The Wages of Sin Taxes

The True Cost of Taxing Alcohol, Tobacco and Other "Vices"

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Executive Summary

1. Governments have long relied on indirect taxes on consumer goods as a source of revenue. 'Sinful' items such as alcohol and tobacco have traditionally been taxed punitively and some have called for new taxes on fatty foods and sugary drinks, as well as a minimum price on a unit of alcohol.

2. Campaigners and politicians often cite astronomical figures as being the 'cost to the taxpayer' of certain products, but these statements have no foundation in economics. The studies which produce these figures are dominated by 'costs' which are neither financial nor borne by the taxpayer. They include hypothetical estimates of the value of a life year lost, earnings forgone due to premature mortality and expenditure by the consumer on the product itself. These figures are usually inflated, but even when they are plausible they cannot be used to justify sin taxes because these 'costs' affect only the individual; they are not paid by the taxpayer.

3. It is frequently claimed that consumers of 'unhealthy' products place an excessive burden on public services—healthcare, in particular—and that this justifies additional taxation in order to (a) reduce consumption of the sinful product, and (b) reimburse the state for the extra money it is forced to spend. This is not true. There is ample evidence that, on average, smokers and the obese are less of a 'drain on public services' than nonsmokers and the slim

because they spend fewer years withdrawing pensions, prescriptions, nursing home provision and other benefits. Their lifetime healthcare costs are usually lower than those who lead 'healthy lives'. If making consumers pay their way is truly the aim of public policy, the government would be more justified in placing a tax on fruit and vegetables.

4. The case of alcohol differs from that of tobacco and 'unhealthy' food in so far as there are additional externalities relating to violence, drink-driving and property damage. It is likely that drinking and drunkenness result in additional costs to the public purse which are not offset by savings and benefits, but these are covered by existing alcohol taxes with several billion pounds to spare. Just as smokers are subsidising nonsmokers, so drinkers are subsidising teetotallers.

5. As instruments of social engineering, sin taxes are blunt tools which are largely ignored by the target group while creating a range of unintended consequences which damage health, stoke criminality and, beyond a certain point, lead to the government receiving less tax revenue. They are a costly and inefficient means of attempting behavioural change.

6. Taxing goods which are price inelastic, especially those which are addictive, is far more likely to impoverish consumers than it is to turn them into abstainers. Alcoholics are rarely deterred from drinking by higher prices and there is evidence that tobacco taxes are now so high that further increases will yield diminishing returns. Many studies have concluded that 'fat taxes' and 'soda taxes' have little or no effect on rates of obesity. Such levies are better seen as stealth taxes than sin taxes.

7. Like virtually all indirect taxation, sin taxes hit the poor harder than the rich. Taxes on tobacco, sugar-sweetened drinks and 'junk food' are doubly regressive because they are disproportionally consumed by people on lower incomes. Placing a minimum price on alcohol would be extraordinarily regressive since it would deliberately target drinks which are consumed by the poor while leaving the drinks of the rich untouched.

Introduction

> *"The art of taxation consists of so plucking the goose as to obtain the most feathers with the least possible amount of hissing."*
>
> *—Jean-Baptiste Colbert*

Pianos, yachts, playing cars, medicine, alcohol, tobacco, beards, windows, carbon dioxide, lap dancers, airline tickets, petrol, salt, chocolate and tea. All and more have been taxed by impecunious governments; some because they are luxuries, others because they are essential. Commodities which are considered sinful or unhealthy traditionally attract the heaviest duties and it is these that are the focus of this paper. In particular, we shall look at the current bête noires of public health: alcohol, tobacco, sugar and fat. We shall call those who consume them 'the sinners' and those who abstain from them 'the saints'. The duties levied for the good of our physical and moral well-being we call 'sin taxes'.

It is easy to assume that sin taxes, like all other taxes, exist to raise money for the government and history gives us little cause to dismiss that assumption. Sin taxes have a uncanny habit of being imposed when politicians need to find cash quickly, particularly during wars. Beer duty increased tenfold in Britain during the First World War and rose sharply again during the Second World War. The USA fought both World Wars, the Civil War and the War of 1812 on the back of alcohol taxes. In Germany, taxes on cigarettes rose dramatically during the Second World War, particularly in the later years, until they made up 80 to 95 per cent of the price of a pack.[1]

Fiscal shortfalls during peacetime are just as likely to inspire taxes on vice. In 1791, George Washington introduced a tax on whiskey as a means of solving the fledgling US government's debt problem (it was swiftly followed by the Whiskey Rebellion). Two centuries later, Britain's Conservative government introduced a tax escalator on cigarettes to recoup some of the billions it had wasted trying to shore up sterling on Black Wednesday. In 2008, when the Labour Chancellor Alistair Darling had a credit crunch to tackle, taxes on tobacco, alcohol and petrol were the first to rise (unlike in the USA, the use of motor fuel has long been regarded as a minor sin in Europe). In so doing, Darling honoured the long-standing British tradition of turning the screw on smokers and drinkers when times are tough. Prior to the First World War, more than a third of all government revenue in both Britain and the USA came from duty paid on drink and tobacco.

Faced with his own budget deficit in 2009, Barack Obama raised the federal cigarette tax by 156 per cent, despite having promised a year earlier that "no family making less than $250,000 a year will see any form of tax increase."[2] Largely as a result of the president's U-turn, the federal government's sin tax revenue—including tobacco, alcohol, guns and ammunition—leapt from $14 billion in 2008 to over $20 billion.[3]

As the recession deepened, state governments raised taxes on petrol, tobacco, soda and bottled water.[4] Colorado started taxing sweets, Texas introduced a tax on lap dancing clubs (the "pole tax") and several states contemplated a tax on pornography (the "skin tax").[5] In Phoenix, Arizona, a 2 per cent tax on all food was levied to help pay off the city's $277 million debt, but when the policy encountered opposition from citizens, politicians considered taxes on tattoo parlours, strip clubs and escort agencies instead.[6] Meanwhile in Europe, Denmark and Hungary became the first countries in the world to introduce a 'fat tax' and, in 2012, France began levying a tax on sugar sweetened beverages. Politicians appealed to public health concerns to get these measures through, but with a tariff of just one cent per bottle, the French soda tax seemed more of a stealth tax than a sin tax.

The remarkable correlation between sin taxes and budget shortfalls suggests either that politicians become unusually puritanical when times are tough or that they see sinners as a ready source of cash. The evidence that austerity breeds morality is scant indeed. On the contrary, fiscal constraints are more likely to blind lawmakers' eyes to vice than to fill them with moral indignation. As early as the sixteenth century, the profligate, debt-ridden Pope Leo X was taxing prostitution, something Nevada is still contemplating in 2012. In 1964, America's first state lottery was established in New Hampshire as a means of repaying government debt without raising taxes.[7] In 2011, Washington DC became the first US jurisdiction to legalise (and, of course, tax) online gambling. California's decision to discuss marijuana legalisation in 2010 was unashamedly inspired by the state's crippling budget deficit. Prohibition itself was ended primarily because the government could no longer afford to keep alcohol revenues in the hands of gangsters once the Great Depression began. Various US states and several EU countries have recently been accused of lowering alcohol and tobacco duties to lure in their neighbours. These actions do not betray an overt concern for health and purity over base financial considerations.

Occasionally, a bona fide zealot will use sin taxes to register his heartfelt disapproval if he feels unable to enact total prohibition. In 1604, King James I raised tobacco duty by 4,000 per cent in a bid to stamp out a habit which he described as "loathsome to the eye [and] hateful to the nose".[8] His ideological descendent Michael Bloomberg, Mayor of New York City, has been on a crusade against tobacco ever since he gave up a 60-a-day habit. When he increased the tax on a pack of cigarettes from 8 cents to $1.42 in 2002, he announced: "If it were totally up to me, I would raise the cigarette tax so high the revenues from it would go to zero."[9] He has since jacked the tax up to $4.35 per pack, so we should hesitate before questioning his sincerity, but the revenues continue to pour in whether he is sincere or not. James I, however, was forced to drop the tax rise after a minor smuggling epidemic. He later reaped the rewards of his failed anti-smoking campaign by making the tobacco industry a royal monopoly.

The appeal of sin taxes to cash-strapped governments—and when are they not cash-strapped?—is plain to see. They are easier to collect than income taxes and less visible than direct taxes. "The honest way to raise more revenue would be to raise income tax rates," Peter L. Faber, a tax lawyer, told the New York Times. "But it is more politically attractive to tax these kinds of things. No one can get mad at you for taxing people who drink too much."[10]

Sin taxes can be portrayed as optional user fees on 'luxuries', even if genuine luxuries—which is to say, products primarily bought by the rich—go untouched. The commodities targeted by sin taxes usually have an inelastic demand and are disproportionately consumed by minorities. This makes them popular with majorities, particularly when the majority is assured that the money raised will be earmarked for a good cause. A survey of Israelis found that 60 per cent would support the redistribution of wealth from smokers and overeaters to those who "keep healthy habits".[11] A 2008 poll of New Yorkers found that 52 per cent would support a soda tax, but this rose to 72 per cent when told the money would be used for "obesity prevention".[12] In reality, it is rare for the spoils of a sin tax to be spent as intended. Typically, the money raised goes towards routine government projects and debt payments. Of the $25.3 billion the US government collected from state tobacco taxes in 2011, for example, less than 2 per cent was spent on smoking cessation.* [*3]

Having acknowledged the government's appetite for revenue, is it also true that sin taxes serve a higher purpose? Two arguments are made in their favour:

The first is that unhealthy habits place an economic burden on those who abstain and that this cost should be borne by the sinner. To do otherwise forces the abstainer to subsidise the lifestyles of others.

The second is that certain habits are morally and/or physically damaging to those who practise them. If we accept that the state has a duty to encourage its citizens to live healthy and/or moral lives, this objective can be achieved by making undesirable habits more expensive.

This paper will take both of these arguments in turn.

* When the state of Texas introduced its pole tax in 2008, it earmarked $12 million of the anticipated $40 million that would be raised to be spent on projects related to sexual violence, thus creating the unfounded and offensive suggestion that patrons of strip-clubs are rapists.[14]

The price of vice

Most Western democracies have retained enough of the liberal tradition for the most overt and intrusive forms of paternalism to remain unfashionable. Although one does not need to peer too closely at contemporary campaigns against drinking, smoking and overeating to see a moralising impulse which borders on the puritanical, the appeal to virtue is seldom voiced explicitly. Those who insist, with varying degrees of sincerity, that they have no objection to people drinking and smoking themselves to death so long as those filthy habits do not infringe on their rights are crudely echoing John Stuart Mill's harm principle. Fears about passive smoking have been singularly effective in turning a private pastime into a public peril worthy of government action. The smoking bans which followed have ostensibly been enacted for the protection of abstainers, but the potential to use secondary harm as a means of tackling primary behaviour has not gone unnoticed by the health lobby. It is not entirely surprising to find the terms "passive obesity"[15] and "passive drinking"[16] gaining currency at public health conferences in recent years.

Under this new, broader definition of passive harm, all negative externalities created by sinners are viewed as a burden on saints. These can include unambiguous acts of destruction, such as drink-driving fatalities, or very marginal costs such as aeroplane passengers having to subsidise the extra seat of a fat man. Foremost amongst these externalities are costs to the health service, which are widely assumed to be higher for smokers, drinkers and the obese. Abstainers who believe that they have had their pockets picked by gluttons and drunkards feel justified in calling for reimbursement. If the self-disciplined are paying for the medical costs of the reckless, what could be fairer than using Pigouvian taxes on unhealthy products to make the sinner pay the full price of his vice? This is perhaps the most powerful justification for sin taxes in developed countries today.

It is now customary for health campaigners of every hue to exploit the economic costs of sinful behaviour as justification for government action. The temperance group Alcohol Concern, for example, insists that "the cost of alcohol to society is estimated at £17-22 billion, or even as high as £55 billion".[17] The anti-smoking group Action on Smoking and Health says that "the annual cost of smoking to the national economy is £13.74 billion."[18] The National Obesity Forum claims that obesity places a burden of £17.4 billion on the UK in healthcare costs alone.[19] When such hefty figures are bandied about, it is easy to assume that drinkers, smokers and fatties are happily ratcheting up a hospital bill and handing it to their more abstemious fellows to settle. This implication is sometimes made explicit, as when Diane Abbot MP said: "Smoking is a killer that every individual pays for, whether you smoke or not. The cost of smoking to the UK is estimated to be over £13.7 billion a year."[20] When making the case for minimum pricing of alcohol, Sarah Wollaston MP said in the House of Commons: "What about taxpayers? The cost of the ['binge-drinking'] epidemic is out of control. It is at least £20 billion."[21]

But no matter whether the cost is said to be "to the economy", "to society" or simply "to the country", the figures which are routinely cited by campaigners and politicians are either false or grossly exaggerated. They are drawn from 'cost-of-vice' studies which, while not entirely without merit and purpose, are irrelevant to the question of whether sinful products require additional taxation because they do not tell us if abstainers are paying for sinners. When one examines the calculations upon which these ever-escalating estimates are based, it becomes clear that the bulk of the 'costs' are either paid by the sinner or are outweighed by unacknowledged savings and benefits. A large portion of the "cost to society" is not an economic cost in any real sense and is not—indeed, cannot—be paid by society, the NHS or the taxpayer.

Cost-of-vice studies are underpinned by two quite reasonable assumptions: that drinking, smoking and overeating result in consumers, on average, dying younger than they otherwise would, and being less healthy during their working lives. Since these studies began to be compiled in the 1960s, the grand totals have escalated significantly as more and more tenuous costs have been added to the mix. Today, they are dominated by three multi-billion pound costs:

1. Intangible costs of premature mortality and emotional distress

2. Lost productivity due to absenteeism, sickness and death

3. Expenditure on the product itself

Of the £13.74 billion that smoking is said to cost Britain, for example, more than £10 billion consists of lost productivity as a result of death, absenteeism and smoking breaks. Of the £25 billion that obesity is said to cost the UK, only £1.15 billion is related to public services, principally healthcare; the rest is made up of private costs borne by the obese themselves and, in a strange twist, by those who stay fit.

Table 1 shows five influential British cost-of-vice studies. Costs which are partially or wholly borne by the taxpayer are shown in bold.

Table 1

Estimated social costs of alcohol, tobacco and obesity (£ billions)

	Smoking Policy Exchange 2010	Drinking British Cabinet Office 2003	Obesity NSMC 2006	Smoking NSMC 2006	Drinking NSMC 2006
Intangible costs		4.7	7.4	16.8	16.1
Lost productivity	10.2	5.5	2.5	3.9	7.3
Welfare payments				**0.97**	**1.6**
Healthcare costs	**2.7**	**1.7**	**1.15**	**2.6**	**3.2**
Private healthcare/ nursing			0.86	3	5
Crime/fire (private costs)		5.1			4.2
Crime/fire (public costs)	**0.8***	**2.2****		**0.15**	**1.8**
Expenditure on product			13	14	8
Prevention			0.13	0.1	1.6
Total	13.7	19.2	25.04	41.52	48.8
Total paid in part by government (% of total)	**3.5 (25.5%)**	**3.9 (20.3%)**	**1.15 (5%)**	**3.72 (9%)**	**6.6 (13.5%)**

** Includes £507 million resulting from house fires caused by smoking. A large but unspecified proportion of this total is made up of private damage to the smoker's own property and is therefore not an external cost.*

*** Includes £0.5 billion for drink-driving, most of which are private costs.*[22]

Intangible costs

Intangible costs are subjective valuations of lost years of life, emotional distress, pain and disability. Putting an economic value on life is a controversial exercise and, like much else in this chapter, the concept of valuing "a statistical life" might seem distasteful, but such calculations are necessary if governments are to use finite resources wisely. Not every cancer drug can be afforded and not every environmental regulation can be implemented. If the cost of a policy exceeds the value of the statistical years of life that are likely to be saved, government agencies will direct their money towards more efficient schemes.

The most common way of valuing a statistical life is to observe the risks people are prepared to take for money—the "willingness-to-pay" model. The wage a person is prepared to accept for taking a hazardous job gives us a crude indication of how much they value their life, as does the amount they are prepared to spend on safeguarding their health and security. Focusing on wage-risk tradeoffs is far from ideal. One problem is that the poor are less risk-averse than the rich, which implies that their lives have less value. A further drawback is that the willingness-to-pay model focuses on people who are fit and capable of work, rather than the elderly people who are more likely to be unwell, disabled and lonely, and therefore less inclined to place a high value on their remaining years. This is a major drawback for cost-of-vice studies because the years gained from abstaining from unhealthy pleasures are mainly granted to the elderly.

Based on the willingness-to-pay model, economists have come up with a broad range of estimates for the value of a statistical life ranging from $1.5 million to $12 million (in 2000 dollars)[23], with $100,000 per year being a typical benchmark.[24] Government agencies lean towards the lower end of these estimates. The UK's Department of the Environment, Transport and Regions uses a figure of £1.2 million per life and that is the figure used in the studies summarised in Table 1.[25]

In addition to putting a price on years of life lost, some researchers have added a subjective value of around $50,000 for each year spent with illness, pain or disability.[26] This, combined with loss of life years, has enabled researchers to construct astronomical costs of smoking, drinking and obesity which strain credibility. As Sloan et al. note in their book The Price of Smoking, "Using the willingness-to-pay value of lost lives, some estimates of smoking-attributable cost have exceeded the gross domestic product of the U.S. manufacturing and health sectors, which is implausible".[27] When Sloan et al. used their preferred method of the 'life cycle' model, they found that "the cost of smoking is not great and may even be cost saving."[28] Despite the known tendency of the willingness-to-pay model to greatly exaggerate the emotional costs of unhealthy habits, most cost-of-vice studies continue to employ it and these costs invariably make up over a third of the total 'costs to society'.

Intangible costs are entirely non-financial and do not represent a bill that has to be paid. Most cost-of-vice studies explicitly acknowledge this, for example:

> *By their nature, intangible costs cannot be shifted. For example, there is no mechanism by which the costs of loss of life can be passed on to others. Thus individuals bear both the impact and the effective incidence of all intangible costs.*
>
> *—Collins and Lapsley, 2008* [29]
>
> *Intangible costs can only be borne by individuals and do not have (productive) resource implications for society.*
>
> *—BERL, 2009* [30]

Being hypothetical by nature and arbitrary in construction, intangible costs can be very broadly defined. Some researchers have stretched the definition to breaking point. The British Cabinet Office cost-of-drinking report valued the "emotional distress" suffered by victims of drink-related muggings at £2,400, but this is conservative by the standards of some studies. Laslett et al. adds $6.4 billion (Australian) to their cost-of-drinking total as an intangible cost levied on those who have been "negatively affected" by other people's drinking. These psychological costs include incidents in which people have been "emotionally hurt or neglected" or had "a serious argument without physical violence".

Drinkers who "fail to do something they had been counted on to do" or "negatively affect a social occasion" are also held responsible for millions of dollars worth of psychological damage. Further examples of "alcohol-related harm" include the emotional costs of "avoiding drunk people or places where drinkers are known to hang out", being "annoyed by vomit, urination or littering" and feeling "unsafe in a public place."[31] With such an inclusive definition of harm, it is little wonder that such costs add up to billions of dollars, but since they remain hypothetical and abstract, they do not justify a Pigouvian tax.[32]

Lost productivity

Unlike intangible costs, the income a person would have earned had he lived longer and had fewer sick days is relatively easy to quantify, but like intangible costs, it is the sinner himself who misses out on this income. As Warner says, "the fruits of the smokers' labour represent private benefits to their families; conversely the loss of smokers' labour imposes costs on the smokers' families, not on the society at large".[33] Lost productivity in the workplace can only occasionally be viewed as an external cost, and almost never as a public cost.

It can be argued that absenteeism and lost productivity involve some cost to the employer, but businesses can, and do, penalise unproductive staff by withholding pay rises, overlooking them for promotion and dismissing them. They can also chose not to hire smokers, alcoholics and the obese in the first place. (Some employment laws forbid such discrimination, but if this leads to a loss in productivity, this can be more properly viewed as an unintended cost of the legislation.)

Productive workers are rewarded; unproductive workers are not. This is true regardless of whether the worker drinks, smokes or spends too much time on Facebook. Ultimately the price of lost productivity is paid by the employee, as Crampton et al. note:

> *Employer and employee are bound by a contractual nexus; the worker's reduced productivity is internal to his relationship with his employer. A less productive employee is less likely to receive future promotions and salary increases; he bears the burden of his reduced productivity. Firms that fail to detect worker productivity and promote workers beyond their worth will eventually go under.*[34]

The argument for viewing lost productivity as a negative externality imposed on society is that the sinner deprives the state of tax revenue by selfishly dying before his time. Aside from the questionable assumption that individuals have a duty to maximise their productivity for the good of the state, this argument falsely assumes that a person's job dies with them. Cost-of-vice studies assume full employment, which is hopelessly optimistic in the twenty-first century. In reality, the job will be taken by someone who will likely pay the same rate of tax. The loss to the treasury is confined to a small shortfall in tax revenue for a few weeks while a replacement is found, but even this negligible cost will be offset by savings in unemployment benefit payments as a new worker enters the workforce. As for the employer, he will be saddened by the loss of an experienced worker, but it is most unlikely that a like-for-like replacement will be unavailable. The only external cost to the company is the money spent recruiting a new employee. This "friction cost" has been estimated by the World Health Organisation to be only 1 to 3 per cent of the human capital estimates used in cost-of-vice studies.[35]

Even if we make the wrong-headed assumption that premature mortality reduces tax revenue, it does not follow that the treasury is made worse off. By losing a tax-payer, the government has lost a citizen who was paying into the communal pot, but it has also lost someone who was taking from the communal pot. As Crampton et al. have pointed out, the state would only lose money if the sinner was paying more in tax than he was receiving in benefits, but there is no reason to think that smokers, the obese and alcoholics fit this profile. On the contrary, these groups tend to be drawn from the lower classes and pay less tax than average while receiving more in benefits, tax credits and welfare payments.[36]

Cost-of-vice studies typically include lost earnings from premature mortality, absenteeism and sickness, but some have been more inventive. Several studies have put a price on lost domestic productivity due to premature death, but in so far as this is a cost, it is neither external nor financial. Household chores have no economic value and only need to be performed as long as the sinner is around to perform them. It is not as if the deceased requires a nonsmoking, teetotal taxpayer to clean their house and iron their shirts after they die.[37]

Scraping a similar barrel, Laslett et al. include $400,000 as the "opportunity cost of time spent calling police" about drunks. This is based on the average length of such phone calls multiplied by the average Australian wage, as if someone reporting a fight outside a bar at midnight would otherwise be making widgets. Time lost due to driving drinkers to and from venues is also included, as is the cost of "cleaning up after the drinker". Filed under "lost productivity", expenses of this kind add a further $9.3 billion to the total.[38]

One influential British report (Nash and Featherstone, 2010) included the cost of smoking breaks, which at £2.9 billion a year was found to be more expensive than the total healthcare costs of treating smoking-related diseases.[39] This calculation was based on the hours spent smoking at work multiplied by the average hourly wage—a simplistic method which assumes that an employee's productivity is evenly spread throughout the day. A more worldly view would take account of the peaks and troughs of working life in which breaks are snatched during quiet times or are organised so that all employees can take advantage of them. Most enlightened governments view breaks as essential for raising productivity and relieving stress, which is why they are included in employment laws. It is also why non-smokers take breaks, although Nash and Featherstone decline to estimate what burden nonsmokers' breaks impose on the economy. In truth, breaks are no more a "cost" than early retirement or the convention of not working at weekends, but even if they did reduce worker productivity, the cost would ultimately fall on the smoker who finds himself passed over for promotion in favour of nonsmokers.

If we engage in a further flight of fancy by accepting the notion that employers and co-workers are financially penalised as a result of the absenteeism of sinners, it must be noted that it is not they who will be compensated by sin taxes. If higher prices make the sinner give up his vice, the employer may benefit modestly, but, as we shall see later, quitting is unlikely. Sin taxes typically result in the employee paying a higher cost while the government receives more income and the employer gets nothing. If employers truly benefit from having an abstemious workforce, they would sack the sinners or not employ them in the first place. The fact that they do not generally discriminate against smokers, moderate drinkers and the overweight suggests that there is either a serious market failure which has gone unaddressed for centuries or that the lost productivity costs of employing sinners are insignificant. In the case of alcohol, a number of studies have shown that moderate drinkers earn 10 per cent more than teetotallers, which is incompatible with the idea that they are less productive.[40] Most cost-of-vice studies ignore these, and other, benefits.

Expenditure

Virtually none of the costs outlined above can be considered negative externalities, let alone costs to the taxpayer. Individuals bear all intangible costs, all lost income costs and nearly all costs of absenteeism and lost productivity. The third major 'social cost' of vice is also paid entirely by the individual: the money spent on the product itself.

An influential report from the UK's National Social Marketing Centre included all the money spent on alcoholic drinks that are "misused" as a social cost (estimated to be a quarter of alcohol expenditure, or £8 billion), as well as the nation's entire expenditure on tobacco (£14 billion). A study from New Zealand was still less cautious in assuming that fully half of all alcohol is misused and, therefore, that half of all expenditure on alcohol is a "cost to society".[41]

There is no doubt that the costs of buying beer, burgers and cigarettes are tangible and easily quantifiable, but there is no less doubt that these costs are met by the consumer and cannot be viewed as externalities without resorting to sophistry. Bafflingly, one British cost-of-obesity study included all the money spent on low calorie food, gym memberships and fitness equipment. The authors insisted that this sum—a whopping £13 billion per year—could be "attributed to obesity or fear of obesity".[42] In so far as this is a cost at all, it is surely the cost of staying slim, and its inclusion provided further evidence that the real aim of cost-of-vice studies is to throw as many figures into the mix until the total exceeds that given in the last cost-of-vice study.

Some cost-of-vice studies have shoe-horned expenditure into their final tally by claiming that money spent on sinful products is irrational and that their consumption has no benefit, even to the consumer. Others have argued that the resources used in their manufacture could be put to better use making more wholesome products. These arguments owe more to ethics than economics.

Industries which employ millions of people for the purpose of making popular products to be sold around the world are normally viewed as a Good Thing. The money spent on the product pays the wages of farmers, manufacturers, retailers and a long chain of suppliers. The British drinks industry, for example, is directly or indirectly responsible for approximately one million jobs.[43] In cost-of-vice studies, this kind of economic activity is either ignored or treated as a further cost which is not offset by the benefits of consumption. (Some studies acknowledge a few benefits, but these are small, arbitrary and related only to health.)

The authors of one cost-of-smoking study mention the global turnover of British American Tobacco (£33.9 billion per year) and acknowledge the "thousands of newsagents that rely upon the sales of tobacco to remain profitable". Having paid lip-service to this economic activity, they then explain that such benefits are not included in their analysis because "were people not to spend money on cigarettes, they would direct their expenditure elsewhere."[44] This may be true, but the same could be said of any product. If coffee was banned worldwide, consumers would direct their expenditure elsewhere, but this does negate the coffee industry's contribution to the global economy.

One Australian study combined a fifth of the nation's alcohol expenditure with all tobacco expenditure to arrive at a figure of $5.3 billion (Australian) as the cost of "resources used in abusive consumption."[45] This is more than twice the amount spent by the Australian health service to treat alcohol- and tobacco-related diseases. Ordinarily, this expenditure would be viewed as a benefit to the economy, but the authors argue instead that if farm land was not used to produce tobacco, hops or grapes it would be used for some other purpose. Again, this may be true—although the alternative crop must be less profitable otherwise it would already be grown—but having made this assertion, they argue that money spent producing tobacco and alcohol should be seen as further costs of "drug abuse".[46]

> *If all drug abuse ceased to exist, the consequent reduction in consumption would release resources which could be used for other consumption or investment uses. Thus, on the basis of the definition of tangible cost adopted in this study and earlier studies, the resources used in abusive consumption represent one of the costs of drug abuse.*

One wonders whether the authors would make the same case if Australia's wool industry or potato industry was under threat. To illustrate by way of analogy, imagine a company which has just announced the closure of a factory with the loss of 200 jobs. Explaining the decision to his soon-to-be-redundant staff, the CEO explains that the factory will probably be used for some other purpose and that the closure will "release resources" into the economy, including the premises and 200 workers. Further imagine him insisting that the company had been a drain on society for years by keeping the factory out of the hands of other industrialists and that he had burdened society by keeping his workers out of the job market. He concludes by saying that the factory closure will save society a small fortune. The CEO would need to be blessed with great charisma and a quick pair of legs to get away with such a line.

In the world of cost-of-vice studies, the manufacture of sinful products has no economic value because people would only spend their money elsewhere. Likewise, jobs which depend on the vice being produced have no economic value because the employees would only work elsewhere. This logic is not rooted in economics and it is difficult to ignore the nagging suspicion that the economic benefits of tobacco, alcohol, sugary drinks and fatty foods are only turned into costs because the authors have decided that these products have no moral value. This underlying assumption is made explicit in one cost-of-vice study, which states:

> *We assume that it is irrational to drink alcohol to a harmful level and that*

harmful use has zero private benefit.[47]

The same study concedes that there are benefits from drinking at a non-harmful level, but adds: "As these impacts are benefits, however, they do not fall within the scope of this study on the social costs of harmful drug use."[48] Any habit will end up looking costly through this kaleidoscope.

The idea that sinners are irrational consumers starts with the premise that health and longevity are the ultimate goals of existence, that any habits which put them in jeopardy can have no value and any money spent on them is wasted. This is a perfectly valid opinion, but it is no more than that. It may well be the case that seventy years of gluttonous levity is inferior to eighty years of ascetic self-denial, but this cannot be proven either way and it will forever remain a matter of personal judgement. Those who take a chance on the seventy year option are not irrational and there can be rational reasons for taking risky decisions. As Sloan et al. note: "Smokers did not seem to dread premature mortality, especially if death were quick and painless. However, they did dread the prospect of living in a nursing home or living in the community but being dependent on others for performing basic personal tasks, such as bathing and eating."[49] The smoker, drinker and overeater may later regret his decisions, but this is true of all consumers at one time or another. Are we to use taxation to prevent buyer's remorse? If so, we open a Pandora's Box which can never be closed.

No consumer is perfectly informed and no consumer is consistently rational, but the private benefits he derives from drinking cocktails and eating crisps are real nonetheless. We cannot turn these private benefits into public costs merely because they do not fit the moral framework of one group of abstainers. In cost-of-vice studies, however, the abstainer is infallibly rational while the sinner is self-destructive and wasteful. Even when he is well informed about the health risks, as nearly all smokers are, he remains ignorant. His personal spending becomes a public expense and the benefits derived become social costs.

Far from being a cost to society, expenditure on a product gives us an indication of how much it is valued. Mainstream economics tells us that the benefits derived from consuming a product are greater than the price paid for it, otherwise the individual would spend his money elsewhere. If Britons spend £30 billion a year on alcohol, we must assume that the benefits they derive from drinking it (in the form of pleasure, taste, sociability, inebriation, etc.) is worth at least £30 billion. Their expenditure is a tangible private cost which they are willing to pay to enjoy greater private benefits. The campaign for sin taxes implicitly acknowledges this trade-off by seeking to raise the price of a product to the point where the benefits no longer outweigh the cost. If a person is deterred from buying a drink as a result of a sin tax hiking the price up from £3.00 to £3.50, we can infer that he values that drink somewhere between £3.01 and £3.49.

Any study seeking to calculate the social cost of smoking or drinking should either ignore expenditure altogether or balance it with the benefits derived.* Most cost-of-vice studies do neither. Instead, they ignore the benefits and treat private expenditure as a public cost. This would be questionable practice in any analysis, but it is doubly dubious when the product's price is already inflated by a sin tax. In Britain, tobacco duty makes up more than 80 per cent of the cost of a pack of cigarettes and alcohol duty makes up 45 per cent of the price of a bottle of wine.[50] The justification for such punitive taxation is that the revenue raised offsets the costs of smoking- and alcohol-related diseases, but cost-of-vice studies do no such offsetting. On the contrary, they include the amount raised in taxation as a further cost!

For most commodities, economists assume that the benefits exceed the price paid. In the case of addicted consumers, however, the benefits may fall below the price. Brian Easton, for example, suggests that the benefits derived from smoking equate to just eleven per cent of tobacco expenditure, based on the assumption that 89 per cent of tobacco consumption is prompted by addiction. This implies that addicted consumers derive no benefit at all from smoking, which is most unlikely, but whatever the true figure may be, it is not zero.[51]

If expenditure on a product is a cost to society, all goods and services are a drain on the economy. This makes no sense. For example, British consumers spend £46 billion on clothes every year.52 It is doubtless true that many shoppers find that they wear the clothes less often than they thought they would and derive less pleasure from them than they expected. Some may even wish they had never bought them at all, but few would argue that this makes the money spent on them a cost to society, let alone that clothing should be taxed to compensate nudists for their loss.

Costs against benefits

The three big costs discussed above—intangible costs, lost productivity and expenditure—typically make up between fifty and ninety per cent of cost-of-vice estimates. There is nothing necessarily wrong with putting a monetary value on the intangible and emotional impact of an unhealthy habit, but such an analysis is only worthwhile if the costs are weighed against benefits. Cost-of-vice studies do not do this. Instead, they combine greatly inflated financial costs with the most tenuous intangible costs while ignoring every emotional benefit and the vast majority of financial savings. So few benefits are mentioned in these studies that one begins to wonder why so many billions of pounds are spent on alcohol, cigarettes, soft drinks and high calorie foods in the first place.

A large proportion of the "costs to society" are non-financial and those which are financial overwhelmingly fall on the sinner. Furthermore, most of the private costs do not need to be paid because the sinner is dead when he incurs them and the relatively small number of costs which affect employers, co-workers and other private individuals cannot be recouped through sin taxes because those taxes go directly to the state. As a guide to politicians contemplating sin taxes, they can only serve to mislead.

Once private costs and intangible costs are excluded, we are left with a relatively small number of genuine externalities created by sinners which are paid, in part, by the saints. These are the only costs which should concern policy-makers, as the International Center for Alcohol Policies recognises:

> *...estimates of total costs provide little guidance on the optimal level of tax rates, because economic theory suggests that excise taxes should be based only on the costs drinkers impose on others, not on themselves.*[53]

In practice, the only policy-relevant costs are those borne by the health service, fire brigade and social services. In the case of alcohol, we might add the police force, criminal justice system and prison service. But here we meet a familiar problem. Cost-of-vice studies only show us costs. They do not show savings. We do not see, for example, the pensions payments and nursing care costs saved by premature mortality. Cost-of-vice studies evaluate the healthcare costs of the average sinner, but these costs are meaningless unless we know the healthcare costs of the average saint.

To be fair to the authors of such reports, they usually make it clear that they are producing cost studies, not cost-benefit analyses. The authors of a 2011 cost-of-drinking study state that:

> *Addressing the benefits of excessive alcohol consumption was beyond the scope of the current study. Studies such as this one focus solely on identifying and quantifying the societal costs of excessive drinking.*[54]

The same proviso was made in the British Cabinet Office study, which is the source of the oft-cited claim that alcohol costs Britain more than £20 billion a year.

> *...a cost study should not give incomplete, and partial consideration to benefits associated with alcohol consumption.*[55]

Many cost-of-vice studies are characterised by a morbid fascination with tallying every conceivable cost and a squeamish refusal to consider benefits. Sloan et al., for example, state that:

> *We have not attempted to value the benefits in this study. Although, in principle, it would be possible to value benefits using techniques developed in economics and marketing, we would be left with the question of whether public policy should rely on private valuations of the benefits of such a harmful habit as smoking.*[56]

This reluctance to look at benefits as well as costs has led to a fundamental imbalance in the literature. Even virtues would be a cost to society under such a methodology. The real question is whether abstainers are subsidising sinners, but that requires us to know how much sinners are saving us. As distasteful as the idea of counting the financial benefits of premature mortality may be, we cannot calculate the net cost of a behaviour without doing so. Readers who felt uncomfortable with putting a financial value on life earlier in this chapter are warned that things are about to get a good deal worse.

Public costs

Do sinners cost more to keep than saints? It is widely believed that they do, but a simple thought experiment shows this to be unlikely. Consider two scenarios. In the first, the entire population dies at the age of 70. In the other, the entire population dies at the age of 90. Assuming an average retirement age of 65, it should be obvious that the second scenario will cost the government more in pensions, prescriptions, long-term care, healthcare and benefits.

When researchers study the costs of looking after saints and sinners over a lifetime, this is exactly what they find. Successive studies carried out over four decades have shown that although smokers require more healthcare expenditure during their working lives, nonsmokers require greater expenditure in pensions, nursing care and welfare payments. This was understood as early as 1983 when Leu and Schaub concluded that:

> *...lifetime expenditure is higher for nonsmokers than for smokers because smokers' higher annual utilization rates are overcompensated for by non-smokers' higher life expectancy... Thus the results imply that smoking does not increase medical care expenditure and, therefore, reducing smoking is unlikely to decrease it.*[57]

Leu and Schaub's conclusion has been quietly echoed ever since. Barendregt et al. (1997) concluded that a decline in smoking prevalence would lead to a short term reduction in healthcare costs, but that they would rise again after fifteen years when the erstwhile smokers began to age. They estimated that if everybody stopped smoking, national healthcare costs would rise by 7 per cent in the long term.[58]

Lippiatt (1990) found that every 1 per cent decline in US cigarette sales increased life expectancy by 1.45 million years. Good news for public health, but this 1.45 million years added $405 million to the nation's medical costs, whereas a 1 per cent increase in cigarette sales saved $480 million. The reason for this is uncomplicated:

> *If we do not die from smoking in the short run, we will eventually die of old*

age in the long run. Further, the types of ailments that afflict us at older ages tend to be protracted and expensive.[59]

To say that everyone has to die of something is to state the crushingly obvious, but cost-of-vice studies implicitly assume that abstainers are either immortal or are destined to die in a state of perfect health.* In truth, the choice is not between vice-related disease and infinite health, but between "relatively cheap lethal diseases or rather expensive chronic ones", as van Baal et al. (2008) put it.60 Unfortunately, the chronic diseases associated with long life are more expensive than the lethal diseases associated with vice. "Successful prevention of obesity," van Baal et al. concluded, "increases life expectancy." However...

Unfortunately, these life-years gained are not lived in full health and come at a price: people suffer from other diseases, which increases health-care costs. Obesity prevention, just like smoking prevention, will not stem the tide of increasing health-care expenditures. The underlying mechanism is that there is a substitution of inexpensive, lethal diseases toward less lethal, and therefore more costly, diseases.[61]

The fallacy of immortality has led researchers down some peculiar roads. Laslett et al., for example, include the cost of arranging funerals for sinners. Aside from being a private cost, it is clearly not an expense that can be forever postponed (p. 8).

In his study of mortality in the Netherlands, Bonneux found that coronary heart disease was responsible for 19 per cent of deaths but only 2.7 per cent of health-care costs. Lung cancer was responsible for 5.6 per cent of deaths, but only 0.75 per cent of healthcare costs. It is this replacement of short, lethal diseases with chronic, expensive diseases which explains most of the difference in healthcare costs over a lifetime.

Van Baal et al. (2008) estimated the lifetime healthcare costs of smokers and the obese and compared them with the lifetime healthcare costs of a "healthy-living cohort" of nonsmokers who were a healthy weight. This is the relevant comparison to make if we are to establish whether a Pigouvian tax is justified. The results are shown in Table 2.

Table 2

Estimated lifetime healthcare costs (van Baal, 2008)

	Obese cohort	Smoking cohort	Healthy-living cohort
Life expectancy at age 20	55.9 years	57.4 years	64.4 years
Cost of cancers	€5,000	€8,000	€5,000
Cost of heart disease & stroke	€25,000	€26,000	€25,000
Cost of diabetes	€9,000	€2,000	€2,000
Cost of other diseases	€211,000	€185,000	€249,000
Total lifetime healthcare costs	€250,000	€221,000	€281,000

These are only the healthcare savings. Other studies have found savings in nursing care provision, social housing and pensions. For example, one Canadian study found that: "In the pension area alone, non-smokers benefit from a transfer of $1.4 billion mainly because smokers tend to die before non-smokers do".[62] As early as 1971, the British government had calculated that a 40 per cent decline in smoking prevalence would lead to a £39 million increase in social security payments.[63] Sloan et al. came to a similar conclusion in their study of the USA:

> *Smokers, due to higher mortality rates, obtained lower lifetime benefits compared to never smokers, even after accounting for their smoking-related lower lifetime contributions... It is evident from our analysis that the negative externalities to Social Security contributions from smokers are more than offset by the net losses incurred by smokers due to their reduced benefit receipt.64*

And on the subject of old age benefits, Gruber and Koszeginote (2008) wrote:

> *In the past, smokers have typically died around retirement age, so that they do not collect the retirement benefits to which their tax payments entitled them. In this situation, smokers are exerting a positive financial externality on nonsmokers: smokers pay taxes to finance the retirement benefits but do not live long enough to collect their benefits, leaving the government more money to pay benefits for nonsmokers.*[65]

This effect is not confined to the vices of smoking, drinking and obesity. Any health intervention which extends longevity is likely to increase healthcare costs. As the economist Louise Russell told the Washington Post in 2011: "The evidence of hundreds of studies over the past decades has consistently shown that most preventive interventions add more to medical spending than they save."[66] Russell estimated that four out of five preventive health measures result in a rise in net healthcare costs, but, ironically, four out of five Americans believe that preventive health measures save money.[67]

Few who are familiar with the evidence would disagree with Klim McPherson's verdict that: "Obese people cost less because individuals die younger and hence with less chronic morbidity associated with old age... Smokers cost still less."[68] Since the bulk of the costs in cost-of-vice studies are not borne by the taxpayer, and those which are borne by the taxpayer find that smokers and the obese are in credit, there is no justification for Pigouvian taxes on tobacco or food.

The case is less clear-cut when it comes to alcohol because there are additional externalities relating to violence, drink-driving and property damage.* Drinking has economic and medicinal benefits, but these are probably outweighed by the health and social costs of excessive drinking. However, drinkers differ from smokers and the obese in that they are in a clear majority—only 14 per cent of Britons do not drink at all. Any sin tax on alcohol is therefore a further cost incurred by the majority to pay for the sins of a minority. Heavy drinkers will inevitably pay more than moderate drinkers because they buy more units, but all drinkers will lose money and it is questionable whether the benefits of a sin tax spread so widely will outweigh the costs. Only complete abstainers would unambiguously benefit, but there are health risks associated with teetotallism which are seldom taken into account in cost-of-vice studies.[69]

Nevertheless, even if we use the broadest estimates offered to us in British cost-of-vice studies, the publicly borne costs of drinking amount to less than £7 billion a year. Notwithstanding the fact that these figures exclude the benefits of alcohol, this is less than the £9 billion received by the state each year in alcohol taxes.

* Many of the costs of crime attributed to alcohol are tenuous and inflated. In the British Cabinet Office study, expenditure on security alarms, insurance, lights and other crime prevention systems are included, totalling £1.5 billion. These devices may help guard against drunken crime, but most would still be purchased in its absence. Although campaigners often treat the estimates from this study as conservative, its author makes it clear that they are at the very top end of what is plausible.

Although alcohol, unlike tobacco and high-fat foods, probably places a net cost on public services, this cost is amply exceeded by existing sin taxes.

The myth persists

Despite general agreement in the scientific literature that smokers and the obese are not a burden on the health service, it is widely believed that the opposite is the case. The way cost-of-vice studies are misrepresented by campaigners makes confusion inevitable. Few people put a monetary value on intangible social costs in everyday life and it is easy to mistake a "cost to society" for a monetary cost to the taxpayer. At its absurd extreme, this confusion leads to elected politicians standing up in the House of Commons to say (of alcohol) that "the cost to the NHS could be as high as £55 billion a year".[70] This figure is derived from the NSMC study which includes, amongst many other private costs, £8 billion spent on alcohol and £16 billion of intangibles. Even if the politician does not understand how the figures are compiled, an estimate of £55 billion should strike him as implausible since the entire NHS budget is only £106 billion.[71]

Such befuddled thinking is commonplace. In 2011, the Australian newspaper The Age contemplated what would happen if tobacco were prohibited entirely.

> *About 17 per cent of Australians smoke, and a ban would cost the government about $6 billion a year in lost revenue. This would be offset by health savings, as the annual smoking-related medical burden tops $31 billion.*[72]

The latter figure comes from a cost-of-vice study which arrived at a total of $31.5 billion, two-thirds of which consisted of subjective estimates of the value of life lost. Nearly all of the other major costs were borne by the individual, leaving barely 1 per cent of the total 'cost' to be picked up by the taxpayer, including an annual smoking-related medical burden of just $0.3 billion. Had the journalist read the study itself, she would have found an important note tucked away on page 72:

> *Tobacco tax revenue in 2004/05 exceeded tobacco-attributable costs borne by the public sector by over $3.5 billion.** [73]

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* *Two pages earlier, in reference to alcohol, the authors came to a similar conclusion regarding drink: "Alcohol tax revenue in 2004/05 exceeded alcohol-attributable costs borne by the public sector by $1.4 billion."*

The problem with most cost-of-vice studies is, as Sloan et al. noted, that they are usually policy-driven, and the policy is to increase taxes.

> *...estimates of smoking-attributable cost often have been developed by advocates of a particular policy position, not as a guide to appropriate policy but rather as support for a position developed independently of the estimates... the estimates are in effect weapons, either to attack adversaries who oppose one's position or to be used in self-defense.*[74]

In 2010, the Policy Exchange, a British think-tank, calculated the societal costs of smoking and, in a report unsubtly titled *Cough Up*, claimed that: "Every cigarette smoked is costing us money... Cigarettes are being under-taxed by £1.29 per packet which amounts to £2.82 billion in lost revenue for HM Treasury."[75] The claim that smokers were not paying their way hinged on the premise that the £10 billion raised in tobacco duty each year was less than the Policy Exchange's £13.7 billion 'cost of smoking' estimate, but three-quarters of this estimate was already borne by private individuals, including £4 billion of lost earnings.*

When campaigners began demanding 'junk food' taxes and soda taxes in Australia, they turned to a cost-of-vice study which had claimed that obesity was costing the country $58.2 billion. A quick read of the study would have told them that $49.9 billion of this was "non-financial" and yet the figure was used as proof that the fat were a drain on the economy. It took an actuary named Geoff Dunsford to take an interest in the estimates before the distinction between intangible emotional costs and actual financial costs was explained to the Australian people. One can sympathise with Dunsford's exasperation at the inclusion of non-financial costs which made up 86 per cent of the 'costs of obesity':

> *"How come this is included in a total in an announcement which appears—at least superficially—to represent real money costs?"*

One can also sympathise with the Sydney Morning Herald journalist who ended his report on the matter by concluding:

* Perhaps because smokers typically die after the age of 65, this study made the unusual assumption that smokers retire at 75, thereby giving them an extra ten years of potential lost productivity. The authors took another leap of faith by assuming that all deceased smokers would otherwise have "lived a full life to their retirement and that their productivity would not have been affected by any other health problems."[76]

Dunsford's work is further proof that we can't place much store in lobby group costs claims. It's more a case of plucking out a big number and working out some methodology to justify it.[77]

The myth that smokers, drinkers and the obese are leeches on the taxpayer's arteries persists because the government has no incentive to tell the public that these groups are being exploited and the affected industries dare not advertise the savings that come from lives being cut short by excessive use of their products.

On only one occasion has an industry attempted to make the case against sin taxes based on the hard truth that longevity is expensive. In 2001, Philip Morris—the maker of Marlboro cigarettes—funded a study in the Czech Republic which showed that savings in welfare payments, healthcare and housing for the elderly were greater than the costs of smoking-related diseases, lost tax income and house fires. It was an immediate and unsurprising public relations disaster. The anti-smoking group Action on Smoking and Health described the study as "repellent",[78] a prominent American anti-smoking campaigner called it "egregious"[79] and a spokesman for the Czech government told the New York Times: "It is ethically unacceptable to think and write about human life in those categories."[80] Although Philip Morris stressed that they were not suggesting that smoking was a benefit to society, the backlash was enough to ensure that neither they nor any other company has used cold economic facts to challenge the cost-of-vice orthodoxy since.

It goes without saying that policy should not be based on the savings that come from premature death and disease. Nevertheless, it is the campaigners—not the sinners—who raised the economic argument and they have no cause to be indignant when it is shown to be spurious. They have been highly effective in portraying smokers, drinkers and the obese as a drain on the economy, and since no one wishes to be thought egregious by pointing out the truth, the savings of vice remain the best kept secret in public health. Meanwhile, the myth of saints subsidising the health costs of sinners remains firmly entrenched in the minds of the public and continues to be cited as justification for further transfers of wealth.

This is for your own good

Since sin taxes can rarely be justified for the purpose of compensating abstainers, they can only be defended if the state has an obligation to improve the moral and physical well-being of the population by discouraging the purchase of demerit goods. This moral argument sits uneasily with the principles of individual liberty and self-determination which underpin free societies, but various intellectual arguments have been put forward in its favour.

In 2002, the economist Jonathan Gruber proposed a new rationale for sin taxes on tobacco which acknowledged that there are relatively few external costs associated with smoking, but that there is an inherent struggle between the smoker and his "future self".

> *Today's "self" is impatient. Faced with the tradeoff between the short-term pleasures of smoking and the long-term health damages of doing so, he will greatly discount the latter and decide to smoke. But tomorrow's "self" is much more patient and would prefer to quit smoking. The problem, however, is that tomorrow never comes.*

To help the "future self" win his battle against "today's self", Gruber recommended raising tobacco taxes still further.[81] In 2006, O'Donoghue and Rabin added to this analysis by portraying a society split between rational people and those with "self-control problems". By taxing potato chips, they said, the undisciplined element of society would be forced to act more logically.

Faced with an irrational and naive population, the state would be negligent not to intervene, as Cummings (2010) argues:

> *When consumers suffer from such cognitive failures, it is likely that they are not making consumption choices that maximize their welfare. In light of these failures, government regulation aimed at helping people promote their own welfare, such as a sin tax on sugary beverages, is both justified and necessary.*[82]

It is difficult to see how any of this differs from naked paternalism (indeed, O'Donoghue and Rabin describe their prescription as "optimal paternalism"[83]). It rests on the belief that, as Cummings puts it, "the government can increase individual welfare more efficiently than individuals themselves".[84] This is a proposition that can most charitably be described as debatable, but even if we accept the contention that the "future self" will one day regret smoking and eating too many crisps, it is not clear why we should take the hypothetical "future self" more seriously than the flesh-and-blood "today's self". Whose desires are real? The geriatric future self, with his regrets which require no sacrifice and no action? Or today's self, with his revealed preferences of a lifetime's smoking and overeating? It is easy to repent on one's death bed, but there are enough examples of people going back to their old ways after making a miracle recovery for us to question whether the sentiments of the future self should carry more weight than the actions of today's self. Can we really assume that people spend their whole lives as irrational beings and only become rational in their final days?

The future self is attractive to health campaigners because any words can be put in his mouth. Under their ventriloquism, he becomes a rational actor who desires only to eschew sinful pleasures. He might *say* that he enjoys binge-drinking and eating potato chips, but this is a form of false consciousness. Haavio (2007) took this logic a step further by adding a third group of people who are in denial about their lack of self-control. These "fully naïve individuals" would always oppose sin taxes, whereas the "sophisticated" individual would always vote for them.[85] Thus, the 'healthist' worldview always triumphs; those who support it are sophisticated people while those who oppose it are fools.[86] The very fact that they oppose sin taxes is evidence of their foolishness. Quod erat demonstrandum.

For the optimal paternalists, there are right and wrong choices which have been established with certainty by politicians and public health professionals who, unlike the lumpenproletariat, are rational, clear-headed and free from any base motives. These 'choice architects' view the masses as being highly susceptible, especially to the unholy trinity of advertising, price and availability, and if the health lobby does not manipulate (or 'nudge') consumers, industry will. It is therefore imperative that the health lobby gets there first.

This view of humanity leaves little scope for free will and self-determination. Since sinners lack self-control and suffer from "cognitive failures", they cannot be expected to make decisions for themselves. It is fitting that Kelly Brownell, America's best known advocate of fat taxes, drew a comparison between overeaters and lab rats as early as 1994:

> *Laboratory rats given convenience store delights—cheese curls, chocolate bars, marshmallows, cookies—will ignore available nutritious food, even as their body weight doubles and triples. Yet we do not fault these animals for a lack of discipline, nor need we change their biology. Remove bad foods, and the rats stay thin. Environment is the real cause of obesity.*[87]

Taxing people on grounds of overt paternalism is debatable on a number of grounds too obvious to rehearse here, but in this next section we shall entertain the notion that an infallible state has a moral duty to protect its citizens from themselves. Leaving aside the question of whether it is right to impose the values of one section of society upon another, how successful are sin taxes at tackling sin?

Do sin taxes work?

It would defy the most fundamental principle of economics if higher prices did not deter consumption. The price elasticity of cigarettes, for example, is generally held to be between -0.3 to -0.5, meaning that a 10 per cent increase in price reduces the number of cigarettes sold by 3 to 5 per cent.[88] This puts tobacco in the same bracket as kitchen appliances (-0.4), furniture (-0.41) and aeroplane tickets (-0.48) as a relatively—but not very—inelastic product.[89] Perhaps surprisingly, cigarettes are more price sensitive than such luxuries as flowers, dolls and cameras (which have price elasticities of -0.19, -0.17 and -0.15 respectively).[90] Health campaigners face the paradox of maintaining that nicotine is "more addictive than heroin" while citing price elasticity figures which show smokers to be more price sensitive than people who buy toothpicks.[91]

Anti-smoking advocates are less interested in the consumption elasticity (how many units are sold) than in the participation elasticity (how many smokers quit altogether). Price rises are less effective in reducing smoking prevalence than in reducing the number of (legal) cigarettes smoked. The participation elasticity for cigarettes is around half of the consumption elasticity at -0.1 to -0.3, meaning that a 10 per cent price rise should make 1-3 per cent of smokers quit.

The consumption price elasticity of alcohol is similar to that of cigarettes at around -0.44, suggesting that a 10 per cent price rise would reduce alcohol sales by 4.4 per cent.[92] The elasticity of ice cream and whole milk are within the same range (-0.4 and -0.48 respectively).[93] Consumers are more price sensitive when it comes to soft, sugary drinks which have a price elasticity of around -0.8.[94]

Figure 1 shows the relationship between smoking prevalence and cigarette affordability in the European Union (the 'cheaper' countries are on the left).[95] Figure 2 shows per capita alcohol consumption in EU countries compared with the affordability of drink (in this graph, the 'cheaper' countries are on the right).[96] There is a total lack of association between affordability of cigarettes and smoking prevalence, and a modest, but statistically significant, association between price and consumption of alcoholic drinks.

Figure 1

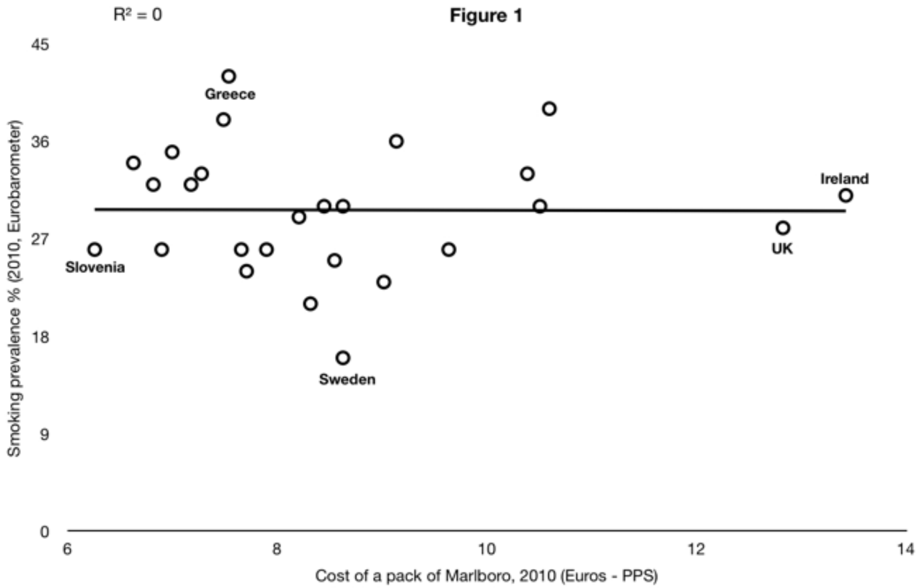
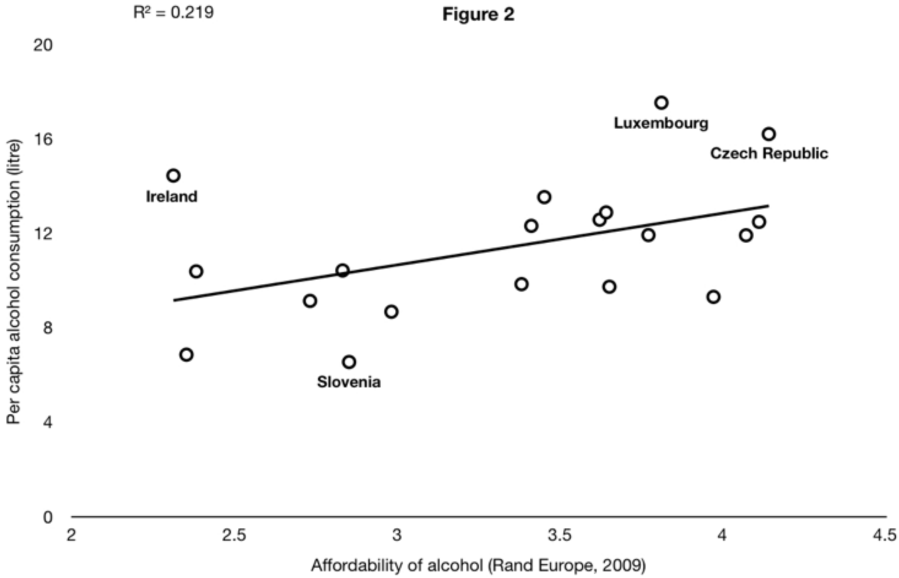


Figure 2



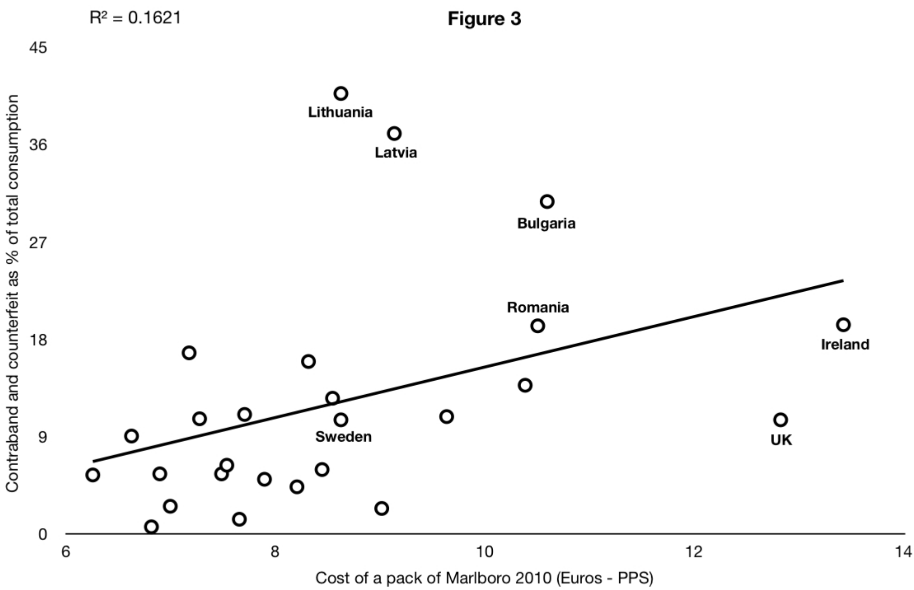
Cigarette taxes have undoubtedly helped reduce smoking prevalence in the past, but the policy of incremental price rises is now delivering diminishing returns in rich countries, partly due to the black market (figure 3 shows the relationship between cigarette affordability and illicit cigarette sales). It is widely assumed that high cigarette taxes are most effective at deterring young people from smoking, but a number of studies have challenged this.[97] Other studies have found that sin taxes reduce youth smoking, but fail to curb adult participation.[98]

Studies conducted since the 1990s have found a more inelastic demand for cigarettes than previously thought.[99] This is likely to be a reflection of the sustained anti-smoking activity over several decades which has whittled the smoking population down to a hardcore of users who are more resistant to sin taxes than previous generations. A 2004 study of sin taxes in California—a state renowned for its anti-tobacco fervour—found that price no longer had a statistically significant effect on smoking prevalence.[100] The authors concluded that:

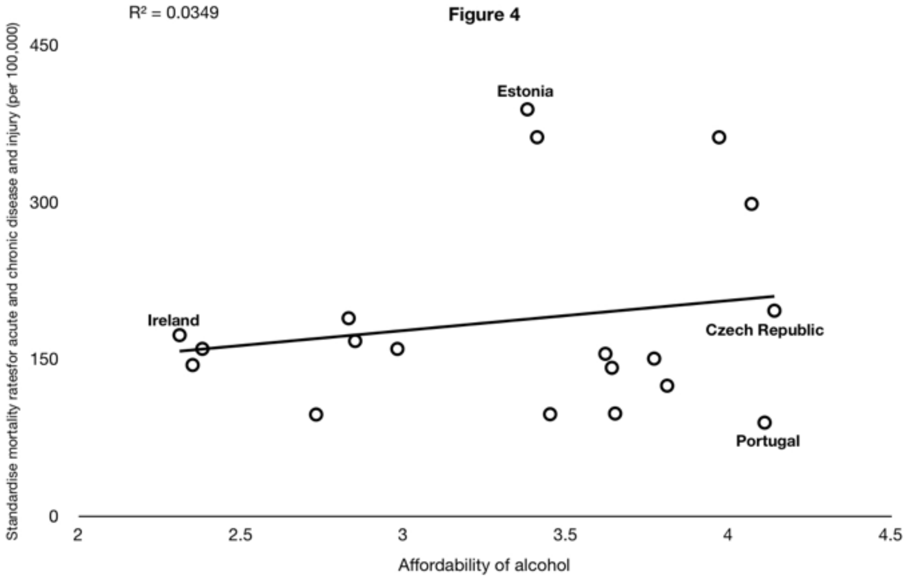
> *Since smoking prevalence is significantly lower than it was a decade ago, price increases are becoming less effective as an inducement for hard-core smokers to quit, although they may respond by decreasing consumption.*

A pan-European study in the journal Addiction found no relationship between price and adolescent smoking rates.101 A further study in the same journal found no correlation between changes in the affordability of cigarettes and changes in smoking prevalence in the EU. Despite cigarettes becoming 40 per cent less affordable between 2003 and 2009, many member states saw a rise in the number of smokers. The authors of the latter study admitted that this real-world experiment confounded their expectations and was contrary to the price elasticity models. They could only ruefully note that "the impact of reduced affordability was outweighed by other changes that we have been unable to identify."[102]

Figure 3



The case of food and alcohol is different in so far as a clear relationship between price and consumption still exists. However, while we can expect reductions in cigarette consumption to benefit the health of a nation, eating and drinking are not usually hazardous, and reductions in overall consumption do not necessarily result in less harm. When the Institute of Alcohol Studies charted the affordability of alcohol against alcohol-related harm, they found "no discernible relationship between affordability and harm"—see figure 4.[103]



Sin taxes are blunt instruments which are more likely to deter moderate users than abusers. Although the price elasticity of alcohol is -0.44, for heavy drinkers it is a more inelastic -0.28.[104] The same has been found to be true of heavy smokers and excessive eaters; the people who need to reduce their consumption are least responsive to price rises.

As Mark Thornton says, "while it seems clear that excise taxes reduce average consumption, it remains unclear whether such taxes actually promote reductions of sin... The most important consideration for alcohol policy, or aspirin policy for that matter, is not how much is consumed, but how it is consumed."[105] Thornton points out that sin taxes are inherently inefficient and prone to unintended consequences because they do not directly target sin, but rather seek to dampen the potential for sin. If the objective is to reduce drink-driving, for example, he suggests that higher petrol prices or a tax on late night restaurant meals make as much sense as taxing beer.[106]

In their study of alcohol price elasticity, Ayyagari et al. came to an important, if unsurprising, conclusion:

For the majority of individuals, price is a significant determinant of demand *for alcohol and these individuals are highly sensitive to price. For the other, smaller group, which consumes more alcohol, prices do not significantly affect consumption rates.*[107]

In the case of obesity, the most effective means of using the tax system to reduce obesity would be to tax people directly according to their body mass index. Such a policy would be widely—and rightly—viewed as both morally repugnant and discriminatory, and yet fat taxes by their nature discriminate against people on the basis of their lifestyle. Levying an income tax on the obese would be a fairer and more efficient way of tackling obesity than the scattergun approach of sin taxes on sugar and fat. As a means of reducing obesity, these taxes are extraordinarily ineffective.

According to Chouinard et al. (2007), a 10 per cent tax on dairy products would reduce fat intake by just two-thirds of a gramme—or six calories—per week.[108] Gelbach, Klick and Stratmann (2007) found that a 100 per cent tax on "unhealthy foods" would reduce average body mass index (BMI) by less than one per cent (a reduction in BMI of 0.2 points).[109] A study in the British Journal of Nutrition in 2011 claimed that a 10 per cent fat tax would reduce per capita consumption of full-fat milk by 5 ml a day and increase the consumption of reduced-fat milk by 7 ml a day. This equates to a reduction in full-fat milk consumption of just three pints per year—a net reduction in energy consumption of less than one calorie per day.[110] The same study predicted a 7.5 ml reduction in daily consumption of sugar-sweetened beverages, but even if we make the optimistic assumption that Coca-Cola drinkers would switch to nothing but water, this would save them only three calories per day. Since adult males require 2,500 calories per day to maintain a healthy weight, the impact on obesity rates would be somewhere beneath negligible.

This highlights the big drawback about sin taxes from a public health perspective. They are an effective way of raising revenue, an unreliable way of reducing consumption and an inefficient way of improving health.

Sin taxes are inefficient

Taxes on food and alcohol are inherently inefficient because they penalise saints and sinners alike. Tobacco taxes should be more effective because they only target sinners, but, as noted previously, countries with the highest tobacco duties are finding that further rises have only a limited impact. It seems that the effect of raising the price on inelastic products like cigarettes varies according to the time and place. The real question for policy-makers in Britain is whether continuous price hikes offers value for money where prices are already very high.

To take a scenario roughly analogous to Britain in 2012, let us say that there are ten million smokers paying £7.00 per pack. These ten million people represent 21 per cent of the population. A typical estimate of participation elasticity is -0.23, which means that a 10 per cent price hike should reduce smoking prevalence by 2.3 per cent.[111] Persuaded by anti-smoking campaigners that raising prices is the most effective way of cutting the smoking rate, the government duly enacts a 70p (10 per cent) tax increase. Following the elasticity model, 2.3 per cent of smokers find that they can either no longer afford their habit or no longer find that the benefits outweigh the cost. They quit, thereby reducing the smoking population from 10,000,000 to 9,770,000.

230,000 people have become ex-smokers, but at a great cost to the remaining 9,770,000. Since the average smoker consumes thirteen cigarettes a day, the 70p tax hike will cost them an extra £1.6 billion per year, in addition to existing tobacco taxes. The cost of getting each of the 230,000 smokers to quit is therefore £7,055 each—and this is not a one-off payment, it must be paid every year indefinitely. At an annual cost of £1.6 billion, the smoking rate has dropped from 21 per cent to 20.5 per cent.

At best, this would eliminate 2.3 per cent of the cost of smoking, but even if we take the most grossly inflated estimate of what that cost might be, it would be a saving of less than £1 billion. The intervention, therefore, would be loss-making. It is surely plausible that there are more efficient ways of helping people to stop smoking than by transferring large sums of money from the target group to the government. As already discussed, the government has no moral claim to this money on remunerative grounds and the tax fails to modify the behaviour of 97.7 per cent of the target group.

The unintended consequences of sin taxes

If sin taxes are set too low, they act as a stealth tax, but do not reduce consumption.[112] If they are set too high, the black market opens up and all the harms associated with prohibition begin to unfold. Higher prices encourage consumers to switch to alternative products, licit and illicit, which can also be abused. There is evidence that a decline in cigarette consumption leads to an increase in marijuana use and obesity.[113] A tax on alcopops in Australia led to people mixing their own drinks; a glaringly predictable outcome which had no effect on binge-drinking. At the softer end of the scale, a 2010 study found that soda taxes led to a moderate reduction in soft drink consumption which was "completely offset by increases in the consumption of other high-calories drinks."[114]

Ever since prohibition was discredited in the 1920s, reformers have been attracted to sin taxes as a means of discouraging an activity without making it illegal. By allowing people to indulge their sin, albeit at a higher cost, campaigners hope to avoid the crime, disorder and ill health that comes from outright criminalisation. This is wishful thinking. The unintended consequences of prohibition do not work on an either/or basis, rather they operate on a sliding scale. As John Stuart Mill once observed, "Every increase of cost is a prohibition, to those whose means do not come up to the augmented price".[115] Those who cannot meet that price are easily drawn to contraband and counterfeit goods, or theft, or substitute substances.

Unsurprisingly, studies which take into account the effects of smuggling find that cigarettes have a lower price elasticity than previously believed.[116] In Britain, where tobacco duty makes up over 80 per cent of the retail price of cigarettes, half of all rolling tobacco is smuggled[117] and there is a growing market for counterfeit cigarettes. In Egypt, an 80 per cent rise in cigarette taxes in 2010-11 led to the share of tobacco sold on the black market rising from 0.1 per cent to 7 per cent.[118]

The predictable response from anti-smoking campaigners has been to demand a clampdown on the illicit trade. The Anti-Saloon League made similar demands during Prohibition and champions of the War on Drugs make the same demands today. All such attempts fail to a greater or lesser extent. To expect a different outcome from a crackdown on illicit alcohol and tobacco today is to allow hope to triumph over experience.

Various legal means supplement the black market, including internet sales, purchases from other EU countries and, in the USA, sales from Indian reservations. Countries which tax tobacco and alcohol exorbitantly invite cross-border traffic from lower taxing neighbours. Liquor can be distilled easily in any bathroom or basement. Cakes and biscuits can be made in any kitchen. History shows that sin taxes on such products are absorbed comfortably at first, but ignite the black market once they become too onerous, with the poor being the first to dabble. As the sin tax rises, so too does smuggling until the market goes beyond the peak of the Laffer Curve and tax revenues begin to decline, despite the tax rate continuing to rise.

Real world examples of the Laffer Curve in action include Canada in the mid-1990s, when sharp rises in cigarette prices led to a surge in smuggling which drove the government to retreat and lower the tax. More recently, in 2011, Ireland's Office of the Revenue Commissioners issued a document reflecting on the effect of the country's tobacco duty, which is the highest in Europe. With an explicit nod to Arthur Laffer, they reported:

> *Laffer suggests there may be an optimum tax rate that maximises tax revenue (the peak of the Laffer curve), moving either direction (higher or lower taxes) from that peak will lower revenue.*
>
> *It seems likely that a Laffer type effect exists in the cigarette market in Ireland and the current level of taxation may be beyond the optimum. Therefore higher tax rates (higher prices) will lead to lower tax revenue.*[119]

The point at which sin taxes begin to reduce government revenue remains a matter for debate, but it seems that the highest taxing countries have reached, nearly reached or exceeded that point. If so, additional taxation will not only lead to greater criminal activity, but will undermine the lucrative, if unspoken, purpose of sin taxes, that of boosting government revenue.

Sin taxes are regressive

If the aim of sin taxes is to encourage abstinence, targeting inelastic goods invariably results in more misses than hits, and significant collateral damage. In the earlier example of a 10 per cent price hike on cigarettes, the 2.3 per cent of smokers who quit should benefit from better health, but the 97.7 per cent will experience only greater impoverishment. This should be of concern to policy-makers because smokers, like the obese, are disproportionately drawn from low income groups. An average smoker spends around £1,660 a year on cigarettes. This represents less than five per cent of post tax income for the richest ten per cent of earners, but it is more than 20 per cent of the income of the bottom decile. For pack-a-day smokers, it is more than 30 per cent (assuming they buy only duty-paid cigarettes).[120] In the case of drinking, the bottom quintile spends twice as much of their household income on alcohol than the top quintile, despite spending less money on drink in absolute terms,[121] and fat taxes have been estimated to cost the rich 0.1 per cent of their income whilst costing the poor 0.7 per cent of theirs.[122]

All of this is extraordinarily regressive by any standard, and yet politicians of all colours remain monastically silent on the issue. Their response is essentially that the poor shouldn't smoke and should cut down on their drinking. Gone are the days of politicians seeking re-election on a ticket of taking a penny off a pint of beer. Reformers are never likely to fret about 'beer poverty' in the same way as they worry about 'fuel poverty'. Although it is well known that indirect taxation is regressive, governments have increased taxes on widely used commodities for decades. As the Office for National Statistics notes, indirect taxes "take a higher proportion of income from lower income households, and therefore increase income inequality."[123] In the UK, direct taxes take 24 per cent from the richest and 10 per cent from the poorest, but the figures are almost exactly reversed when it comes to indirect taxes such as fuel duty, tobacco duty, VAT and alcohol duty.

Sin taxes are doubly regressive because they tend to target products which are disproportionately consumed by the poor. Those who campaign for the minimum pricing of alcohol—a sin tax by any other name—explicitly target drinks consumed by the poor and homeless while assuring the middle-class that their chardonnay will go untouched. The healthist agenda, enshrined on the Left in the rhetoric of 'health inequalities', is so dominant that it can overwhelm traditional concerns about poverty and inequality.

The iniquitous nature of sin taxes has inspired some choice rhetoric from those who describe themselves as health campaigners. The favourite counter-argument is that since the poor are more price sensitive, they are disproportionately blessed by the good health that supposedly comes from higher prices, as Kelly Brownell explained in 2009:

> *One objection to a tax on sugar-sweetened beverages is that it would be regressive. This argument arose with respect to tobacco taxes but was challenged successfully by proponents of the taxes, who pointed out that the*

> *poor face a disproportionate burden of smoking-related illnesses, that nearly all smokers begin to smoke when they are teenagers, and that both groups are sensitive to price changes.*[124]

This argument may have been “successfully challenged” in political terms, but the challenge remains intellectually incoherent. Brownell is merely restating his belief that a soda tax would be good for the health of the poor because they consume more soda and are more price sensitive, but this does not refute the charge that such a policy would be regressive. It is true that some poor people might abandon sugary beverages, but the money saved would only be spent on quenching their thirst with other drinks. They would not save a penny from the price hike and the majority who continued drinking Coca-Cola would be left poorer. Since low income groups are more likely to drink soda, the sin tax would fall most heavily upon them. This is unambiguously regressive.

According to Gruber and Koszegi, “tobacco taxes are progressive, at least in the U.S. context, with the self-control benefits through reduced smoking exceeding the higher tax cost for the poor.”[125] Like Brownell, they are confusing health with wealth. Having divorced the concept of regressivity from economics, Gruber and Koszegi conclude that “governments can raise significant revenue through higher cigarette taxes without placing a large net burden on the poor”. This assertion can only be greeted with incredulity. Since cigarettes are disproportionately bought by people on low incomes, one wonders where this “significant revenue” will come from if not from their wallets.

However tempting it may be to believe that sin taxes will benefit the poor, decades of punitive tobacco taxation have demonstrated nothing of the sort. In the 1960s, there was no difference in smoking participation between the classes but, as tobacco prices rose, the wealthiest quit in the greatest numbers and a class divide opened up. Today, after fifty years of incremental sin taxes, manual workers are twice as likely to smoke than non-manual workers. Amongst social class V, the male smoking rate is 45 per cent, a prevalence not seen amongst the professional class for forty years. For this professional class, the smoking rate is now 15 per cent. Amongst the homeless it is 90 per cent.[126]

All of this runs counter the superficially plausible notion that those who can least afford sinful products are more likely to abstain from them. It can be explained neither by price elasticity (which predicts lower smoking prevalence amongst the poor), nor by the model of addiction (which predicts that prevalence should be evenly distributed amongst the classes). The overlooked third variable is circumstance. One need only look at a map to see that the hotspots of heavy smoking, alcoholism, obesity and drug abuse are in the most economically deprived towns and regions. Sin taxes, like all indirect taxes, exacerbate this poverty and entrench inequality.

Conclusions

This paper has shown that sin taxes are not necessary for recouping lost revenue. On the contrary, the evidence shows that, if making consumers 'pay their way' was truly the aim of public policy, the government would be more justified in placing a saint tax on fruit and vegetables. Nor are sin taxes particularly effective at tackling sin or reducing harm. They are blunt tools which are largely ignored by the target group and create a range of unintended consequences which damage health, stoke criminality and, beyond a certain point, lead to the government receiving less tax revenue.

It is possible that politicians, being unaware of these facts, endorse sin taxes with the purest of motives, but thirst for government revenue remains by far the most likely explanation for the enduring use of taxes on popular products. Neither complete prohibition nor an unhindered free market would offer anything like such riches. For politicians, the ideal sin tax is one that is too small to deter purchase, but large enough to generate billions of pounds under the cover of a well-publicised health campaign. At best, this constitutes a raid on disposable income. At worst, it exploits addiction and forces the poor to pay for the government's mishandling of the public finances.

There can be no doubt that the costs of healthcare and social security will continue to soar as the population continues to age. It is predicted that one in three babies born in Britain today will live to celebrate their 100th birthday.[127] This is a magnificent achievement, but such unprecedented longevity will make it difficult to maintain the welfare state as its architects envisaged in the post-war years. Politicians around the world will have to face up to the financial challenges which will result from an ageing population, but it is perverse and unreasonable to compel those who are least likely to reach extreme old age to foot the bill. A politician who believes that sin taxes on 'unhealthy' products will reduce public expenditure is ignorant of the facts. A politician who knows that these products do not place a net burden on public services, but imposes sin taxes all the same, is cynical and opportunistic.

Furthermore, sin taxes breed criminality and contempt for the law. They sometimes give governments a financial incentive to foster the vice they profess to despise.[128] They are tools of disingenuous paternalists and would-be prohibitionists. They are favoured by political cowards who dare not raise taxes openly and honestly. Their enduring popularity amongst the political class is summed up in the maxim of the American politician Russell B. Long who said, "Don't tax me. Don't tax thee. Tax that fellow behind the tree."

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