companies happily supplied the cigarettes that became contraband*", and "*More than 90% of the contraband consisted of products originally manufactured in Canada*."[16]

Thus, it is the tobacco industry that was the primary cause of the substantial increase in smuggling of cigarettes in the early 1990s.

## Fraser Institute Report Statement 2

*The greater volume of contraband sales coincides with the reinstatement of relatively high tobacco taxes (RCMP, 2008a; Canada, Department of Finance, 2009). Thus, the smuggling and trafficking of contraband cigarettes is an unintended consequence of Canadian tax policy.* (Pages 7-8)

The RCMP report (2008a)[26] (referenced here and in the Fraser Institute Report statement) uses a chart to show seizures data and tobacco taxes from 1994 to 2006 in Canada. Between 1995 and 2000, when the tobacco tax was relatively stable (or even slightly increased), the number of seized cigarettes declined substantially (almost linearly). The number of seized cigarettes only increased from 2000 to 2006, which seemed to correspond to tax increases. However, the RCMP seizure data of contraband cigarettes has significantly declined since 2008 in Canada (see figure 2 of this report). These data indicate that seizure data of contraband cigarettes do not correspond very well with tobacco taxes in Canada.

## Fraser Institute Report Statement 3

*Researchers have consistently found that demand for tobacco products is relatively unresponsive to changes in price (Chaloupka et al., 2000).* (Page 11)

The study *The Economics of Smoking* by Chaloupka and Warner (2000) (cited in this statement of the Fraser Institute Report) examines the research and several equity and efficiency concerns related to cigarette taxation debates.[32] The majority of the study findings cited in the study by Chaloupka and Warner indicate that people are responsive to cigarette price. Price elasticity of demand from recent studies was from -0.3 to -0.5 (meaning a 10% increase in price will result in 3% to 5% reduction in cigarette consumption), but could be as high as -1.31 for youth and -1.11 for college students. Although technically, a price elasticity of less than 1 is considered "relatively inelastic", this statement is a blatant misrepresentation of the authors' work. Demand for tobacco is price inelastic due to its addictive nature.

Chaloupka, Yurekli and Fong (2012)[6] reviewed over 100 studies, including a growing number from low-income and middle-income countries, and concluded that tobacco excise taxes are a powerful tool for reducing tobacco use while at the same time providing a reliable source of government revenue. The vast majority of studies of high-income countries have produced estimates of price elasticity in the range of -0.25 to -0.5, with most clustered around -0.4. Studies from low- and middle-income countries indicate that demand for tobacco products is at least as responsive, and often more responsive, to price than in high-income countries (e.g., price elasticity of cigarette demand in China ranges from -0.50 to -0.64). The review also indicates that about half of the impact of tobacco price results from its effect on prevalence, largely reflecting cessation among adult users. The review[6] concludes that "*a large and growing literature clearly demonstrates that the overall demand for tobacco products is significantly*

*affected by changes in tobacco product taxes and prices, with tobacco use among the young and lower SES populations most affected.*" and "*price affects all aspects of tobacco consumption, with higher prices preventing initiation among potential users, inducing cessation among current users, and reducing the frequency of consumption and amount consumed by continuing users.*"

Therefore, demand for tobacco products is responsive to changes in price, given the addictive nature of cigarette smoking.

## Fraser Institute Report Statement 4

*Just as anti-smoking advocates contend that higher taxes induce smokers to quit, they also claim that fewer smokers will quit if tobacco taxes are lowered. However, this assertion has not been proven. In fact, the opposite might be true. Despite the substantial cuts in tobacco excise taxes in 1994, smoking prevalence among Canadians has continuously decreased (Health Canada, 2010b; Statistics Canada, 1998a, 1998b). One recent study found that the 1994 tax cuts had no major impact on either adult or youth smoking in Canada; these tax cuts certainly did not encourage greater tobacco consumption (Ouellet, 2010)*

*Conversely, another study found that the 1994 repeal of tobacco excise taxes did, in fact, slow the pace of decline in smoking prevalence across Canada (Hamilton et al., 1997)... Therefore, the impact of tobacco tax cuts on smoking prevalence remains uncertain.* (Pages 32-33)

Tobacco control advocates have consistently stated that tobacco taxes are a key component of comprehensive tobacco control not the only factor contributing to declining smoking rates. Controls on second hand smoke, cessation supports, tobacco industry denormalization strategies, and other program and policy initiatives, are all elements of effective tobacco control.

The statement here by the Fraser Institute Report and Ouellet's Report[33] ignore a wealth of Canadian studies about tax cuts and smoking in Canada.

The Hamilton study[34] cited in the Fraser Institute Report does indeed suggest that tobacco tax cuts increased smoking initiation and decreased cessation. Using the population-based retrospective cohort data from the Survey on Smoking in Canada, the authors report on 11,119 respondents who were interviewed about their smoking habits every 3 months from January 1994 to February 1995. Hamilton et al[34] found that smoking prevalence and initiation of smoking were

higher among provinces with tax cuts than provinces without tax cuts, while smoking quit rates were lower among provinces with tax cuts. The authors concluded that tobacco tax cuts appear to have slowed the rate of decline by inducing more non-smokers to start smoking and leading fewer smokers to quit.

The report[33] by Ouellet, cited in the Fraser Institute Report, was conducted for the Canadian Convenience Store Association (CCSA) and sponsored by the tobacco industry, as indicated by Guindon[35] and Birkett,[36] and is not a peer-review publication. Ouellet re-analysed the survey data that was analysed by Hamilton et al,[34] and reported little evidence to support any statistically meaningful change in smoking rates during 1994/95 in response to the tobacco tax reductions.[36] In Ouellet's report, the analysis method is non-standard: the outcomes of daily smoker through non-smoker were assigned numerical values (e.g., 1, 2, 3) from which a mean value was computed for each quarter of the time window between 1994 and 1995 (treating the categorical levels as if they were interval scaled data). This analytical approach masks important changes in the frequency distribution across the three categorical classes.[36] The Outette Report has been seriously challenged by Guindon[35] and Pinheiro et al.[37]

Several studies, omitted from the Fraser Institute Report provide ample evidence of the inverse relationship between price and tobacco consumption.

Waller et al. examined trends in smoking prevalence and amount smoked over time among youth in Ontario from 1977 to 2001, and explicitly related these trends to the decrease in cigarette prices in 1993-94. The study found that smoking prevalence decreased from 1977 to 1993, jumped upward at this time, and decreased after 1993. This suggests that the early 1990s cigarette price decrease may have played a role in increasing youth smoking in Ontario from 1993-94 onwards.[38]

Using Canadian data, Gruber et al. estimated an elasticity in the range of -0.45 to -0.47 for cigarette demand employing two approaches, one using legal sales data for each province between 1981 and 1999, excluding the provinces and years when smuggling was greatest and a second using micro-data of household level expenditure on smoking at two year intervals between 1982 and 1998.[39] This study also found that people with low income were more sensitive to cigarette price.[39] Findings of this study suggest that smokers are responsive to cigarette prices, despite the large smuggling problem.

Using micro data from two waves of Canadian Tobacco Use Monitoring Survey from July-December 2000 and February-June 2001, merged with dollar price series for tobacco products,

Gospodinov and Irvine examined the impact of global health warnings on tobacco packaging. The study did not find that health warnings had a discernible impact on smoking prevalence. However, the study did find that the price coefficient was significant. The price elasticity was -0.57 for smoking prevalence and -0.58 for smoking demand.[40]

Using the Canadian National Population Health Survey longitudinal data of 1994-95 and 1996-97, Zhang and colleagues examined the association between tax cuts and smoking initiation among young adults.[15] A decrease in cigarette price was significantly associated with higher smoking initiation (price elasticity was 3.36 based on price decrease, meaning that for each 10% price decrease, the smoking initiation rate increases by 34%), indicating that the impact of tax cuts on smoking initiation among young adults is substantial.[15]

Using the pooled cross-sectional data from the 1991 General Social Survey and the 1994-95, 1996-97, and 1998-99 cycles of the Canadian National Population Health Survey, Sen and Fatima also found an elasticity of -0.58 for daily smoking among male youth aged 14-19, and -0.34 among middle aged men.[41]

Another Canadian study, using the National Population Health Survey, cycle three (1998/99) to cycle eight (2008/09), merged with cigarette tax data, reported a tax elasticity of -0.227 for the whole population, while males (elasticity: -0.322) and those with low education (elasticity: -0.555) were more responsive to tax increases.[42]

A recent Canadian study[36] using data on smoking from three consecutive cycles (2003, 2005 and 2007-08) of the Canadian Community Health Survey found a strong increase in smoking among youth in the years following the reduction in tobacco taxes, with a stronger increase in females. The number of excess daily smokers among those born between 1977 and 1985 that could be linked to the 1994 tobacco tax cut was strikingly large (page 8) at 190,000. The study also found that the tax increase in 2001 corresponded to the largest drop in experimentation and onset of daily smoking rates in youth. The study concluded that there is strong evidence that the 1994 tobacco tax cut had an adverse impact on smoking rates in youth.[36]

## Fraser Institute Report Statement 5

*Reducing the prevalence of smoking among teens has been a long-standing priority of public health officials. However, the evidence suggests that the use of taxes to curb teen smoking has had unintended consequences—that is, teens have easy access to the black market for*

*cigarettes, in part, because of tax policies that are intended to reduce smoking prevalence.* (Page 33)

This statement is not supported by evidence. Canadian studies clearly show that decreases in tobacco taxes increase youth smoking; tax increases result in decreases in youth smoking; and youth are more responsive to cigarette prices than adults.[36,38,41] Evidence from many countries[13] show that even if there are some levels of smuggling, tobacco tax increases will decrease smoking and increase tax revenue. Teens may have easy access to contraband cigarettes. This is not mainly because of tax increases, rather it is because of social sources and availability (lack of anti-contraband law enforcement), organized crime (distribution networks), and misconceptions about "legal" purchase of contraband cigarettes from First Nations' Reserves.

## Fraser Institute Report Statement 6

*It is extremely difficult to distinguish between the effects on smoking prevalence of higher tobacco taxes, public awareness of smoking risks, and restrictions on tobacco sales and use.* (Page 34)

*Based on the available evidence, we conclude that while tobacco taxes clearly reduce lawful tobacco sales, their impact on smoking prevalence is less clear, especially when the effects of other anti-smoking initiatives are taken into consideration.* (Page 2)

Although it is difficult to distinguish the effects of different tobacco control polices on smoking prevalence, modelling can help to identify the impacts of various policy interventions. The SimSmoke model, a well-validated simulation model, has been used in many countries to show the impact of tobacco control policies, in the US,[43,44,45,46,47] European countries,[48,49,50,51,52] Russia,[53] Brazil,[54] and Asian countries.[55,56] We have recently completed a similar analysis for Ontario. All of these studies have shown that taxation policy has played an important role in reducing smoking prevalence and smoking-related deaths, both individually and in combination with other tobacco control policies.

In summary, substantial evidence has been omitted from the Frazer Institute Report. Moreover statements in the report are not supported by the evidence cited in the report.

# Discussion

Many factors contribute to contraband tobacco, including ease of access, presence of informal distribution networks, organized crime, industry participation, insufficient law enforcement and penalty, and misconceptions about "legal" purchase of unlicensed manufactures on First Nations' reserves. These factors may be more important than tax increases in precipitating illicit tobacco activities.

The magnitude of the contraband cigarette problem is generally overstated. Evidence presented in this report suggests that the notion that increasing tobacco taxes necessarily leads to increasing contraband tobacco is false. Evidence and experiences from many countries have shown that increases in cigarette taxes do lead to reductions in cigarette smoking and increases in cigarette tax revenues, even when they are accompanied by some level of smuggling. Moreover, reducing tobacco taxes to try to reduce smuggling has resulted in reductions in tax revenues and increased smoking.[8]

The conclusion of the Fraser Institute Report that "*the impact of tobacco taxes on smoking prevalence is less clear*", and "*provincial tobacco excise taxes are a primary precipitating factor in the growth of this black market*" (i.e., contraband cigarette market) in Canada is not supported by evidence. There is substantial additional evidence that is excluded from the Report.

Cigarette smuggling, as well as smoking prevalence and number of cigarettes smoked, have declined in Ontario in recent years, while tobacco taxes and tobacco tax revenue have been stable (or slightly increased since 2009). We conclude that:

1. Cigarette smuggling in recent years in Ontario was not caused by tobacco tax increases
2. Increasing tobacco taxes in Ontario will increase tobacco tax revenue and decrease tobacco consumption

While increasing tobacco taxes may lead some smokers to seek contraband cigarettes, evidence indicates that only a small proportion of smokers will do this and only for a limited period of time. Furthermore, evidence indicates that when tobacco taxes are accompanied by enhanced enforcement and control, increases in contraband can largely be curbed.

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