Tax policy to address tobacco market failures

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Table of Contents

Introduction....3
Multiple market failures: Canada's cigarette oligopoly....4
The cigarette market and externalities....6
Addiction and consumer sovereignty....7
The cigarette market and equity....10
Causes of market failures....11
 Pharmacology....11
 Deception/conspiracy....11
 Regulation....12
 Taxation....13
Are market distortions a problem?....15
Options to deal with excess profits....17
 Move to a (partly) ad valorem tax structure....17
 Mandated price ceilings....18
 Progressive ad valorem taxation....18
 Profit taxes....19
Why act now?....19

Introduction

Tobacco tax increases are the biggest single factor in the recent drops in Canadian per cigarette consumption, which has declined by roughly 20% since the most recent cycle of tax increases began in early 2001. Indeed, it is no exaggeration to say that tax policy is the cornerstone of Canadian tobacco control policy. Curiously, very little attention has been paid to the possible use of tax policy to address anything other than aggregate tobacco sales, nor to any unintended consequences of tax increases. Yet tax policy is far from being a blunt instrument; tax rates and structures are often easier to change than health regulations, and can sometimes be much more effective.

This paper addresses the problem of tobacco-caused death as a *market failure*, which may (at least to people in public health) appear to be a peculiar perspective on the issue. Tobacco companies have long used free enterprise rhetoric to defend their 'right' to advertise aggressively and to oppose tobacco control legislation of any sort. They have attempted to paint tobacco control advocates as paternalistic 'health nuts' who are attempting to rob adult consumers of the free choice of whether or not to consume a risky but legal product.

In fact, the tobacco market has long been the epitome of almost everything that can go wrong with a market. The core business of tobacco companies has been to market a highly addictive product to poorly informed children, then to continue to rack up sales from largely involuntary consumption by addicted adults. Thus, efforts to help smokers quit actually give these consumers *more* choice as to how to spend their money, not less; it is governments and the public health community that are effectively defending the 'right to choose', not the tobacco industry.

Industry representatives have also claimed that the recent rise in lower-priced discount brands is a negative by-product of excessive tax increases. In fact, the emergence of price competition in the manufactured cigarettes segment of the market[1] is not necessarily negative at all, and is clearly attributable more to corporate pricing decisions (notably BAT's apparent decision, particularly since 2001, to milk the Canadian market for short-term profits) than to tax levels per se.

However, some aspects of present government policy do unintentionally reinforce problematic features of the present tobacco market, and should be adjusted accordingly. Various options exist to address in particular the quasi-monopoly profits that result, in part, from the present tax structure.

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[1] According to Imperial Tobacco's figures, 'value for money' cigarette brands went from 5.5% of the manufactured cigarette market in 2002 to 14.8% of the market in 2003, following Rothmans, Benson & Hedges' decision to enter this price segment, which had previously been occupied only by small manufacturers. Low-priced tax-dodge products, such as roll-your-own tobacco and so-called 'tobacco sticks', have long been a feature of the Canadian market.
For data, see Imperial Tobacco Canada, *Financial Information: For the year ended December 31, 2003*. On-line at http://www.sedar.com/csfsprod/data43/filings/00616428/00000001/m%3A%5CLEGAL%5CSEDAR%5C2003yearend%5CAR2003EN.PDF .

Multiple market failures: Canada's cigarette oligopoly

The Canadian nicotine market is startlingly lacking in competition:

1. *Uni-price market.* Until discount brands from small companies began to grab market share in 2002, (and even more so since major manufacturers entered the price segment in early 2003), price competition was almost completely absent from the Canadian cigarette market, except in the form of roll-your-own tobacco and tobacco sticks. Indeed, many retail outlets still post a single price sign for all brands of cigarettes. With roughly 2/3 of the market, Imperial Tobacco (a 100% subsidiary of British-American Tobacco) sets the price for premium cigarettes for the three major manufacturers (the other two being Rothmans, Benson & Hedges and JTI-Macdonald), who until recently collectively controlled 99% of the market.

2. *Product uniformity.* Almost all cigarettes sold in Canada are made of 100% Virginia tobacco, without flavourings or other varieties of tobacco that provide taste variety in most other markets.[2] It is unlikely smokers could identify their preferred brand in a blind taste test.

   Moreover, despite labelling that strongly suggests differences in health hazard and tar delivery — through terms such as 'light' and 'mild' — there is no measurable difference in health hazard between Canadian brands, and indeed no evidence of differences in intake of tar or nicotine by brand.[3]

   Perhaps most importantly, cigarettes utterly dominate the market, despite the existence of other nicotine products that are far less hazardous and decades of polling showing a strong consumer desire to reduce health risks.[4] The only products other than manufactured cigarettes with any significant market share are roll-your-own tobacco and cigarette 'kits' — both of which are used to produce home-made cigarettes.

3. *Absence of technical innovation*. Since cigarette filters became widely available in the 1950s, there have been no technical innovations in cigarette manufacturing that are visible to

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2 In a 1984 presentation to a British American Tobacco internal conference, Imperial Tobacco's director of marketing, Bob Bexon, commented that: "The Canadian market is a uni-taste market. With the exception of menthols, it is almost entirely flue cured Virginia. Smokers are bored." See "Paper 6: Bob Bexon", available on-line at http://www.hlth.gov.bc.ca/guildford/pdf/013/00001365.pdf , original in the Guildford depository at Bates numbers 400993243-400993318.

3 To quote the US National Cancer Institute's 2001 monograph, *Risks Associated with Smoking Cigarettes with Low Machine-Measured Yields of Tar and Nicotine:* "For spontaneous brand switchers, there appears to be complete compensation for nicotine delivery, reflecting more intensive smoking of lower-yield cigarettes." (p. 10).

4 From at least 1972 onwards, Imperial Tobacco tracked the percentage of smokers intending to quit, which rose from 23% in 1972 to 45% by 1981; the percentage agreeing "smoking is dangerous for anyone" rose from 48% in 1971 to 75% by 1981. See "The Canadian Tobacco Market at a Glance", Exhibit AG-31 in RJR-Macdonald Inc. v. Canada (AG) — the *Tobacco Products Control Act* case. A version of the document is available on-line at http://www.healthservices.gov.bc.ca/guildford/pdf/025/00002554.pdf .

consumers and that come close to meeting consumers' expressed desires (in particular, for a less hazardous product). The two major changes since 1970 have been the more widespread use of *reconstituted tobacco* (which provides cost savings to manufacturers, and an easy way to adjust smoke chemistry) and of *filter ventilation*, the small perforations around the filter that dilute smoke with outside air, and hence reduce the tar yield as measured by a standard smoking machine. The latter innovation does affect taste (if the holes are not blocked by fingers or lips), but does not noticeably reduce intake of tar or nicotine, since addicted smokers simply adjust overall inhalation volumes.

4. *Extremely high profit margins.* In Canada, about one-half of the pre-tax price of cigarettes is pure profit.[5] Moreover, many of the costs incurred by large manufacturers — notably high slotting fees to retailers, corporate subsidies to tobacco farmers and large legal bills associated with 'faint hope' litigation — would not be incurred in a more competitive market where cost structures actually mattered.

   Though the international cigarette market is dominated by a small number of multinationals, the Canadian market is an outlier in terms of profit margins. BAT generates almost as much profit on sales in Canada (£464 million in 2003) as on its total sales in Europe (£536 million), where it sold 249 billion cigarettes, or almost exactly *ten times as many cigarettes* as in Canada.[6] Interestingly, despite the large decline in per capita cigarette consumption over the last 25 years (by more than 50%), profit levels have never been higher than they are now.

5. *High brand loyalty.* Despite the objective interchangeability of most Canadian brands, brand switching rates are low.[7] This is likely the consequence of decades of heavy marketing activity focusing on 'subjective' brand characteristics, i.e. extraneous brand imagery (Matinée for soft, fashionable women, Export 'A' for daring, blue-collar young men etc.).

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[5] In a November 2003 submission on the topic of cigarettes with reduced ignition propensity, "The Impact of a Reduced Ignition Propensity Standard on Canadian Cigarette Manufacturers: Industry Outreach Questionnaire", Imperial Tobacco provided a breakdown of its price structure, showing operating costs of $6.36 and profits before taxes of $6.88, out of a pre-tax wholesale price of $13.77 (the remainder being 'net interests').

[6] British American Tobacco, *Annual Review and Summary Financial Statement 2003,* pp. 16-18.

[7] Cf. evidence in recent *Tobacco Act* trial in Québec Superior Court: "...loyalty to cigarette brands remains very strong... Only 3% of all smokers are considered 'convertable' [sic]" (RJR-1418, 1995, p. 2410). Quoted in: Richard W. Pollay, *How Cigarette Advertising Works: Rich Imagery and Poor Information.* Expert report for the Attorney General of Canada.

The cigarette market and externalities

The sale of cigarettes generates an extraordinarily high level of externalities. The two biggest ones that are commonly mentioned in studies of the social cost of tobacco use are *direct health care costs* (estimated at $4.0 billion per year in 1996)[8] and *lost productivity* (i.e. loss to employers and the public treasury due to premature death and higher absenteeism rates), which was estimated at more than $6.8 billion in 1992.[9] (In the academic literature, dominated by US economists, there is some debate about whether health-care costs for smokers, as well as for third parties exposed to second-hand smoke in the home, really should be considered externalities. But they certainly function as such in Canada and most other industrialized countries.) The total of $10.8 billion is almost certainly conservative, both because of growth since 1996/1992, and because of methodology used — Health Canada's total social costs estimate for 1991 was $15 billion.[10]

Total revenue from federal and provincial cigarette taxes was $7.1 billion in 2002-2003[11], still below the level of these externalities.

Social cost estimates do not attempt to attach a figure to the inherent value of human life. However, if we assume total industry profits are running at about $1.5 billion per year (based on Imperial Tobacco's reported profit level), and that there are 47,000 Canadians who die from tobacco each year[12], then one Canadian dies for every $32,000 in profits generated by tobacco companies.[13]

The most recent Canadian government attempt to calculate a value for human life using 'willingness to pay' methods, by the Task Force on Cleaner Vehicles and Fuels, assigned a value of between $2.4 million and $7.9 million to an average case of premature mortality caused by air pollution.[14] This works out to a staggering figure of between $112.8 billion and $371.3 billion per year for the 'value' of 47,000 tobacco victims per year, i.e. more than twice the total federal budget for 2003-2004.

A related question, to which we now turn, is how we reconcile what we know about addiction with economists' understanding of markets.

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8 Health Canada, Regulatory Impact Analysis Statement, Tobacco Products Information Regulations, 2000. Published in Canada Gazette, Part II, Vol 134, No. 15. See p. 1749.

9 Eric Single et al., *The Costs of Substance Abuse in Canada*, Canadian Centre on Substance Abuse, 1996.

10 See Kaiserman MJ, "The Cost of Smoking in Canada, 1991", *Chronic Diseases in Canada*, 1997, **18**(1). On-line at: http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/cdic-mcc/18-1/c_e.html .

11 See Appendix J in: Canadian Coalition for Action on Tobacco et al., *A Win-Win: Enhancing Public Health and Public Revenue,* 2004.

12 Illing EM and Kaiserman MJ, "Mortality Attributable to Tobacco Use in Canada and its Regions, 1998", *Canadian Journal of Public Health,* 2004. **95:** 38-44.

13 This is, of course, an imprecise calculation, since tobacco deaths today are largely attributable to use of tobacco in earlier years.

14 See Task Force on Cleaner Vehicles and Fuels, *Sulphur in Fuels Study: Final Report,* August 1997. On-line at http://www.elaw.org/assets/word/ECsulfurfuels.doc .

Addiction and consumer sovereignty

For the classically trained economist, a critical ingredient of properly functioning markets is the utility-maximizing, sovereign consumer. It is difficult to reconcile what addicted smokers (or heroin or cocaine users) *say* about their drug-taking with the idea of consumer sovereignty: the vast majority of smokers report that they wished they had never tried cigarettes, and that they will quit soon.

For example, in a recent poll for the Canadian Cancer Society, fully 80% of smokers reported that they wished they had never started smoking; 82% reported that they intended to make a quit attempt in the future, including 48% who planned to quit 'immediately' or 'within the next month'.[15] In fact, from past experience we know that very few of them will actually do so successfully any time soon.

Economists have developed various theoretical constructs to deal with addictive behaviour. Some have tended to assume that addicted consumers are wholly irrational, and hence there is no point attempting to apply economic analysis to their behaviour, any more than to the behaviour of people being robbed at gunpoint. However, when it was noted that the normal relationship between price and demand also holds for cigarettes (albeit with an exceptionally low price elasticity of demand), other models were developed.

At this point, there are at least three competing views:

1. "If they are buying it, they must want it." This view, largely but not exclusively propounded by tobacco industry apologists, essentially says there is nothing exceptional at all about the cigarette market. People decide the short-term gain of drug enjoyment is worth the price of any potential damage to health. In the most extreme version of this view, addiction does not exist at all as a biological phenomenon.[16] This view amounts to a form of circular reasoning, since no proof for the voluntariness of smoking is supplied apart from the fact that people buy cigarettes.[17]

2. The 'rational addiction' model, pioneered by Becker and Murphy.[18] Though there are several variants to this model, in essence it is assumed that the addict makes a rational decision when he or she purchases a drug: whether the short-term benefits (relief from withdrawal symptoms, drug effects) are worth both the short-term cost and the (discounted) long-term disutility — in particular, of adding to the 'stock' of consumption, i.e. perpetuating and/or increasing the addiction. This satisfactorily explains why smokers are price-sensitive, and

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15 Environics, Focus Canada Report 2003-4, for the Canadian Cancer Society.

16 For a recent amusing example, see Soiliou Daw Namoro, "Risk Perception and Risky Consumption", web-published paper dated October 2003, at http://www.pitt.edu/~snamoro/documents/putchuvrai1710.pdf .

17 For a much more sophisticated version of this circular reasoning, see Viscusi WK, "Do Smokers Underestimate Risks?", *Journal of Political Economy,* 1990, **98**(6):1253-1268.

18 The classic paper being: Becker G and Murphy K, "A theory of rational addiction", *Journal of Political Economy*, 1988. **96:**675-700.

even sensitive to the *expectation* of future increases. In this model, the role of taxation is simply to account for externalities.

However, an important unanswered question is whether the initial descent into addiction was rational. If not, it could be argued that taxes should be raised to deter the initial irrational decision.

3. The ‘time-inconsistent subject’ model[19], applied to the cigarette market by Gruber and Köszegi. According to this view, the distinguishing feature of addicts is what they refer to as ‘quasi-hyberbolic discounting’. To quote: “...in smoking decisions, the agent might want to enjoy her cigarette, but would prefer to exercise self-control tomorrow. Since she will have similar preferences for immediate rewards in the future, there is a conflict between the intertemporal selves.”[20] As evidence for this model, they point to smokers’ frequent use of self-control devices, designed to maximize embarrassment for themselves in the future if they relapse [i.e. increase disutility of using cigarettes], which they say demonstrates that addicts are aware of their own time inconsistency. Under the ‘rational addiction’ model, this type of behaviour should not occur.[21]

   An important consequence of Gruber and Köszegi’s view is that taxes on cigarettes should be high enough to bring long-term and short-term preferences into alignment, and that cigarette tax increases actually increase the happiness of smokers because of this effect. Gruber goes so far as to attempt to demonstrate a correlation between tax increases and self-reported happiness in surveys in both the United States and Canada.[22]

In the specific case of cigarettes, there is another possible view: that consumers want part of the product (nicotine) but not other parts (tar, carbon monoxide), and are miserable because they cannot get one without the other, due to the virtual monopoly enjoyed by cigarettes.[23] Though it is useful to distinguish between the drug and the drug delivery vehicle, this does not actually solve the theoretical problem, i.e. how we explain people apparently voluntarily spending money on a product they say they do not want.

We will not resolve these theoretical issues here. The bottom line, however, is that the Canadian

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[19] Originally developed by Strotz — see Strotz RH, “Myopia and inconsistency in dynamic utility maximization”, *Review of Economic Studies*, 1956, **23:**165-80.

[20] Gruber J and Köszegi B, “A Theory of Government Regulation of Addictive Bads: Optimal Tax Levels and Tax Incidence for Cigarette Excise Taxation”, [US] National Bureau of Economic Research Working Paper Series, Feburary 2002. Available on-line at http://www.nber.org/papers/w8777 .

[21] Economist George Loewenstein offers an interesting critique of the hyperbolic discounting model in Loewenstein G, “Out of Control: Visceral Influences on Behavior”, *Organizational Behavior and Human Decision Processes*, 1996, **63** (3), at pp. 279-280. However, his ‘visceral factors’ model seems to yield the same tax policy consequences as Gruber and Köszegi’s work.

[22] See Gruber J and Mullainathan S, “Do Cigarette Taxes Make Smokers Happier?”, [US] National Bureau of Economic Research Working Paper Series, March 2002. Available on-line at http://www.nber.org/papers/w8872 .

[23] Cf. Warner K, Slade J, Sweanor D., “The Emerging Market for Long-term Nicotine Maintenance”, *Journal of the American Medical Association*, 1997, **278**(13): 1087-1092.

nicotine market, as it now functions, appears to maximize misery, rather than utility — except for the three large cigarette manufacturers.

The cigarette market and equity

Another distinguishing feature of the cigarette market is that the direct financial costs of purchasing cigarettes are borne disproportionately by lower-income Canadians. On average in Canada, it costs a bit more than $3,000 per year[24] to support a pack-a-day habit; the cost is the same no matter the income of the smoker. The probability of smoking is negatively correlated with education and income, positively correlated with unemployment, other substance abuse problems and various mental health problems.[25]

Looked at statically, then, cigarette taxes are amongst the most regressive imaginable, amounting to a flat tax paid disproportionately by poor people.

Curiously enough, however, tobacco tax *increases* actually have a net progressive effect, a recent analysis of price elasticity by income quartile has shown.[26] Poorer smokers are more likely than richer smokers to quit in reaction to a tobacco tax increase, to the point that the price elasticity of demand for cigarettes in the bottom income quartile of Canadian households is almost exactly -1, i.e. average spending on cigarettes remains the same following a tax increase (and health, of course, improves). Thus, the supplementary revenue generated by tobacco tax increases comes entirely from richer quartiles of the population (for which the price elasticity of demand is much lower); tobacco tax increases also measurably reduce health inequities.

This apparently paradoxical result — a tax on the poor that is actually paid by the rich — can be traced back to the power relationship inherent in selling somebody an addictive product. Once the customer is addicted, he or she ends up paying you money for a product that has negative utility for them (except as a way to stop cravings).

It should be noted that though the effect of tobacco tax increases is progressive *on average*, this is not much comfort to the low-income smoker who is not successful in quitting, and thus has both a diminished income and a poor health outcome. *Non-tax measures* that successfully reduce cigarette consumption amongst poorer people are thus even more progressive — both in terms of net income and health outcomes — than tax increases, though no non-tax measures have been found that have a short-term impact similar to taxation.

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24 Based on an average carton price of $68.67 in February 2004, according to Statistics Canada, CANSIM database, Table 326-00011,2,3,4,5.

25 For examples of the correlation between smoking and low incomes, as well as blue-collar occupations, see Health Canada, Centre for Chronic Disease Prevention and Control, "National Population Health Survey Highlights — Smoking Behaviour of Canadians", January 1999, on-line at http://www.hc-sc.gc.ca/pphb-dgspsp/ccdpc-cpcmc/cancer/publications/nphs-sboc/nphs16_e.html .

26 Gruber J, Sen A, Stabile M, "Estimating price elasticities when there is smuggling: the sensitivity of smoking to price in Canada", [US] National Bureau of Economic Research Working Paper Series, May 2002. Available on-line at http://www.nber.org/papers/w8962 .

Causes of market failures

There are at least four factors that have contributed to the ossification of today's nicotine market: pharmacology, deception/conspiracy, regulation and taxation.

Pharmacology

A society in which the primary means of allocating goods was theft would clearly not achieve anything approaching optimal allocation. Selling a drug to an addict is analogous to theft in that the person doing the selling is taking money for a product that the buyer claims (most of the time) not to want. But the coercion, in this case, is physiological: the buyer has developed a tolerance to the drug and is unable to resist consuming it.

A critical element of addictiveness is *dosage* and *speed of uptake*. In the case of nicotine, cigarettes provide the fastest uptake and the most reliable dosage. (The latter is important because the difference between a 'satisfying' dose and a dose that creates nausea and other unpleasant effects is quite small.) In the absence of usable and accurate information about addictiveness being provided to consumers, competition should naturally favour maximum addiction — which indeed is what appears to have happened in the case of the nicotine market.

Deception/conspiracy

It is hard to market cigarettes successfully without lying systematically to your customers, if only by omission: few people would knowingly choose an addiction that has a 50% long-term chance of killing them. Traditional cigarette marketing involves associating brands with extraneous imagery (skiing, sex, cowboys...) and generally avoids almost any reference to the actual product and its health risks.

One exception was the 'tar derby' period of the late 1950s/early 1960s. During this period, which followed a series of media reports about the links between cigarettes and lung cancer, manufacturers competed on the basis of often outlandish claims about new filters that allegedly reduced tar levels greatly. The result was rapid shifts in market shares between brands — and a decline in the overall cigarette market.

This led major Canadian manufacturers to sign a formal agreement in 1962 to "refrain from the use, direct or implied, of the word tar, nicotine or other smoke constituents that may have similar connotations, in any and all advertising material or any package, document or other communication that is designed for public use or information".[27]

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[27] See form signed by Imperial Tobacco, dated Oct. 12, 1962, available on www.pmdocs.com at Bates number 2024994263.

This decision to avoid competition and pursue a joint strategy of denying health risks and engaging in systematic disinformation was formalized internationally in the 1970s through the establishment of the so-called International Committee on Smoking Issues (ICOSI).[28]

An obvious consequence of this agreement to continue to deny that cigarettes caused disease was to stifle competition on product safety: no major manufacturer could launch a product officially with an explicit claim that it was safer without admitting that existing products were unsafe. This is in contrast, for example, with what has happened in many other industries, where a period of unsuccessful denial about safety risks (e.g., from cars without seatbelts, or fatty foods) was followed by a period of intense competition (e.g., airbag advertisements, 'low-fat' food products).

Regulation

Cigarette contents and engineering are unregulated in Canada at present, though the *Tobacco Act* allows the government to adopt product standards by regulation. However, various provisions of the *Tobacco Act* and other legislation — though they may be fully justified on other grounds — do create significant barriers to entry for potential competitors:

1. Advertising is limited to truthful, informational/brand preference advertising in a small number of venues (publications with 85% or more adult readership, direct mail to named adults, bars). This means new cigarette brands do not have access to the tools of lifestyle advertising that built past brands; it also makes it more difficult to break into the market with novel products.

2. Cigarettes and cigarette-like products are subject to extensive reporting requirements with respect to toxic emissions. All tobacco products are subject to a series of reporting requirements with respect to sales and promotional activities.

3. Mandatory health warnings on non-combustion products would make it difficult for a manufacturer to compete with cigarettes on the basis of health; though literally accurate, these warnings provide no information on relative risk of products (i.e. compared to cigarettes), potentially their biggest selling point. In particular, the warnings "Use of this product can cause cancer" and "This product is not a safe alternative to cigarettes" are major barriers to manufacturers of smokeless tobacco products, at least to those who might wish to compete on safety.

4. Give-aways, coupons and other promotional schemes regularly used to launch new brands of other products are illegal in the case of tobacco products.

5. There has been a good deal of discussion about retail display bans, such as the one legislated by Saskatchewan (but temporarily on hold due to a court ruling on jurisdictional issues).

[28] For a full discussion, see Francey N and Chapman N, " 'Operation Berkshire': the international tobacco companies' conspiracy", *British Medical Journal*, 2000. **321**: 371-374.

Taxation

The structure of Canadian tobacco taxes is probably the biggest single reason for the historic absence of price competition in the cigarette market. With the exception of general sales taxes (GST, PST, HST), all taxes on tobacco products (other than cigars) are specific taxes, i.e. a fixed rate per unit (per cigarette, or per gram of tobacco for other products). Total tax incidence on cigarettes in Canada ranges from 64% to 73%, which means that manufacturers wishing to compete on price must achieve much lower *pre-tax* prices than their established competitors to result in a visible *post-tax* price discount for consumers. For example, a $10-per-carton discount on a carton that retails normally at $60 can be achieved only if the manufacturer can cut the pre-tax price (about $22 at present) virtually in half.

In the European Union, where tobacco *prices* are roughly similar to Canada's, manufacturers' profit margins are generally much lower, because EU rules require a mix of specific and *ad valorem* tobacco taxes (i.e. a percentage mark-up of the pre-tax price). *Ad valorem* taxes amplify the impact of lower pre-tax prices, and accordingly there is differentiated cigarette pricing. As of October 2002, tax incidence in Europe[29] ranged from a low of 69% in Luxembourg to more than 80% in the UK, Denmark and Ireland.

In the United States, price competition has been even fiercer, due to 1998 Master Settlement Agreement (MSA). This agreement, between major manufacturers and Attorneys-General of most states, commits manufacturers to making large annual payments to the states to pay for tobacco-caused health-care costs borne by the states. Non-participating manufacturers have had a significant cost advantage as a result, amplifying the already existing price gap between 'premium' and 'generic' brands; recently, states have passed legislation attempting to reduce this advantage. Though US taxes are specific taxes, as in Canada, they represent only about one-quarter of the final retail price, and hence are far less effective at stifling price competition.

The structure of Canadian tobacco taxes distorts the market in another respect, by providing a considerable price advantage to two cigarette substitutes, tobacco sticks and roll-your-own. Sticks are simply cigarettes, sold with one assembly step (adding a filter overwrap) not yet performed, yet are taxed at a lower rate by the federal government. The tax advantage for roll-your-own is largely the result of the fact that roll-your-own is taxed by weight, but the weight of tobacco need to produce a single cigarette has declined significantly since the conversion factor of 1 g of fine cut = 1 cigarette was established. In fact, major brands of fine cut require as little as 0.45 g to roll a cigarette.[30]

Other tobacco products (pipe tobacco, chewing tobacco, snuff etc.) are also taxed as if 1 g were equivalent to one cigarette. This is an arbitrary assumption, justifiable only on the grounds that it is easy to administer. For example, if products were taxed on the basis of average nicotine intake by users, taxes on cigars might well go down, while taxes on some oral tobacco products might go up. If

29 On most popular cigarette brand — usually, Marlboro.

30 See Canadian Coalition for Action on Tobacco, *A Win-Win: Enhancing Public Health and Public Revenue*, Jan. 2004, for a more detailed discussion of the roll-your-own issue. On-line at: http://www.nsra-adnf.ca/DOCUMENTS/PDFs/taxreport2004.pdf .

products were taxed on the basis of relative hazard or addictiveness, it could be argued that cigarette taxes should go up and those on some other products should go down.

Are market distortions a problem?

Given the extremely high death toll from tobacco products, and hence the strong public interest in reducing consumption as quickly as possible, it may seem odd to be concerned about the relative absence of competition in the nicotine market. Lack of competition generally results in less attractive products and higher prices — both things we might actively wish to encourage in the case of tobacco products. Indeed, one of the most frequent arguments for tobacco tax increases in recent years has been the need to help smokers quit smoking (and deter young people from starting) through price signals. If oligopoly profit-taking by cigarette manufacturers contributes to the same goal, why should anyone object? There are several issues here.

First, excess profits are a concern because they deprive the government of potential revenues. The upper limit on tobacco taxes is the *price* at which smuggling becomes a major problem; every price increase by manufacturers thus cuts into the pricing room available to governments. *If Canadian profit margins could be brought down to typical European levels and the corresponding pricing room transferred to taxation, this could generate more than $1 billion in supplementary tobacco tax revenue*[31]*, without any increase in price to smokers.*

Second, excess profits are a public health concern because they are likely to reduce the effectiveness of the government's tobacco control policies. They allow manufacturers to invest more heavily in various promotional strategies (such as prominent signage at point of sale, direct mail etc.); they also make it (financially) easier for manufacturers to contest government policies through lobbying and in court. Companies in a truly competitive market would be unlikely to contest legislation without a reasonable chance of success; yet Canadian tobacco companies did challenge the federal *Tobacco Act*, despite the fact this legislation closely follows the principles set down in the 1995 Supreme Court judgement on predecessor legislation, the *Tobacco Products Control Act.* Less profit would mean that manufacturers would have an incentive to cut costs — such as marketing budgets.

Third, if we consider the public policy justifications for tobacco taxation, it should be clear that increasing manufacturer profits via tax-created distortions is not a desirable outcome. There are basically three reasons to tax tobacco:

1. The government needs revenue to carry out various public purposes, and therefore needs to tax everything to some extent. This would justify, say, charging sales tax on tobacco products even if they were completely innocuous.

2. The tobacco market generates externalities out of all proportion to other consumer products. On 'polluter pays' principles, taxes on tobacco products should be much higher than on other consumer products — and roughly in proportion to the health risks inherent in each product. If tax policy inadvertently transfers pricing power from government to manufacturers, not only does this undermine the cost-recovery objective, it also rewards the problematic

[31] Which of course would be off-set in part by a decline in corporate income tax revenue.

behaviour (i.e. successfully promoting tobacco products) that contributed to the ‘pollution’ in the first place.

3. The most important long-term impact of higher tobacco prices is to deter young people from becoming addicted to cigarettes — in short, to (partially) counteract one market failure, the absence of complete information in the marketplace. This effect is more likely to be achieved by ensuring the government receives the proceeds of the price increase (particularly if they are at least partially spent on programming to reduce tobacco use) than by giving the money to manufacturers. Moreover, to the extent that spending on cigarettes contributes to inequity, it is better that the proceeds go to the state, which may choose to spend them on measures to reduce inequality (e.g., increasing tax-free income cut-off), rather than to private, foreign-owned companies.

There thus appears to be a clear case for addressing the issue of excess profits generated by barriers to price competition that are the accidental result of regulatory policy and tax structure.

The case with respect to technical innovation and competition between different types of nicotine products is a good deal more complicated. There is heated debate within the tobacco control community about the advisability of actively encouraging addicted smokers to switch to various forms of smokeless tobacco. There is little discussion about whether cigarette companies should be encouraged to compete to design and market safer cigarettes, for the very good reason that there is virtually no way (short of waiting several decades for epidemiological evidence) of reliably evaluating the relative hazard of different cigarettes.

Thus, while all of these market failures are a concern, we will concentrate in the following analysis on the one aspect that is clearly a matter of tax policy, rather than general tobacco control policy: the excess profits resulting from lack of price competition.

Options to deal with excess profits

As mentioned before, the exceptional profitability of large Canadian cigarette manufacturers is the result of weak price competition caused by specific taxes and various regulatory barriers to entry. Solutions to deal with the problem can either seek to inject more price competition into the Canadian market, or leave the market largely intact but attempt to recover the excess profit through adjustments to tax strategies.

Move to a (partly) ad valorem tax structure

At the moment, the largest discount a low-cost manufacturer can realistically offer at retail, vis-à-vis the standard price for major brands, is $10-15 per carton. The total of federal and provincial/territorial specific taxes ranges from about $35 (Ontario) to about $58 (Northwest Territories). If the federal government were to convert its present $15.85 per carton specific tax to a 100% ad valorem tax on the pre-tax price (which at present, including retail mark-up etc., is roughly $23 per carton), this would double the discount a low-cost manufacturer could offer, no doubt causing a rapid decrease in manufacturers' prices.

Though it might take a year or two of trial and error to find the right mix of specific and ad valorem taxes to do this, it should be a relatively straightforward matter to achieve a significant reduction in *pre-tax* price without reducing the average *post-tax* price. In short, there would be a tax increase without any political opposition at all (except from large manufacturers).

Possible drawbacks to this approach:

- To be effective in the long term, this approach probably requires permanent price segmentation of the market, and some level of visibility for lower-priced brands. Presumably this would mean a proliferation of price signs at point of sale (unless these are limited by regulation or legislation) — an advertising effect that might tend to increase overall consumption.

- If the US experience is anything to go by, one strategy large manufacturers would want to use against heightened competition from lower-margin producers would be periodic promotional discounts. Though much of this activity (couponing etc.) would be illegal under the *Tobacco Act*, it is difficult to stop some kinds of discounting.

- A price-segmented market may tend to decrease the public health benefits of future tax increases — price-sensitive smokers will have the option of trading down, rather than quitting.

- A mix of ad valorem and specific taxes would be somewhat more complicated to administer than the present system.

- Ad valorem taxes make accurate revenue forecasts more difficult.

The experience in several European countries suggest price competition can keep margins down without leading to intolerable side-effects. However, non-tax barriers to entry may be higher in Canada, so a larger ad valorem component may be necessary here.

Mandated price ceilings

A frequent regulatory response to monopoly or quasi-monopoly situations is to impose price ceilings (e.g. for telephone rates or electricity). Regulated industries have to apply for permission to raise prices, usually by demonstrating some increase in their costs or need to pay for modernization. In the case of tobacco products, the newly created price regulator could presumably decide what level of promotional expenditures was reasonable (possibly $0?), which could greatly reduce the visibility of tobacco products and hence reduce consumption.[32]

The primary difficulties with this scheme are 1) administrative burden (legislation would be needed and a price-setting mechanism would be required) and 2) political feasibility. It might be difficult to explain why one arm of government was trying to keep cigarette prices down while another was trying to keep them up (through taxation).

On the other hand, it is ironic that price regulation exists for prescription drugs (including smoking cessation aids), doctors' fees, hospital services etc. — in short, for many parts of the tobacco 'life cycle' other than tobacco products themselves.

Progressive ad valorem taxation

The price ceiling effect could be achieved rather more simply through a modified ad valorem tax. Any (pre-tax) price increment above actual costs could be hit by a steeply progressive tax. In the present market, for example, a manufacturers' price of over $10 per carton could attract 20% tax to $15, 50% tax to $20, and 100% thereafter.

This would be easy to administer and should (if levels were properly adjusted) result in considerably fewer overt price wars than a straight ad valorem tax. However, it would be somewhat lacking in transparency — essentially, the Department of Finance would take over the role of a pricing authority in our price ceiling scenario, but behind closed doors.

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[32] For a more detailed discussion of cigarette price controls, see Cunningham R, "The case for profit control of the tobacco industry", *The Growing Epidemic: Proceedings of the Tenth World Conference on Tobacco or Health (1997),* 2000, pp. 689-691.

For a host of reasons, however, tax changes are politically easiest to implement.

Profit taxes

The federal government already imposes a surtax on tobacco company profit taxes; this could be increased in an attempt to directly capture the excess profits caused by the lack of price competition.

The problem is, of course, that the increase in the surtax would need to be massive, creating a tremendous incentive for tax avoidance through transfer pricing systems. BAT might decide to close all its Canadian production facilities and sell UK-made cigarettes to Imperial Tobacco at inflated prices to avoid declaring any profits in Canada.

And if profit taxes were actually successful at capturing most of the excess profits, they would *increase* the incentive to spend money on promotional activities, since business costs would become a cost to government, not to the manufacturers.

Why act now?

Absence of price competition is a long-standing feature of the Canadian tobacco market, as are exceptionally high profit margins. Given the recent rise of discount brands and increased competition from smaller manufacturers, it may seem to be an inappropriate moment to intervene to correct this particular problem.

However, there are good reasons why, on the contrary, this is a particularly good moment to address the oligopoly pricing issue:

1. There has recently been discussion, particularly at the provincial level, of a supposed need to enforce *minimum* prices on discount manufacturers, who are seen as undermining the health objectives of tobacco tax increases by offering cigarettes below the ‘natural’ (i.e. Imperial Tobacco-chosen) level. Minimum-price legislation *does* exist in quite a number of US states, though it seems to be related to a desire to prevent predatory pricing by large retailers from driving smaller retailers out of business. In the Canadian context, such legislation would effectively provide legislative reinforcement for oligopoly pricing.

2. Since BAT took control of 100% of Imperial Tobacco in 1999, there has been a shift in corporate strategy, with an increased emphasis on cost-cutting. Thus, manufacturing facilities have been closed, and recently the company announced its intention of phasing out long-term price subsidies to Canadian tobacco farmers. In both cases, these are rational decisions from a cost perspective, but Imperial Tobacco had historically chosen to accept a higher cost structure in order maintain a high level of tobacco employment in Canada, probably because it believed such employment provided leverage with governments to avoid stricter legislation

and higher tax levels. In short, BAT now seems willing to take more profits now rather than wait for larger profits in the future, which presumably explains why it raised prices so high that some room is now available for new entries into the market. There may also be a feeling amongst manufacturers that if they don't grab all the pricing room they can immediately, governments will occupy it.

3. The primary constraint on further tobacco tax increases at present is the fear of a resurgence of smuggling. Though these fears are almost certainly exaggerated, given the effectiveness of the export tax system in cutting off supply of major brands to potential smugglers outside the country, clearly governments would be more comfortable increasing tobacco taxes without increasing the potential profit margin for black-market operators. This can be achieved only by cutting manufacturers' margins.